

Модули, IGBT, Еурес, Infineon, купить в Минске tel. +375447584780
www.fotorele.net www.tiristor.by радиодетали, электронные компоненты
email minsk17@tut.by tel.+375 29 758 47 80 МТС






каталог, описание, технические, характеристики, datasheet, параметры, маркировка, габариты, фото

QR код



IGBT High Power Modules

IHV Modules

3300 V _{CES}							
Type		V _{CES} V	I _C A	V _{CESat} V T _{vj} = 25°C typ.	E _{on} /E _{off} mWs T _{vj} =125°C typ.	R _{thjC} K/W	Outline/ page
 dual modules	IGBT2 Standard						
	FF200R33KF2C	3300	200	3,40	365 /255	0,0570	H_IH9/4.11
	FF400R33KF2C	3300	400	3,40	730 /510	0,0260	H_IH6/4.11
 single switches	IGBT2 Standard						
	FZ800R33KF2C	3300	800	3,40	1450/1000	0,0130	H_IH4/4.10
	FZ1200R33KF2C	3300	1200	3,40	2200/1550	0,0085	H_IH7/4.11
	High Insulation						
	FZ400R33KL2C_B5	3300	400	3,00	1200/600	0,0260	H_IH10/4.12
FZ800R33KL2C_B5	3300	800	3,00	2250/1250	0,0130	H_IH11/4.12	
FZ1200R33KL2C_B5	3300	1200	3,00	3150/1900	0,0085	H_IH12/4.12	
 FD...  FD...-K chopper modules	IGBT2 Standard						
	FD400R33KF2C	3300	400	3,40	730/510	0,0260	H_IH4/4.10
	FD800R33KF2C	3300	800	3,40	1450/1000	0,0130	H_IH7/4.11
	IGBT2 Standard						
	FD400R33KF2C-K	3300	400	3,40	730/510	0,0260	H_IH4/4.10
	FD800R33KF2C-K	3300	800	3,40	1450/1000	0,0130	H_IH7/4.11
	High Insulation						
	FD800R33KL2C-K_B5	3300	800	3,40	2250/1250	0,0130	H_IH12/4.12
IGBT3 in IHV B ¹⁾							
FD1000R33HE3-K	3300	1000	2,55	1700/1400	0,0130	H_IH7B/4.11	
 single switches	IGBT3 in IHV B ¹⁾						
	FZ1000R33HE3	3300	1000	2,55	1700/1400	0,0130	H_IH4B/4.10
	FZ1200R33HE3	3300	1200	2,7	1950/1800	0,0110	H_IH7B/4.11
	FZ1500R33HE3	3300	1500	2,55	2550/2100	0,0085	H_IH7B/4.11
	FZ1000R33HL3	3300	1000	2,40	2150/1950	0,0130	H_IH4B/4.10
FZ1500R33HL3	3300	1500	2,40	3200/2950	0,0085	H_IH7B/4.11	


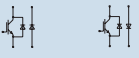
¹⁾ IHV B / IHV B: T_{vj,op} = 150°C

..._B5: 6.5kV housing / 10.2kV insulation

IGBT High Power Modules

IHV Modules



IGBT High Power

4500 V _{CES}							
Type	V _{CES} V	I _C A	V _{CESat} V T _{vj} = 25°C typ.	E _{on} /E _{off} mWs T _{vj} =125°C typ.	R _{thJC} K/W	Outline/ page	
 single switches	IGBT3 in IHV B ¹⁾						
	◆ FZ1200R45HL3	4500	1200	data on request		H_IH7B/4.11	
	◆ FZ800R45HL3	4500	800	data on request		H_IH4B/4.10	
	IGBT3 in B5 housing						
single switches	◆ FZ1200R45KL3_B5	4500	1200	2,50	6500/5300	0,0074 H_IH12/4.12	
	◆ FZ800R45KL3_B5	4500	800	2,50	4350/3550	0,0110 H_IH11/4.12	
 FD... FD...-K chopper modules	IGBT3 in IHV B ¹⁾						
	◆ FD800R45HL3-K	4500	800	data on request		H_IH7B/4.11	
	IGBT3 in B5 housing						
	◆ FD800R45KL3-K_B5	4500	800	2,50	4350/3550	0,0110 H_IH12/4.12	

¹⁾ IHV B / IHV B: T_{vj,op} = 150°C

..._B5: 6.5kV housing / 10.2kV insulation

◆ New type

6500 V _{CES}							
Type	V _{CES} V	I _C A	V _{CESat} V T _{vj} = 25°C typ.	E _{on} /E _{off} mWs T _{vj} =125°C typ.	R _{thJC} K/W	Outline/ page	
 single switches	IGBT2 Standard						
	■ FZ200R65KF2	6500	200	4,30	1900/1200	0,0330 H_IH10/4.12	
	■ FZ400R65KF2	6500	400	4,30	4000/2300	0,0170 H_IH11/4.12	
	■ FZ600R65KF2	6500	600	4,30	5900/3500	0,0110 H_IH12/4.12	
	IGBT3 Standard						
	◆ FZ250R65KE3	6500	250	3,00	2200/1400	0,0260 H_IH10/4.12	
	◆ FZ400R65KE3	6500	400	3,00	3450/2250	0,0150 H_IH11/4.12	
single switches	FZ500R65KE3	6500	500	3,00	4300/2800	0,0130 H_IH11/4.12	
	FZ600R65KE3	6500	600	3,00	5200/3400	0,0100 H_IH12/4.12	
	FZ750R65KE3	6500	750	3,00	6500/4200	0,0087 H_IH12/4.12	
	 chopper modules	IGBT2 Standard					
		■ FD200R65KF2-K	6500	200	4,30	1900/1200	0,0330 H_IH11/4.12
chopper modules	■ FD400R65KF2-K	6500	400	4,30	4000/2300	0,0170 H_IH12/4.12	
	IGBT3 Standard						
	◆ FD250R65KE3-K	6500	250	3,00	2200/1400	0,0260 H_IH10/4.12	
	◆ FD500R65KE3-K	6500	500	3,00	4300/2800	0,0130 H_IH12/4.12	

◆ New type

■ Not recommended for new design

IGBT High Power Modules

Diode Modules

Diode Modules						
Type	V_{RRM} V	I_F A	Q_r μ As $T_{vj}=125^\circ\text{C}$ typ.	R_{thjC} K/W per arm	Outline/ page	
 diode modules	IGBT4 Standard (IHM B) ¹⁾					
	◆ DD800S17H4_B2	1700	800	320	0,051	H_IH4B/4.10
	◆ DD1200S12H4	1200	1200	195	0,04	H_IH4B/4.10
	◆ DD1200S17H4_B2	1700	1200	460	0,038	H_IH4B/4.10
	Standard					
	■ DD400S17K6C_B2	1700	400	145	0,016	H_IH1/4.10
	DD600S17K3_B2	1700	600	260	0,051	H_IH4/4.10
	DZ3600S17K3_B2	1700	3600	1450	0,014	H_IH7/4.11
	Standard					
	DD200S33K2C	3300	200	220	0,108	H_IH9/4.11
	DD400S33K2C	3300	400	440	0,051	H_IH4/4.10
	DD800S33K2C	3300	800	900	0,025	H_IH4/4.10
	DD1200S33K2C	3300	1200	1300	0,017	H_IH4/4.10
	Low Loss					
	DD1200S33KL2C_B5	3300	1200	1450	0,017	H_IH11/4.12
	Standard in IHV B ¹⁾					
	◆ DD500S33HE3	3300	500	450	0,044	H_IH4B/4.10
	◆ DD1000S33HE3	3300	1000	900	0,0235	H_IH4B/ 4.10
	Standard in IHV B ¹⁾					
	◆ DD800S45HL3	4500	800	data on request		H_IH4B/ 4.10
◆ DD1200S45HL3	4500	1200	data on request		H_IH7B/ 4.11	
Standard in B5 housing						
◆ DD400S45KL3_B5	4500	400	700	0,051	H_IH11/4.12	
◆ DD800S45KL3_B5	4500	800	data on request		H_IH11/4.12	
◆ DD1200S45KL3_B5	4500	1200	2100	0,017	H_IH11/4.12	
 diode modules	Standard					
	◆ DD250S65K3	6500	250	540	0,056	H_IH11/4.12
	◆ DD500S65K3	6500	500	1050	0,028	H_IH11/4.12
	◆ DD600S65K3	6500	600	1300	0,022	H_IH11/4.12
	◆ DD750S65K3	6500	750	1600	0,0185	H_IH11/4.12

¹⁾ IHM B / IHV B: $T_{vj,op} = 150^\circ\text{C}$

◆ New type

■ Not recommended for new design

..._B2: AISiC base-plate

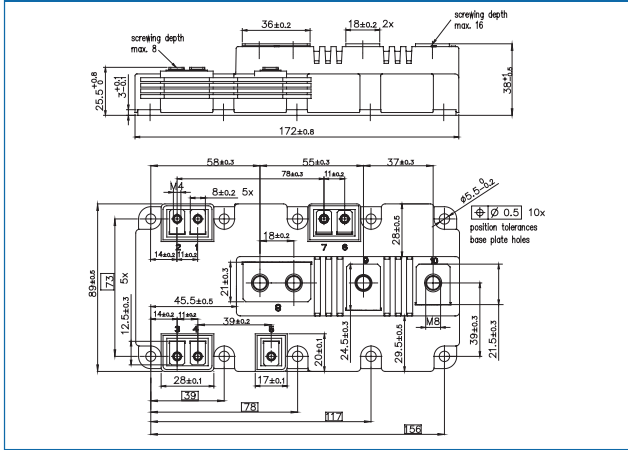
..._B5: 6.5kV housing / 10.2kV insulation

IGBT High Power

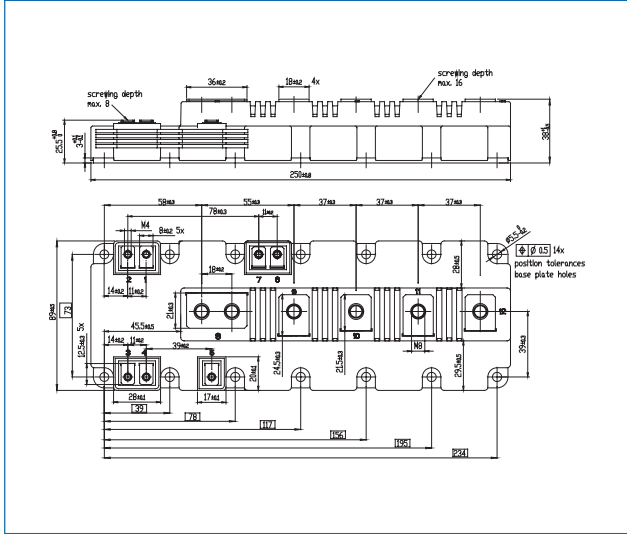
Outlines

IGBT
High Power

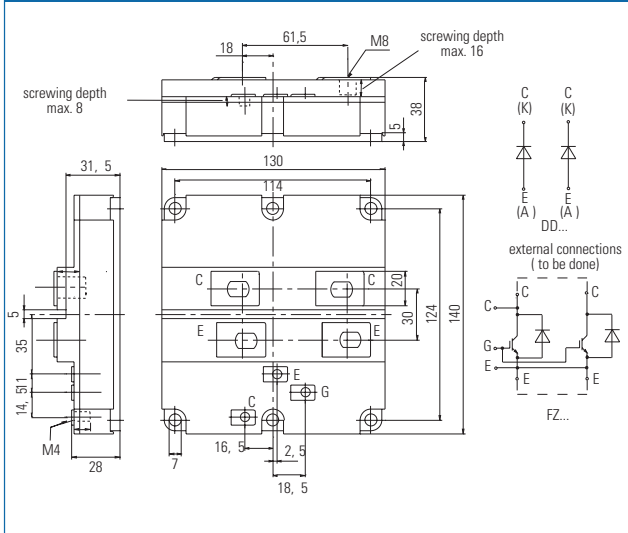
PrimePACK™ 2 H_PP2



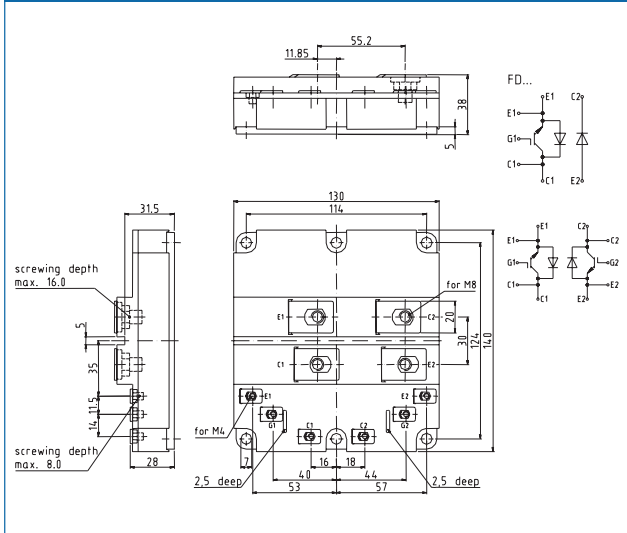
PrimePACK™ 3 H_PP3



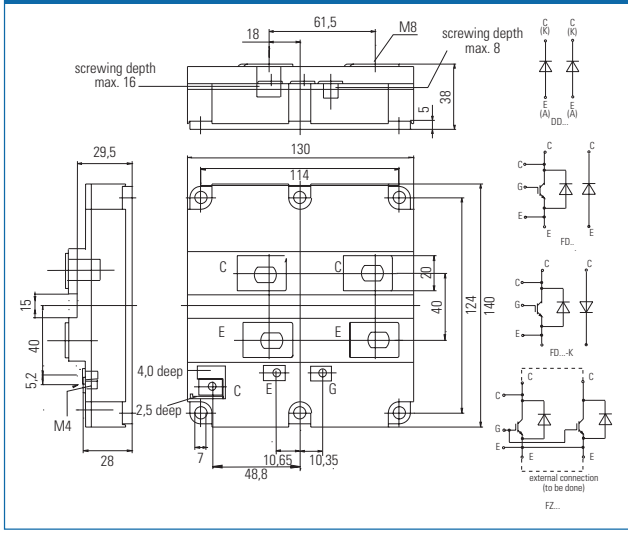
IHM H_IH1



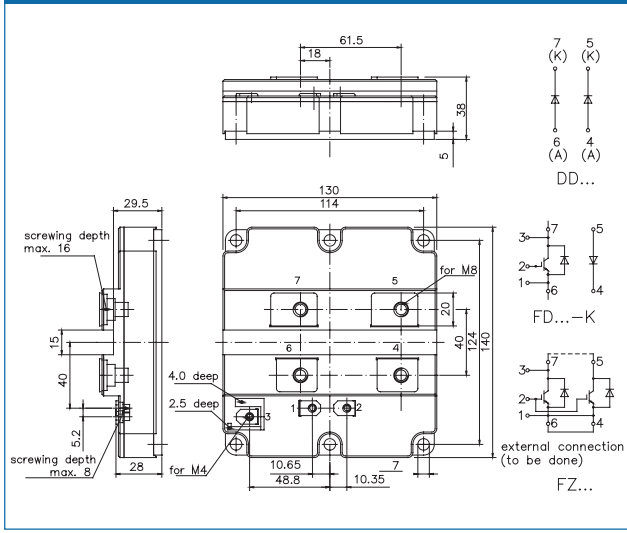
IHM H_IH2



IHM/IHV H_IH4

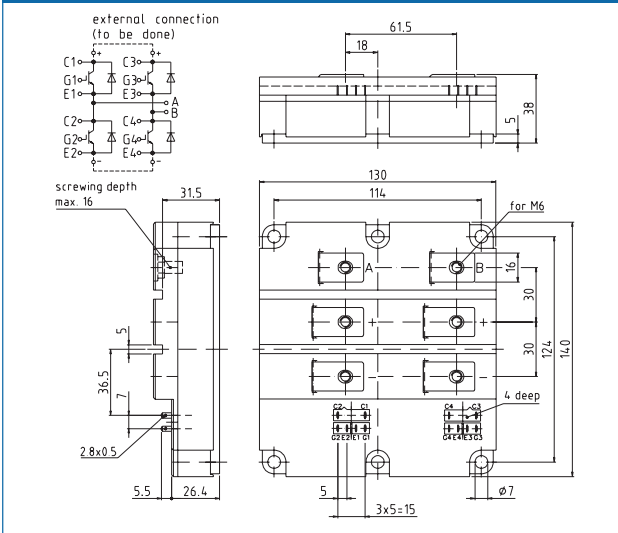


IHM/IHV H_IH4B



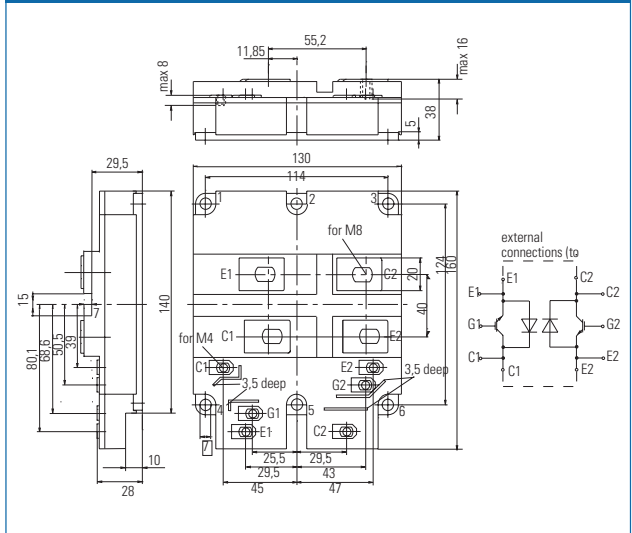
IHM

H_IH5



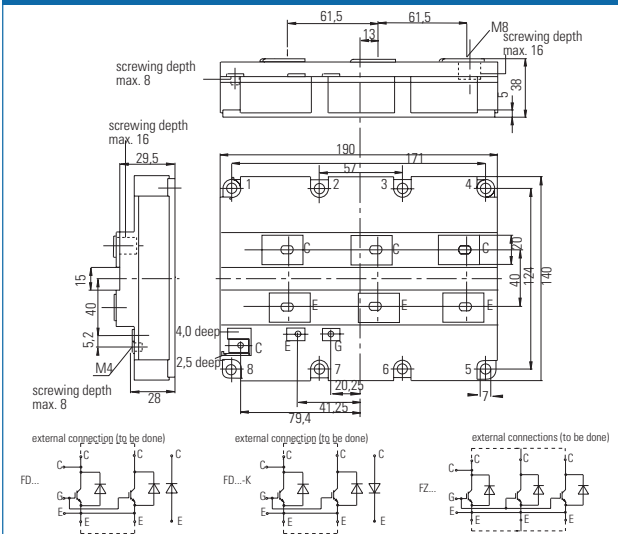
IHV

H_IH6



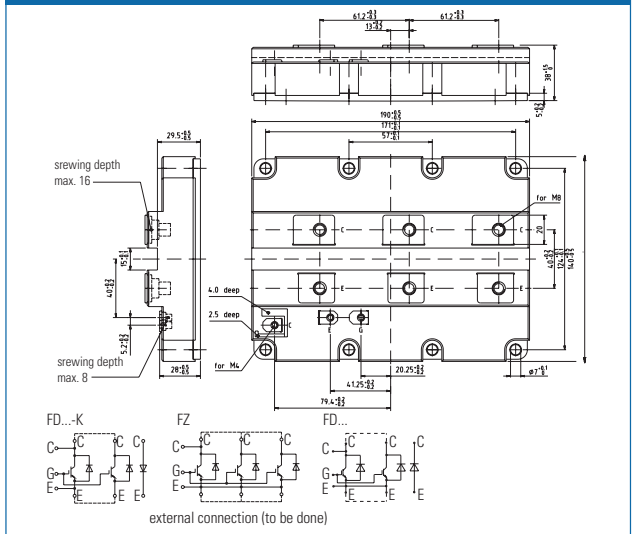
IHM/IHV

H_IH7



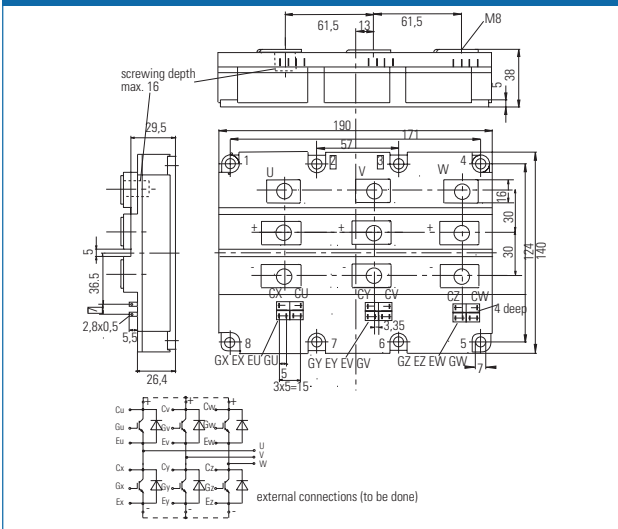
IHM/IHV

H_IH7B



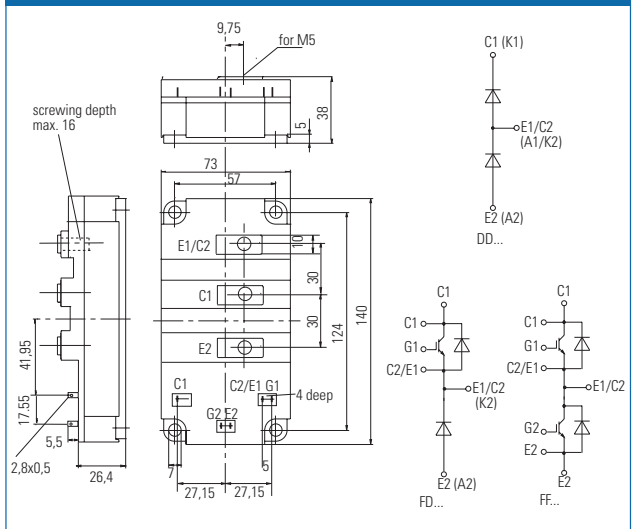
IHM

H_IH8

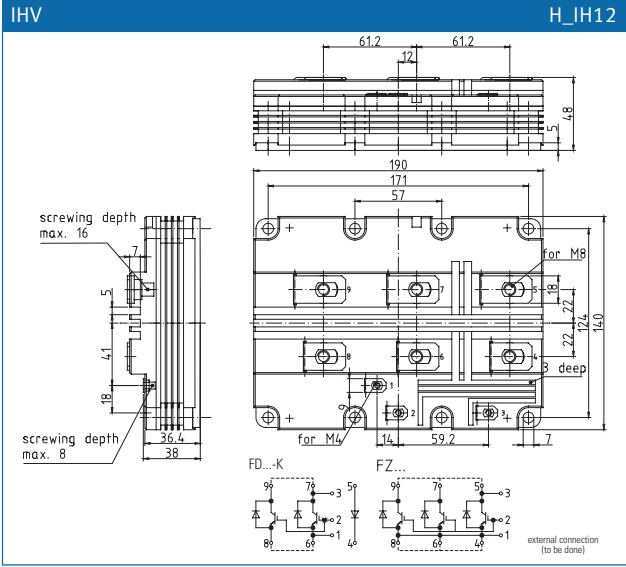
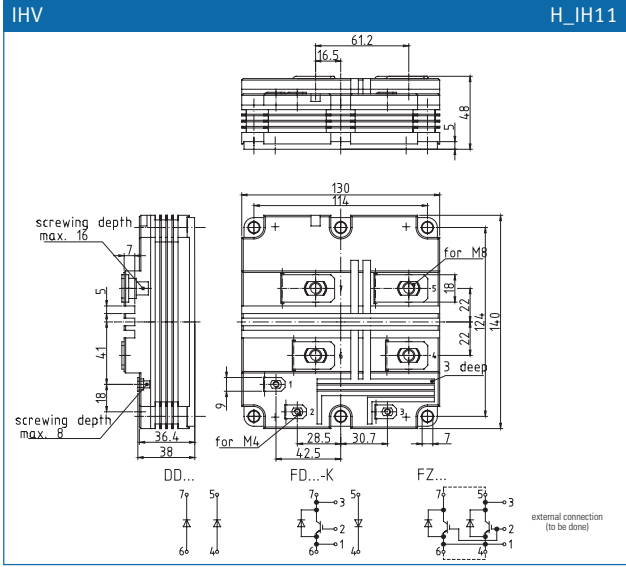
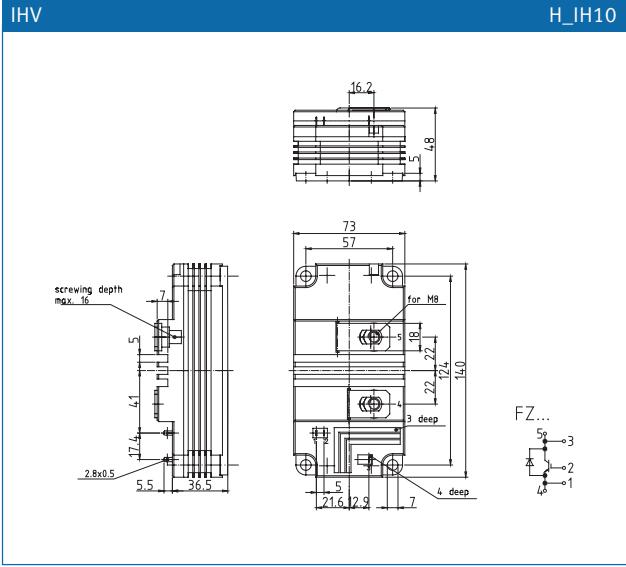


IHM/IHV

H_IH9



IGBT High Power



Package Units

IGBT High Power Modules

IHM Modules	Housing Size (overall)	Packing Units
IHM 73	73,0 mm x 140,0 mm	4
IHM 130	130,0 mm x 140,0 mm	2
IHM B 130	130,0 mm x 140,0 mm	2
IHM190	190,0 mm x 140,0 mm	1
IHM B 190	190,0 mm x 140,0 mm	1

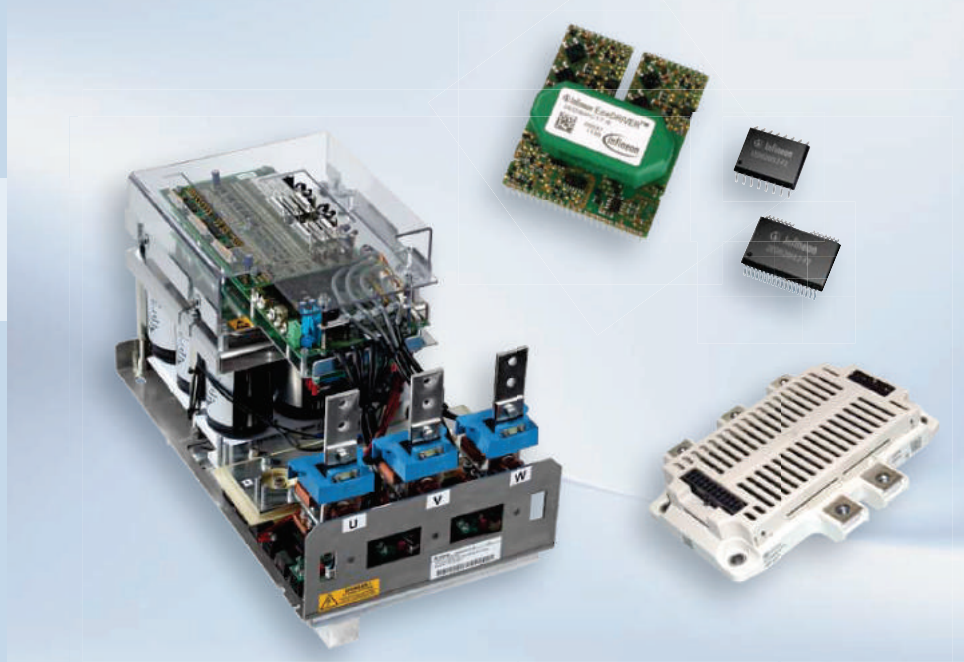
IHV Modules	Housing Size (overall)	Packing Units
IHV 73	73,0 mm x 140,0 mm	4
IHV 130	130,0 mm x 140,0 mm	2
IHV 190	190,0 mm x 140,0 mm	1
IHV B 130	130,0 mm x 140,0 mm	2
IHV B 190	190,0 mm x 140,0 mm	1

PrimePACK™ Modules	Housing Size (overall)	Packing Units
PP2	89,0 mm x 172,0 mm	3/12
PP3	89,0 mm x 250,0 mm	2/8

Links

Application Notes, Product Briefs, Flyers and Brochures	Type	Redirects
IHM, IHV Modules & PrimePACK™	Product Brief	http://www.infineon.com/ihm-ihv-primepack-product-brief
4.5kV modules in IHV portfolio	Webpage	http://www.infineon.com/ihv
3rd generation 6.5kV IGBT and diode modules	Webpage	http://www.infineon.com/6.5kV-Modules
IHM / IHV IGBT modules B-series	Webpage	http://www.infineon.com/ihm-b
PrimePACK™ IGBT Modules	Webpage	http://www.infineon.com/primepack
Application Notes for all packages & technologies	Application Note Collection	http://www.infineon.com/igbt-modules-application-notes
Product Briefs for all packages & technologies	Product Brief Collection	http://www.infineon.com/igbt-modules-product-briefs

Systems and Drivers



Today, system designers are challenged to reach the targets in terms of energy efficiency, reliability as well as rapid time to market. In addition to this, costs need to be optimized. To meet these demands, industries need solutions tailored to their applications. Infineon's system expertise, broad application competence and decades of experience in industrial electronics enable us to provide innovative, reliable and energy-saving power solutions.

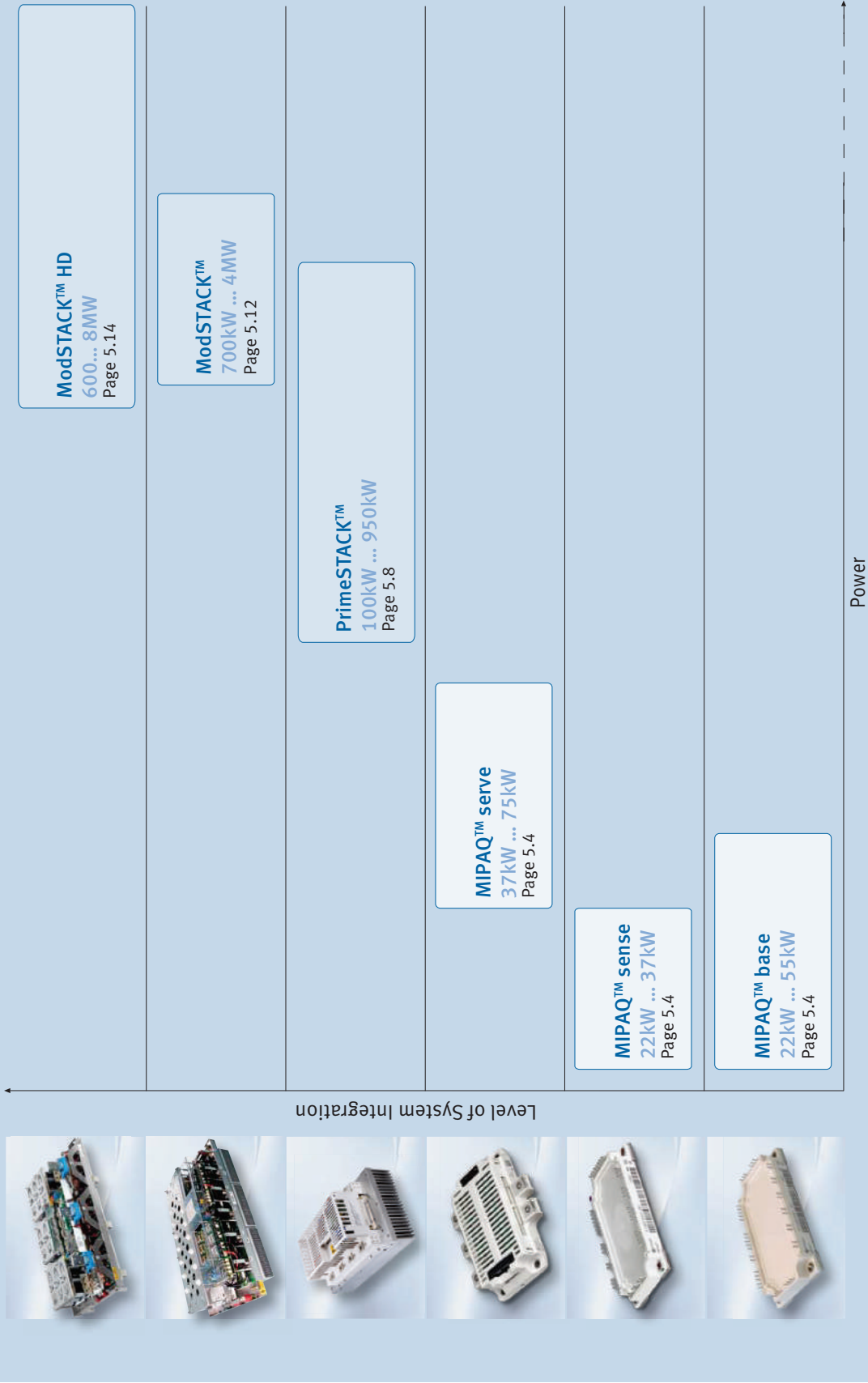
With MIPAQ™, Stacks and EiceDRIVER™ Infineon provides end-to-end solutions at different levels of system integration covering a power range from 1 kW up to 8 MW.

MIPAQ™ is Infineon's integrated IGBT module family and offers a very high level of functionality. The MIPAQ™ (Modules Integrating Power, Application and Quality) products are optimized solutions in mastering the challenge of designing powerful and compact inverters with enhancements in efficiency and ruggedness.

Stacks are based on Infineon's latest IGBT modules and IGBT technologies combined with thermal management, capacitors, drivers, sensors and temperature monitoring. The power section and control electronics are fully separated from each other by "reinforced isolation". Infineon's modules are developed for high efficiency, low inductance and simple paralleling of modules. In combination with specially designed high performance heat exchangers, the modules can easily reach maximum output power. All inverter- and various converter-topologies are available.

The **EiceDRIVER™** family provides a solution to control and protect Infineon's IGBT modules reliably and efficiently. Infineon's HV Gate Drivers are the best choice to drive all IGBT modules up to 1700 V.

Overview Stacks and MIPAQ™



MIPAQ™


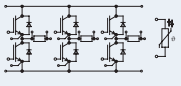
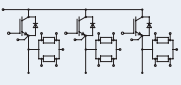


The MIPAQ™ family was developed in order to offer Modules Integrating Power, Application and Quality. It is a functional product family within Infineon's IGBT modules portfolio and as such dedicated to useful integration of electronics into power modules. The combination of an IGBT module and integrated sensing and driving electronics leads to an optimized solution in mastering the challenge of designing powerful and compact inverters for low and medium power. It eases the cost situation on the one hand and contributes to energy saving on the other hand. Thus, it improves the profitability and protects our environment at the same time.


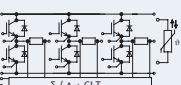
The module family starts with MIPAQ™ base, which provides an IGBT sixpack plus current sense shunts inside. Due to the integration of specially designed shunts, the performance with regard to system cost is excellent. MIPAQ™ base modules in sixpack configuration with NTC are available in the well-proven EconoPACK™ 3 housing with 75 A, 100 A and even 150 A nominal current and 1200 V blocking voltage. MIPAQ™ base shunt modules save space and help to manage the temperature on the PCB with very high measurement accuracy.

The next level of integration is represented by MIPAQ™ sense and MIPAQ™ serve. MIPAQ™ sense integrates an IGBT sixpack in the range up to 100 A at 1200 V and fully digital current measurement with galvanically isolated output signals. The measurement principle uses the Sigma Delta method. The MIPAQ™ serve consists of an IGBT sixpack plus a full set of drivers and temperature measurement on top of the IGBT module. It is a plug and play solution for high current drive applications. Inside the module, there are galvanically isolated drivers based on Infineon's Coreless Transformer Technology. The temperature measurement of the base plate inside the module offers an isolated signal as well. MIPAQ™ serve covers a range from 100 A up to 200 A at 1200 V blocking voltage and features the EconoPACK™ 4 package.


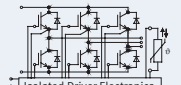
MIPAQ™ base

1200 V _{CES}								
Type	V _{CES} V	I _C A	V _{CESat} V T _{vj} = 25°C typ.	P _{tot} W	R _{thJC} K/W max	R _{shunt} mΩ T _{vj} = 25°C typ.	Outline/ page	
 sixpack with shunts & NTC	IGBT 4							
	IFS75B12N3T4_B31	1200	75	1,85	385	0,39	2,40 M_E3n/5.5	
	IFS100B12N3T4_B31	1200	100	1,75	515	0,29	1,50 M_E3n/5.5	
IFS150B12N3T4_B31	1200	150	1,75	750	0,20	1,00 M_E3n/5.5		
 tripack high with shunts	IGBT 4							
	IFT150B12N3E4*	1200	150	1,75	750	0,20	1,20 M_E3h/5.5	

MIPAQ™ sense

1200 V _{CES}								
Type	V _{CES} V	I _C A	V _{CESat} V T _{vj} = 25°C typ.	P _{tot} W	R _{thJC} K/W max	R _{shunt} mΩ T _{vj} = 25°C typ.	Outline/ page	
 $\Sigma / \Delta + CLT$	IGBT 4							
	IFS75S12N3T4_B11	1200	75	1,85	350	0,43	2,40 M_E3o/5.5	
	IFS100S12N3T4_B11	1200	100	1,75	455	0,33	1,50 M_E3o/5.5	

MIPAQ™ serve

1200 V _{CES}								
Type	V _{CES} V	I _C A	V _{CESat} V T _{vj} = 25°C typ.	E _{on} +E _{off} mWs T _{vj} =125°C typ.	R _{thJC} K/W max	Outline/ page		
 Isolated Driver Electronics	IGBT 4							
	IFS100V12PT4	1200	100	1,75	22	0,30 M_EP4v/5.5		
	IFS150V12PT4	1200	150	1,75	34	0,22 M_EP4v/5.5		
	IFS200V12PT4	1200	200	1,75	40	0,15 M_EP4v/5.5		

...B11 PressFIT modules ...B31 modules with pins for solder connection

* Low side to be found in EconoPACK™ configuration on page 1.14.

PrimeSTACK™



The PrimeSTACK™ family is a complete switch solution for power electronic circuits containing all the necessary components for current, voltage and temperature measurements, and uses the field proved 62 mm Infineon IGBT modules.

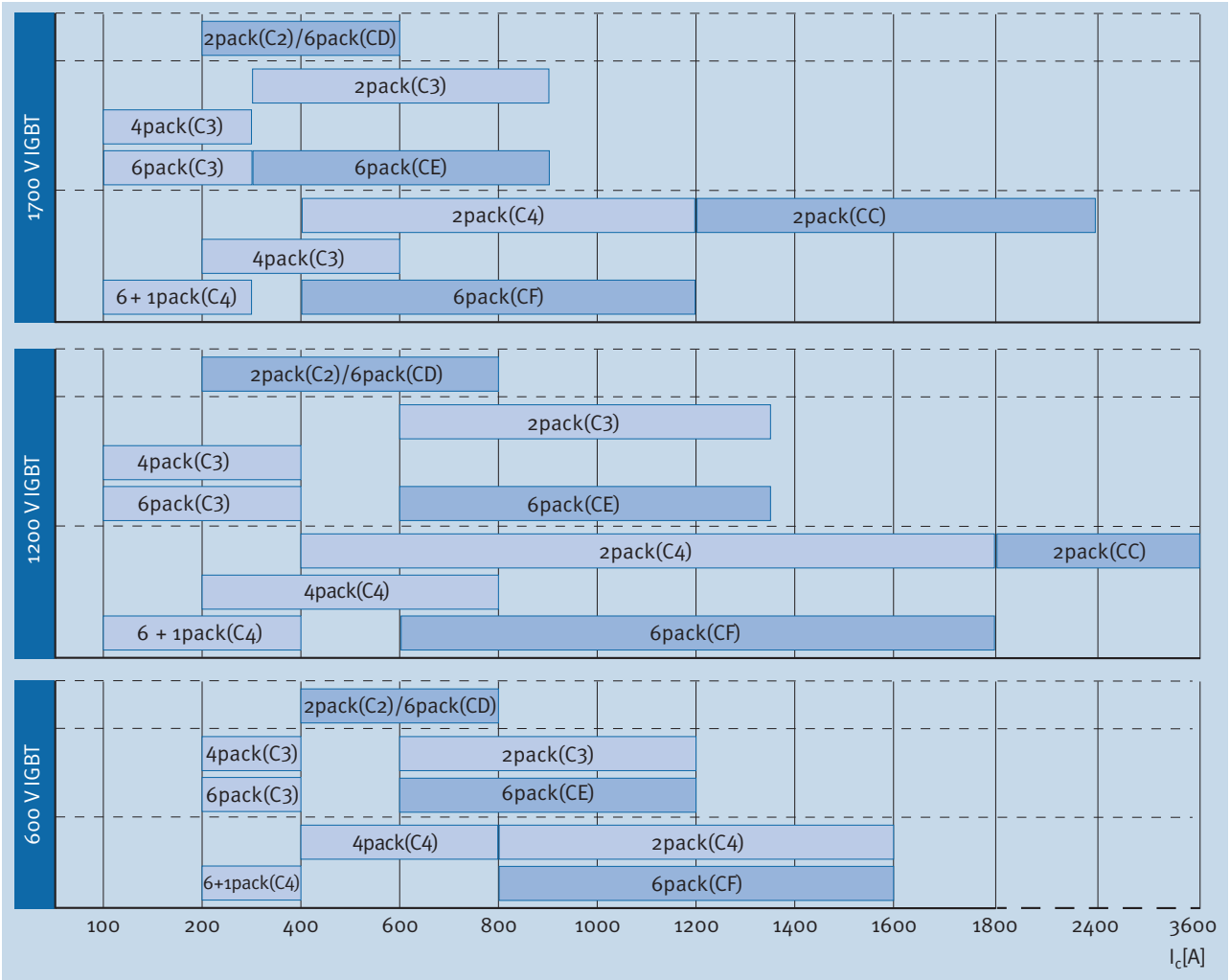
Control electronics and the power connections are fully separated from each other by “reinforced isolation”. With several superior monitor functions, PrimeSTACK™ offers a self protecting switch function. PrimeSTACK™ enables the development of highly efficient and safe inverters, quickly and with the minimum effort for the designer. The product scope covers chip current ratings from 100A up to 3600A at 600V, 1200V or 1700V.

General features

- 600V, 1200V, 1700V IGBT implemented
- EiceDRIVER™ inside
- Based on Infineon standard IGBT modules
- Current sense of every output leg
- Temperature sense
- Optional DC-link voltage monitoring
- Analogue output of all sensor signals
- Reinforced isolation according to EN50178

Available configurations

Systems and Drivers



IGBT PrimeSTACK™ Topology	Description
	1/2 B2I (2pack)
	B2I (4pack)
	B6I (6pack)
	B6I + 1/2 B2IHK (6pack + chopper)

New PrimeSTACK™ packages	
CC: 2 x C4 per heatsink	
CD: 3 x C2 CE: 3 x C3 CF: 3 x C4 per heatsink	

PrimeSTACK™

IGBT3 600 V _{CES}								
V _{AC} = 230 V _{RMS} /V _{DC} =370 V								
P _{max} ⁴⁾ [kW]	I _{RMS} ¹⁾ [A]	f _{SWmax} [kHz]	Stack type	Topology	Implemented IGBT3 Modules	Case Cooling	Weight [kg]	Width x depth x height [mm]
2 x 70	2 x 208	20	4PS02006E33G31632	B2I (4pack)	2 x FF200R06KE3	C3 air	9.1	216 x 280 x 167
95	283	20	6PS04006E33G29000 *)	B6I (6pack)	3 x FF400R06KE3	C3 air	9.1	216 x 280 x 167



IGBT2 Fast 1200 V _{CES}								
V _{AC} = 400 V _{RMS} /V _{DC} =650 V								
P _{max} ⁴⁾ [kW]	I _{RMS} ²⁾ [A]	f _{SWmax} [kHz]	Stack type	Topology	Implemented IGBT2 Modules	Case Cooling	Weight [kg]	Width x depth x height [mm]
215	366	13	2PS06012S42G28187 *)	½B2I(2pack)	2 x FF300R12KS4	C2 air	6.3	216x200x167
2 x 73	2 x 125	20	4PS01512S43G34512	B2I (4pack)	2 x FF150R12KS4	C3 air	9.1	216x280x167
2 x 107	2 x 183	20	4PS03012S43G30699	B2I (4pack)	2 x FF300R12KS4	C3 air	9.1	216x280x167
100	168	16	6PS03012S43G28199 *)	B6I (6pack)	3 x FF300R12KS4	C3 air	9.1	216x280x167



IGBT3 1200 V _{CES}								
V _{AC} = 400 V _{RMS} /V _{DC} =650 V								
P _{max} ⁴⁾ [kW]	I _{RMS} ²⁾ [A]	f _{SWmax} [kHz]	Stack type	Topology	Implemented IGBT3 Modules	Case Cooling	Weight [kg]	Width x depth x height [mm]
335	569	8	2PS12012E33G27261 *)	½B2I(2pack)	3 x FF400R12KE3	C3 air	9.2	216x280x167
422	717	6	2PS16012E34G26571 *)	½B2I(2pack)	4 x FF400R12KE3	C4 air	11.8	216x360x167
2 x 84	2 x 143	20	4PS01512E33G30487 *)	B2I (4pack)	2 x FF150R12KE3G	C3 air	9.1	216x280x167
79	134	20	6PS01512E33G30863 *)	B6I (6pack)	3 x FF150R12KE3G	C3 air	9.1	216x280x167
107	181	20	6PS03012E33G27093 *)	B6I (6pack)	3 x FF300R12KE3	C3 air	9.1	216x280x167
124	210	20	6PS04012E33G26572 *)	B6I (6pack)	3 x FF400R12KE3	C3 air	9.2	216x280x167
140	237	20	6PS04012E33G30188 *)	B6I (6pack)	3 x FF400R12KE3	C3 air ⁵⁾	8.9	216x280x165



IGBT3 1700 V _{CES}								
V _{AC} = 690 V _{RMS} /V _{DC} =1100 V								
P _{max} ⁴⁾ [kW]	I _{RMS} ³⁾ [A]	f _{SWmax} [kHz]	Stack type	Topology	Implemented IGBT3 Modules	Case Cooling	Weight [kg]	Width x depth x height [mm]
330	325	20	2PS06017E32G28213 *)	½B2I(2pack)	2 x FF300R17KE3	C2 air	6.3	216x200x167
580	571	6	2PS12017E34G28217 *)	½B2I(2pack)	4 x FF300R17KE3	C4 air	11.8	216x360x167
2 x 168	2 x 165	20	4PS03017E33G30260 *)	B2I (4pack)	2 x FF300R17KE3	C3 air	9.1	216x280x167
179	176	15	6PS03017E33G30907 *)	B6I (6pack)	3 x FF300R17KE3	C3 air ⁵⁾	9.9	216x280x165



- 1) typical output current at V_{DC}= 370V, V_{AC}=230V, f_{SW}=5kHz, f₀=50Hz, cos(φ)=0.85, T_A=40°C, T_{vjmax}≤125°C
- 2) typical output current at V_{DC}= 650V, V_{AC}=400V, f_{SW}=5kHz, f₀=50Hz, cos(φ)=0.85, T_A=40°C, T_{vjmax}≤125°C
- 3) typical output current at V_{DC}=1100V, V_{AC}=690V, f_{SW}=2kHz, f₀=50Hz, cos(φ)=0.85, T_A=40°C, T_{vjmax}≤125°C
- 4) P_{max} for 3-phase systems
- 5) high efficient heatsink
- *) without V-option

PrimeSTACK™ with DC Link

IGBT4 1200 V _{CES}										
V _{AC} = 400V _{RMS} /V _{DC} =650V										
P _{max} [kW]	I _{RMS} ¹⁾ [A]	f _{SW} [kHz]	f _{SWmax} [kHz]	Stack type	Implemented IGBT4 Modules	DC link [mF]	Topology	Case Cooling	Width x depth x height [mm]	
180	306	5	20	6PS04012E4DG36022	6 x FF200R12KE4	2.4	3 x 2pack	CD air (3xC2)	645 x 310 x 300	
236 ²⁾	401	5	12	2PS09012E42G35567 ^{*)}	2 x FF450R12KE4	0.8	2pack	C2 air	216 x 230 x 288	
254	432	5	12	6PS09012E4DG35566	6 x FF450R12KE4	2.4	3 x 2pack	CD air (3xC2)	645 x 310 x 300	
429	729	5	6	6PS18012E4FG35689	12 x FF450R12KE4	4.8	3 x 2pack	CF air (3xC4)	645 x 438 x 300	
487	828	5	6	6PS18012E4FG34676	12 x FF450R12KE4	4.8	3 x 2pack	CF air (3xC4) with high efficient heatsink	645 x 438 x 300	
453 ²⁾	770	5	6	2PS18012E44F34383	4 x FF450R12KE4	8.48	2pack	C4 air with high efficient heatsink and fan	324 x 651 x 381	
952 ²⁾	1616	3	3	2PS36012E4CG34996	8 x FF450R12KE4	4.0	2pack	CC air (2xC4)	371 x 475 x 312	
952	1616	3	3	6PS36012E4CG35121	24 x FF450R12KE4	12.0	3 x 2pack	3 x CC air	1142 x 475 x 318	
		5	12	6PS04512E43W37986	3 x FF450R12KE4	2.4	3 x 2pack	C3 air	216 x 315 x 390	

IGBT4 1700 V _{CES}										
V _{AC} = 690V _{RMS} /V _{DC} =1100V										
P _{max} [kW]	I _{RMS} ³⁾ [A]	f _{SW} [kHz]	f _{SWmax} [kHz]	Stack type	Implemented IGBT4 Modules	DC link [mF]	Topology	Case Cooling	Width x depth x height [mm]	
583 ²⁾	574	2	7	2PS12017E44G35911 ^{*)}	4 x FF300R17KE4	1.6	2pack	C4 air	216 x 360 x 288	
643 ²⁾	633	2	7	2PS12017E44F36671 ^{*)}	4 x FF300R17KE4	1.6	2pack	C4 air with high efficient heatsink and fan	270 x 671 x 291	
600	591	2	7	6PS12017E4FG35151 ^{*)}	12 x FF300R17KE4	4.8	3 x 2pack	CF air (3xC4)	645 x 438 x 300	
640 ²⁾	630	2	7	2PS12017E44F38055	4 x FF300R17KE4	1.6	2pack	C4 air with high efficient heatsink and fan	270 x 671 x 291	

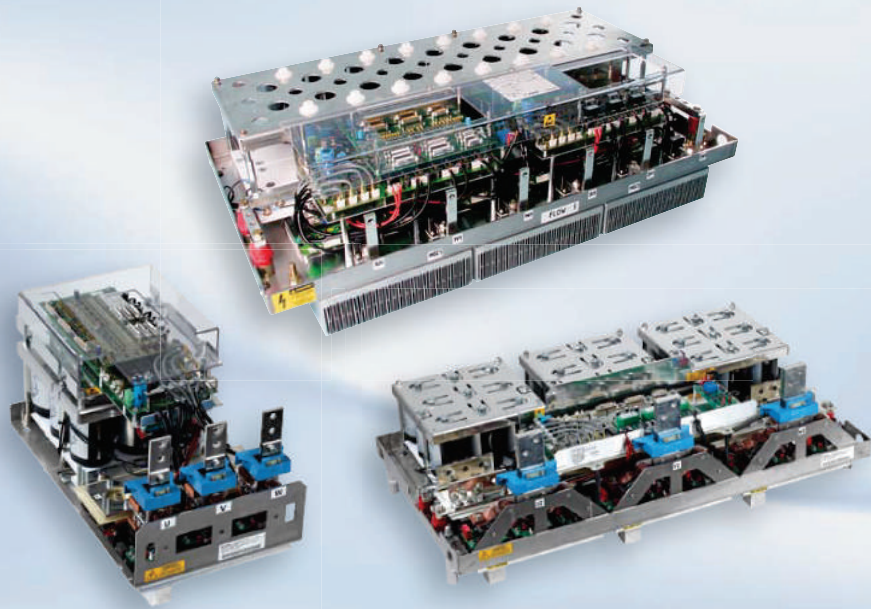
1) typical output current at V_{DC} = 650V, V_{AC} = 400V, f_{SW} = 5kHz, f₀ = 50Hz, cos(φ) = 0.85, T_A = 40°C, T_{vjmax} ≤ 125°C

2) P_{max} for 3-phase systems likewise 3 x 2pack types

3) typical output current at V_{DC} = 1100V, V_{AC} = 690V, f_{SW} = 2kHz, f₀ = 50Hz, cos(φ) = 0.85, T_A = 40°C, T_{vjmax} = ≤ 125°C.

*) without V-option

ModSTACK™ ModSTACK™ HD

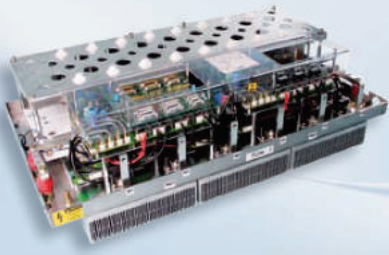


The ModSTACK™ Family combines Infineon Technologies IGBT modules and IGBT gate-drivers to achieve current ratings from 600 A up to 2050 A at line supply up to 690 V AC. The appropriate interfaces and thermal management are included. The available topologies include three-phase inverters.


General features

- Modular stack system designed for industrial approved cabinets
- Low inductance DC link with polypropylene or electrolytic capacitors
- Integrated IGBT driver
- Voltage signals for control and monitoring
(currents, voltages, short circuit, heat sink temperature, failure signals)
- Liquid or forced air cooling available
- Electrical or optical interface for digital control signals available
- Up to 4 units can be operated in parallel

ModSTACK™

		
	ModSTACK™ 3	
Maximum dimensions Width x Depth x Height [mm]	1090 x 596 x 470	
Cooling	forced air	liquid
Topology	B6I	B6I
Max. current*) [I _{RMS}] at U _{DC} =800...1100V (≈450...690V _{AC})	700	1082
Approximate maximum power *) With cos(φ) = 0.85	840 kVA 710 kW	1290 kVA 1100 kW

*) typical output current at V_{DC}=1100V, f_{sw}=2 kHz, V_{AC}=690V, f₀=50Hz, cos_φ=0.85, T_a=40°C, T_{jmax}=T_{jop}

IGBT3 1700 V _{CES} V _{AC} = 690 V _{RMS} / V _{DC} = 1100V									
P _{max} [kW]	I _{RMS} ¹⁾ [A]	f _{sw} [kHz]	cos(φ)	f _{swmax} ²⁾ [kHz]	Stack type	Implemented IGBT3 Modules	Topology	Case Cooling	Width x depth x height [mm]
744	629	2.0	-0.99	3.0	6MS24017E33F33878	6x FF1200R17KE3_B2	B6I	MS3 air ³⁾	1090 x 596 x 470
784	663	2.0	0.99	6.0	6MS12017E33F33879	6x FF600R17KE3_B2	B6I	MS3 air ³⁾	1090 x 596 x 470
711	700	2.0	0.85	3.0	6MS24017E33G32859	6x FF1200R17KE3_B2	B6I	MS3 air	1090 x 596 x 330
634	536	2.0	0.99	3.0	6MS12017E33W33373	6x FF1200R17KE3_B2	B6I	MS3 liquid	1090 x 496 x 258
710	600	2.0	-0.99	3.0	6MS12017E33W33372	6x FF1200R17KE3_B2	B6I	MS3 liquid	1090 x 496 x 258
824	726	3.0	0.95	3.0	6MS24017E33W31361	6x FF1200R17KE3_B2	B6I	MS3 liquid	1090 x 596 x 273
824	726	3.0	0.95	3.0	6MS24017E33W32274 ⁴⁾	6x FF1200R17KE3_B2	B6I	MS3 liquid	1090 x 596 x 274
852	750	2.5	0.95	3.0	6MS24017E33W32605	6x FF1200R17KE3	B6I	MS3 liquid	1090 x 596 x 251
852	750	2.5	0.95	3.0	6MS24017E33W32607 ^{*)}	6x FF1200R17KE3	B6I	MS3 liquid	1090 x 596 x 251
832	800	2.5	0.87	2.5	6MS24017E33W32859	6x FF1200R17KE3_B2	B6I	MS3 liquid	1090 x 596 x 330
832	800	2.5	0.87	2.5	6MS24017E33W32860	6x FF1200R17KE3_B2	B6I	MS3 liquid	1090 x 596 x 330
987	860	3.5	0.96	3.5	6MS24017E33W32832	6x FF1200R17KE3	B6I	MS3 liquid	1090 x 596 x 329
987	860	3.5	0.96	3.5	6MS24017E33W32780	6x FF1200R17KE3	B6I	MS3 liquid	1090 x 596 x 329
852	750	2.5	0.95	3.0	6MS24017E33W33846	6x FF1200R17KE3	B6I	MS3 liquid	1090 x 596 x 272
852	750	2.5	0.95	3.0	6MS24017E33W33847	6x FF1200R17KE3	B6I	MS3 liquid	1090 x 596 x 272
1048	974	2.0	0.90	4.5	6MS16017E33W32630	6x FF800R17KE3_B2	B6I	MS3 liquid	1090 x 596 x 257
1164	974	1.7	1.00	5.0	6MS16017E33W32779	6x FF800R17KE3	B6I	MS3 liquid	1090 x 596 x 329
1165	975	1.7	1.00	5.0	6MS16017E33W32831	6x FF800R17KE3	B6I	MS3 liquid	1090 x 596 x 329
1164	1082	2.0	0.90	3.0	6MS24017E33W32629	6x FF1200R17KE3_B2	B6I	MS3 liquid	1090 x 596 x 257
1164	1082	2.0	0.90	3.0	6MS24017E33W34402	6x FF1200R17KE3_B2	B6I	MS3 liquid	1090 x 596 x 257

¹⁾ typical output current at V_{DC}=1100V, V_{AC}=690V, 2...3.5kHz (see table), f₀=50Hz, cos(φ)=0.85...1 (see table), T_a=40°C, T_{vjmax}≤125°C

²⁾ Current derating may be required

³⁾ with fan included

⁴⁾ stack contains customize filter resistors at output

^{*)} without V-option



ModSTACK™

IGBT4 1700 V _{CES} V _{AC} = 690 V _{RMS} / V _{DC} = 1100V									
P _{max} [kW]	I _{RMS} ¹⁾ [A]	f _{SW} [kHz]	cos(φ)	f _{SWmax} ²⁾ [kHz]	Stack type	Implemented IGBT4 Modules	Topology	Case Cooling	Width x depth x height [mm]
893	880	2.0	0.85	5.0	6MS16017P43W37047	6x FF800R17KP4_B2	B6I	MS3 liquid	1090 x 496 x 273
893	880	2.0	0.85	5.0	6MS16017P43W37962	6x FF800R17KP4_B2	B6I	MS3 liquid	1090 x 496 x 273

¹⁾ typical output current at V_{DC}=1100V, V_{AC}=690V, 2...3.5kHz (see table), f₀=50Hz, cos(φ)=0.85...1 (see table), T_A=40°C, T_{vjmax}≤125°C

²⁾ Current derating may be required

ModSTACK™ HD

			
	ModSTACK™ HD1	ModSTACK™ HD3	
Maximum dimensions Width x Depth x Height [mm]	338 x 590 x 375	1090 x 596 x 366	
Cooling	liquid	liquid	
Topology	B6l	B6l	B6l + B6l
Max current ¹⁾ [I _{RMS}]	3 x 680	3 x 2050	Rect.: 3 x 680 Inv.: 3 x 1360
Maximum power ¹⁾ With cos(φ) = 0.85	813 kVA 691 kW	2438 kVA 2072 kW	Rect.: 813 kVA, 691 kW Inv.: 1626 kVA, 1382 kW

¹⁾ typical output current at $V_{DC}=1100V$, $V_{AC}=690V$, $f_{SW}=3\text{ kHz}$, $f_0=50\text{Hz}$, $\cos(\varphi)=0.85$, $T_A=40^\circ\text{C}$, $T_{vjmax}\leq 150^\circ\text{C}$.

IGBT4 1700 V _{CES}								
V _{AC} = 690V _{RMS} / V _{DC} = 1100V								
P _{max} ³⁾ [kW]	I _{RMS} ¹⁾ [A]	f _{SW} [kHz]	f _{SWmax} ²⁾ [kHz]	Stack type	Implemented IGBT4 Modules	Topology	Case Cooling	Width x depth x height [mm]
609	600	3	5	6MS10017E41W36460	9 x FF1000R17IE4	B6l	MS HD1 liquid (copper)	338 x 590 x 350
691	680	3	5	6MS10017E41W36775	3 x FF1000R17IE4	B6l	MS HD1 liquid (aluminium)	338 x 590 x 375
1219	1200	3	4	6MS20017E43W37032	6 x FF1000R17IE4	B6l	MS HD3 liquid (copper)	1090 x 596 x 342
1219	1200	3	4	6MS20017E43W38170 ⁴⁾	6 x FF1000R17IE4	B6l	MS HD3 liquid (copper)	1090 x 596 x 342
1828	1800	3	3	6MS30017E43W35613	9 x FF1000R17IE4	B6l	MS HD3 liquid (copper)	1090 x 596 x 342
1828	1800	3	4	6MS30017E43W38169 ⁴⁾	9 x FF1000R17IE4	B6l	MS HD3 liquid (copper)	1090 x 596 x 342
1828	1800	3	3	6MS30017E43W33015	9 x FF1000R17IE4	B6l	MS HD3 liquid (aluminium)	1090 x 596 x 342
2082	2050	3	3	6MS30017E43W34404	9 x FF1000R17IE4	B6l	MS HD3 liquid (aluminium)	1090 x 596 x 366
691	680	3	8	12MS20017E43W35155	3 x FF1000R17IE4	B6l + B6l	MS HD3 liquid (aluminium)	1090 x 596 x 342
1382	1360	3	4		6 x FF1000R17IE4			

¹⁾ typical output current at $V_{DC}=1100V$, $V_{AC}=690V$, $f_{SW}=3\text{ kHz}$, $f_0=50\text{Hz}$, $\cos(\varphi)=0.85$, $T_A=40^\circ\text{C}$, $T_{vjmax}\leq 150^\circ\text{C}$.

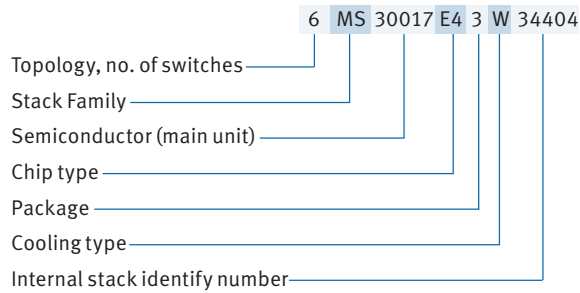
²⁾ Current derating may be required

³⁾ P_{max} for 3-phase system likewise B6l types

⁴⁾ Optical interface included

Type designation and topologies for IGBT Stacks

Type Designation for IGBT Stacks



Topology, no. of Switches

- 2 1/2 B2I
- 4 B2I
- 6 B6I
- 12 2B6I or B6I+B6I

Stack family

- MS ModSTACK
- PS PrimeSTACK

Semiconductor (main unit)

- 060 Rated Chip Current at T_{Cmax} divided by 10
- 12 V_{CES} maximum Collector-Voltage divided by 100

Chip type

- E3 KE3
- E4 KE4 or IE4
- S4 KS4
- F6 KF6C

Package

- 2 MS2 or C2 for PS
- 3 MS3 or C3 for PS
- 4 C4 for PS
- C 2xC4 for PS
- D 3xC2 for PS
- E 3xC3 for PS
- F 3xC4 for PS

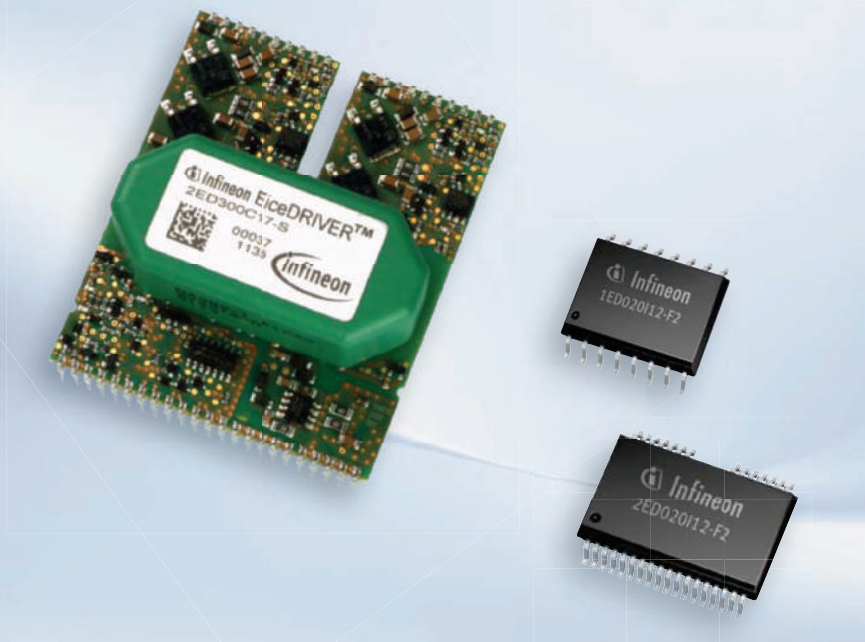
Cooling type

- G Air cooled by cabinet fan
- F Air cooled with fan included
- W Water cooled

Topology	Acronym
	1/2B2IHA
	1/2B2IHK
	1/2B2I
	B2IH
	B2I

Topology	Acronym
	B6I
	1/2B2I+B6I
	1/2B2IHK+B6I
	B6I+B2I
	B6I+B6I

EiceDRIVER™



EiceDRIVER™ solutions from Infineon are the expert's choice. With its HV Gate Driver Boards and HV Gate Driver ICs Infineon provides a broad spectrum of solutions for reliable and efficient controls for Infineon's IGBT and MOSFET products.

The **HV Gate Driver ICs** families with Silicon-On-Insulator (SOI) or Coreless Transformer Technology (CLT) meet the requirements for high performance gate driver ICs in all power electronic applications. The combination of EiceDRIVER™ ICs with Infineon IGBTs and MOSFETs in discretes and modules enables customers to design and build highly reliable and efficient systems. The integrated safety and protection features like Desaturation detection, Two Level Turn Off and Undervoltage Lockout enable customers to strengthen their design.

HV Gate Driver Boards are suitable for all IGBT modules up to 1700V and can be operated with various IGBT module designs. With the help of additional carrier hardware, it can be adapted to be used on large six packs, duals and Infineon's high-power modules. Outstanding protection measures and integrated fault management provide safe operation, even if used within noise-intense industrial environments.

HV Gate Driver ICs

EiceDRIVER™ ICs

The EiceDRIVER™ **single channel** products 1ED020I12-F2 and 1ED020I12-B2 start with features like desaturation detection (DESAT), active Miller Clamp, undervoltage lockout (UVLO) and shut down in functional or basic isolation. Both devices 1ED020I12-FT and 1ED020I12-BT also support two-level-turn-off (TLTO) for safe overcurrent shut down. In 2ED020I12-F2, two independent channels are implemented in a compact package providing same functions as 1ED020I12-F2.

2ED020I12-FI and 2ED020I06-FI are Infineon's cost efficient **half bridge** driver ICs with shut down and interlocking feature. The 1200V 2ED020I12-FI also implements an operational amplifier (OpAmp) and a comparator (Comp) for current measurement or overvoltage detection circuits.

Infineon's **three phase** driver IC family now includes six new variants for low power drive applications. 6ED003L06-F2 and 6ED003L02-F2 in 600V and 200V provide basic functions like undervoltage lockout for IGBT levels, overcurrent shut down (ITRIP), interlocking and enable (EN). 6EDL04I06NT and 6EDL04I06PT supplement this functionality with a high speed bootstrap circuit for each high-side driver stage. To complete the family, 6EDL04N06PT and 6EDL04N02PR are optimized for MOSFET operation.

Coreless Transformer (CLT) **Technology** allows the integration of a pulse transformer into an IC, combining the advantages of HVIC technology with the capability of a magnetic coupler. This results in an extremely rugged IC with high insulation capability. CLT allows faster switching speeds with no performance degradation compared to optocouplers, therefore providing constant reliability over the projected lifetime.

Thin-Film Silicon On Insulator (SOI) technology is an advanced technique for MOS/CMOS fabrications. It differs from the conventional bulk process by placing the active transistor layer on the top of an insulator. This leads to outstanding robustness against latch-up when exposed to extreme temperature and voltage conditions.

Infineon's EiceDRIVER™ high voltage Driver IC family covers a wide power range and enables customers to build reliable and efficient drive applications.

HV Gate Driver ICs

EiceDRIVER™ ICs

1ED020I12-B2 EiceDRIVER™ E

Single Channel isolated gate driver

- Basic isolation according to EN60747-5-2, recognized under UL1577
- Fully functional at transient +/- 1420V and static voltages of +/- 1200V
- High voltage side status feedback
- 2A sink and source rail-to-rail output
- Max. Tj = 150 °C
- Package SO16 300 mil
- Protection functions:
 - Enhanced desaturation detection
 - Active Miller clamp
 - Under voltage lockout
 - Shut down
 - Watchdog timer

1ED020I12-F2 EiceDRIVER™ E

Single Channel isolated gate driver

- Same functions and features as 1ED020I12-B2
- Functional Isolation of 1200V

1ED020I12-BT EiceDRIVER™ E

Single channel isolated gate driver

- Same functions and features as 1ED020I12-F2
- Basic isolation according to EN60747-5-2, recognized under UL1577
- Adjustable two level turn-off function
- Desaturation detection with 500 μ A

1ED020I12-FT EiceDRIVER™ E

Single channel isolated gate driver

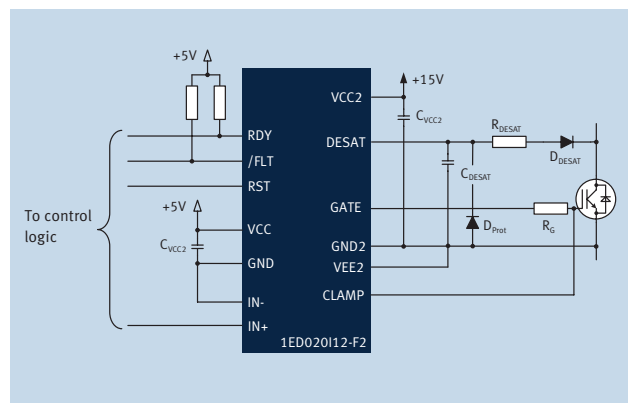
- Same functions and features as 1ED020I12-BT
- Functional isolation of 1200V

2ED020I12-F2 EiceDRIVER™ E

Dual channel isolated gate driver

- Same functions and features as two times 1ED020I12-F2
- Package SO36 300mil

Typical application 1ED020I12-F2



HV Gate Driver ICs

EiceDRIVER™ ICs

2ED020I12-FI

1200V Isolated high side half bridge gate driver

- Galvanic isolation of high side driver
- 2A sink current, 1 A source current
- Fully functional at transient and static voltages of +/- 1200V
- Integrated operational amplifier and comparator
- Matched delay times of high side and low side
- Max. T_j = 150 °C
- Package SO18 300 mil
- Protection function:
 - Hardware input interlocking
 - Under voltage lockout
 - Shut down function

2ED020I06-FI

650V isolated high side half bridge gate driver

- Galvanic isolation of high side driver
- 2A sink current, 1 A source current
- Fully functional at transient and static voltages of +/-650V
- Matched delay times of high side and low side
- Max. T_j = 150 °C
- Package SO18 300 mil
- Protection function:
 - Hardware input interlocking
 - Under voltage lockout

HV Gate Driver ICs Product Type

Products	Packages	Topology	I _{o+/-}	Turn On Propagation Delay (max)	T _j (max)	Safety Isolation Typ*	
1200V	1ED020I12-F2	PG-DSO-16	Single	2.0 - 2.0 A	195.0 ns	150.0 degC	-
	1ED020I12-B2	PG-DSO-16	Single	2.0 - 2.0 A	195.0 ns	150.0 degC	Basic
	1ED020I12-FT	PG-DSO-16	Single	2.0 - 2.0 A	2,000.0 ns	150.0 degC	-
	1ED020I12-BT	PG-DSO-16	Single	2.0 - 2.0 A	2,000.0 ns	150.0 degC	Basic
	2ED020I12-F2	PG-DSO-36	Dual	2.0 - 2.0 A	195.0 ns	150.0 degC	-
	2ED020I12-FI	PG-DSO-18	Half Bridge	1.0 - 2.0 A	105.0 ns	150.0 degC	-
650V	2ED020I06-FI	PG-DSO-18	Half Bridge	1.0 - 2.0 A	105.0 ns	150.0 degC	-
600V	2EDL05I06PF	PG-DSO-8	Half Bridge	0.25 - 0.5 A	600.0 ns	125.0 degC	-
	2EDL05I06BF	PG-DSO-8	Half Bridge	0.25 - 0.5 A	600.0 ns	125.0 degC	-
	2EDL05N06PF	PG-DSO-8	Half Bridge	0.25 - 0.5 A	450.0 ns	125.0 degC	-
	2EDL05I06PJ	PG-DSO-14	Half Bridge	0.25 - 0.5 A	600.0 ns	125.0 degC	-
	2EDL23I06PJ	PG-DSO-14	Half Bridge	1.5 - 2.3 A	600.0 ns	125.0 degC	-
	2EDL23N06PJ	PG-DSO-14	Half Bridge	1.5 - 2.3 A	450.0 ns	125.0 degC	-
	6ED003L06-F2	PG-DSO-28	3-Phase	180 - 380 mA	800.0 ns	125.0 degC	-
	6EDL04I06NT	PG-DSO-28	3-Phase	180 - 380 mA	800.0 ns	125.0 degC	-
	6EDL04I06PT	PG-DSO-28	3-Phase	180 - 380 mA	800.0 ns	125.0 degC	-
	6EDL04N06PT	PG-DSO-28	3-Phase	180 - 380 mA	800.0 ns	125.0 degC	-
200V	6ED003L02-F2	PG-TSSOP-28	3-Phase	180 - 380 mA	800.0 ns	125.0 degC	-
	6EDL04N02PR	PG-TSSOP-28	3-Phase	180 - 380 mA	800.0 ns	125.0 degC	-

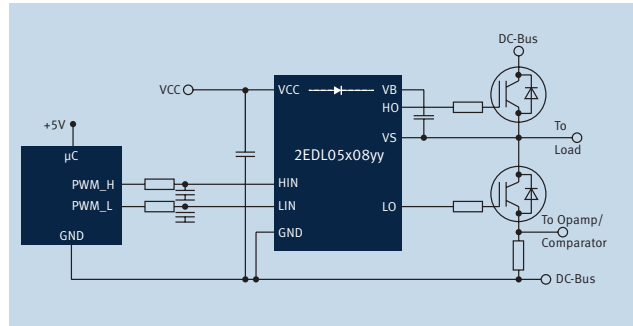
* Certified according to DIN EN 60747-5-2

2EDL Compact Family



- Ultra fast integrated bootstrap diode
- SO8 and SO14 package
- Enable function (2EDL23x only)
- Fault indication (2EDL23x only)
- Protection function:
 - Asymmetric undervoltage lockout
 - Active shut down
 - Undervoltage lockout levels for MOSFET and IGBT
 - Over current protection (2EDL23x only)
 - Interlock optional
 - Fixed HW dead time optional

Typical application 2EDL05x06yy



	UVLO_ON_max	Fault Reporting	Shutdown / Enable	Input Logic Type	Interlock	Two Level Turn Off	Package Outline/Page
	12.6 V	DESAT	/RST	pos/neg	-	no	PG-DSO-16-15/5.23
	12.6 V	DESAT	/RST	pos/neg	-	no	PG-DSO-16-15/5.23
	12.6 V	DESAT	/RST	pos/neg	-	yes	PG-DSO-16-15/5.23
	12.6 V	DESAT	/RST	pos/neg	-	yes	PG-DSO-16-15/5.23
	12.6 V	DESAT	/RST	pos/neg	no	no	PG-DSO-36-58/5.23
	13.5 V	OCP	/SD	pos	yes	no	PG-DSO-18-2/5.23
	13.5 V	-	/SD	pos	yes	no	PG-DSO-18-2/5.23
	12.4 V	-	EN	pos	yes	no	PG-DSO-8/5.24
	12.4 V	-	EN	pos	-	no	PG-DSO-8/5.24
	12.4 V	-	EN	pos	yes	no	PG-DSO-8/5.24
	12.4 V	-	EN	pos	yes	no	PG-DSO-14/5.24
	12.4 V	OCP	EN	pos	yes	no	PG-DSO-14/5.24
	12.4 V	OCP	EN	pos	yes	no	PG-DSO-14/5.24
	12.5 V	ITRIP	EN	neg	yes	no	PG-DSO-28-17/5.24
	12.5 V	ITRIP	EN	neg	yes	no	PG-DSO-28-17/5.24
	12.5 V	ITRIP	EN	pos	yes	no	PG-DSO-28-17/5.24
	9.8 V	ITRIP	EN	pos	yes	no	PG-DSO-28-17/5.24
	12.5 V	ITRIP	EN	neg	yes	no	PG-TSSOP-28-1/5.24
	9.8 V	ITRIP	EN	pos	yes	no	PG-TSSOP-28-1/5.24

HV Gate Driver ICs

EiceDRIVER™ ICs

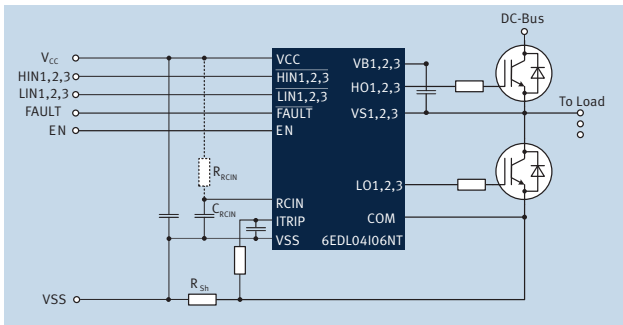
6ED family – 2nd generation EiceDRIVER™ C

200V and 600V 3-phase gate driver

- Ultra fast integrated bootstrap diode
- Fully functional at neg. transient voltages down to -50V (500 ns)
- Programmable restart after over current protection
- Shut down of all outputs in case of UVLO, OCP
- Package SO28 300 mil (600V) and package TSSOP28 (200V)
- Protection functions:
 - Over current protection (OCP)
 - Hard ware input interlocking
 - Under voltage lockout (UVLO)
 - Fixed hard ware dead time of high side and low side
 - Enable function
 - Pin compatible variants of first generation available

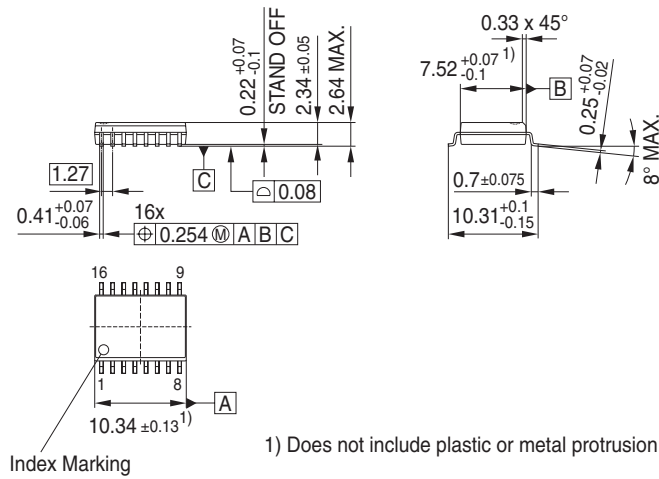
Typical application 6EDL04I06NT

Systems and Drivers



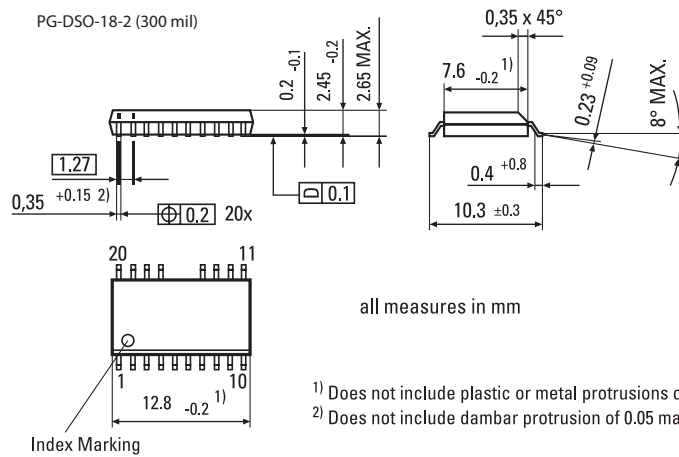
Package Outlines

PG-DSO-16-15



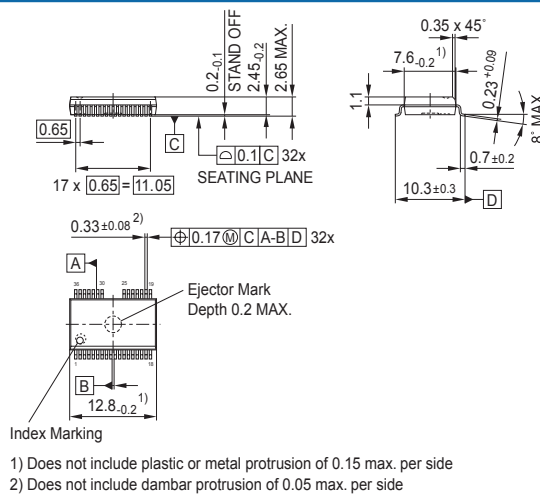
PG-DSO-16-4, -15-PO V06

PG-DSO-18-2



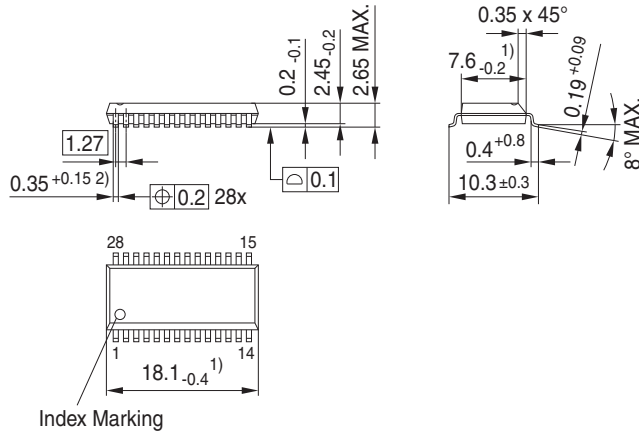
Systems and Drivers

PG-DSO-36-58



Package Outlines

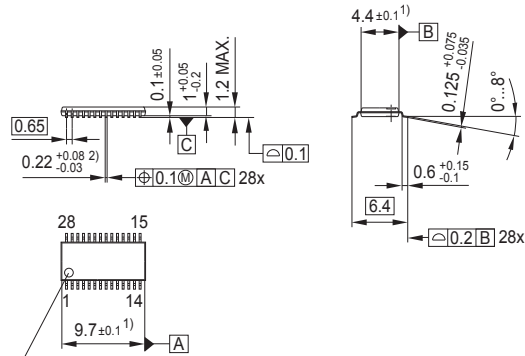
PG-DSO-28-17



Index Marking

- 1) Does not include plastic or metal protrusion of 0.15 max. per side
- 2) Does not include dambar protrusion of 0.05 max. per side

PG-TSSOP-28-1

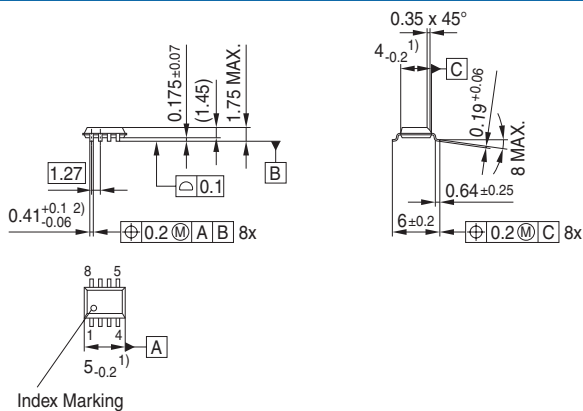


Index Marking

- 1) Does not include plastic or metal protrusion of 0.15 max. per side
- 2) Does not include dambar protrusion

GPS05867

DSO-8

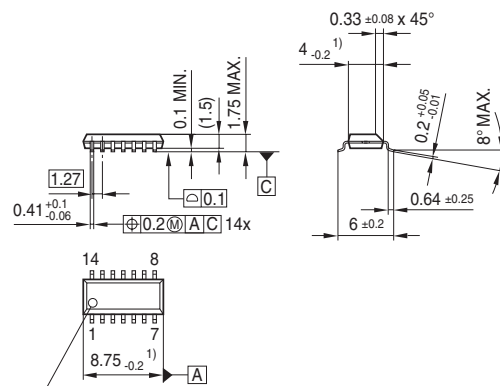


Index Marking

- 1) Does not include plastic or metal protrusion of 0.15 max. per side
- 2) Lead width can be 0.61 max. in dambar area

GPS01181

DSO-14




Index Marking

- 1) Does not include plastic or metal protrusion of 0.15 max. per side

HV Gate Driver Boards

EiceDriver™ Boards

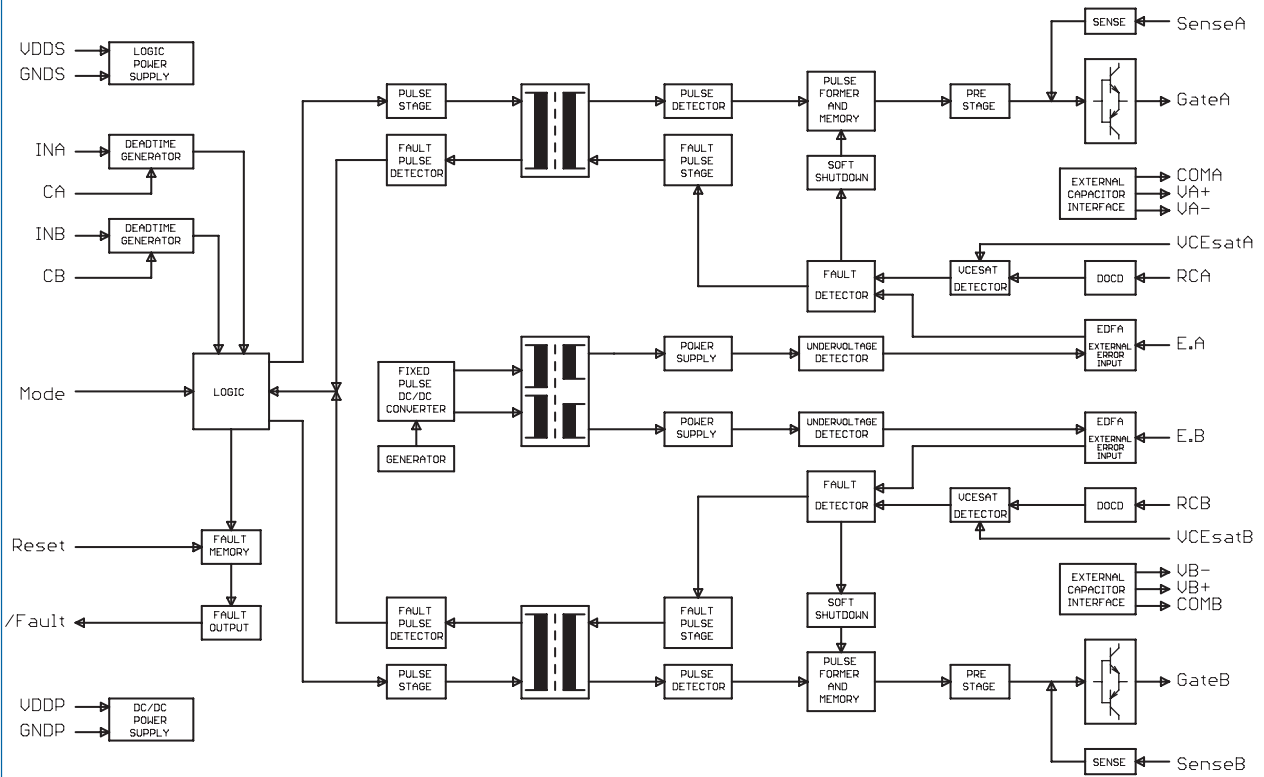
	Type	Channels	Control Interface	IGBT max V_{CE} V	V_{ISO} kV	I_{GM} A	P_{OUT} W	T_{OP} °C	size mm x mm	mounting by	for modules	Outline/ page
	2ED300C17-S	2	15V CMOS logic	1700	5	±30	8	-25/85	60,5 x 72	solde-ring	EconoPACK™+, 62 mm, IHM, EconoDUAL™, PrimePACK™	5.26
	2ED300C17-ST	2	15V CMOS logic	1700	5	±30	8	-40/85	60,5 x 72	solde-ring	EconoPACK™+, 62 mm, IHM, EconoDUAL™, PrimePACK™	5.26

Datasheets available under www.infineon.com/eicedriver-boards

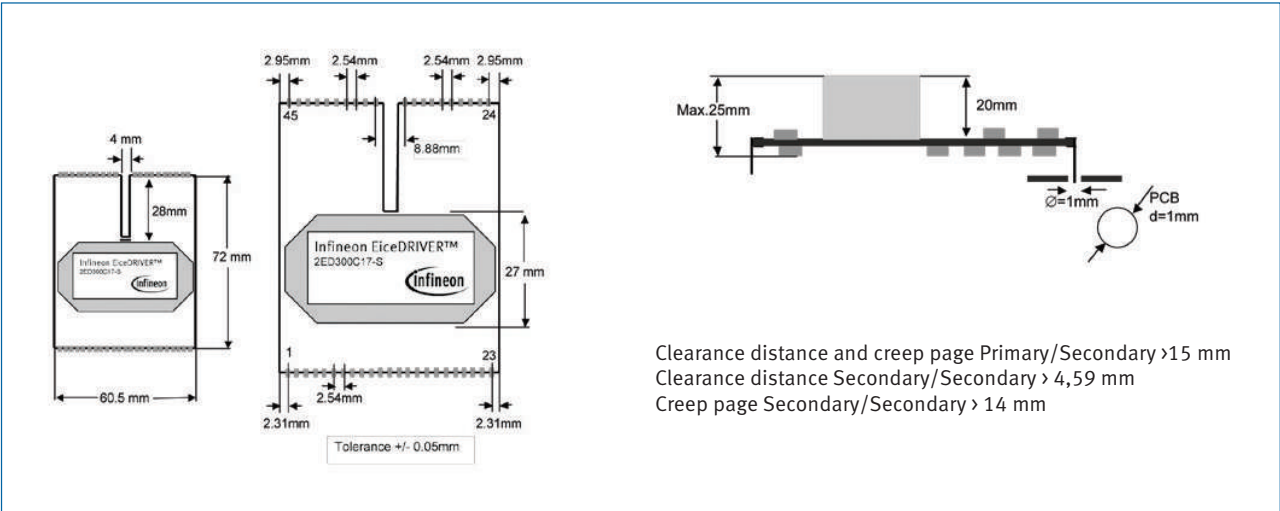
Technical features 2ED300C17-S / 2ED300C17-ST



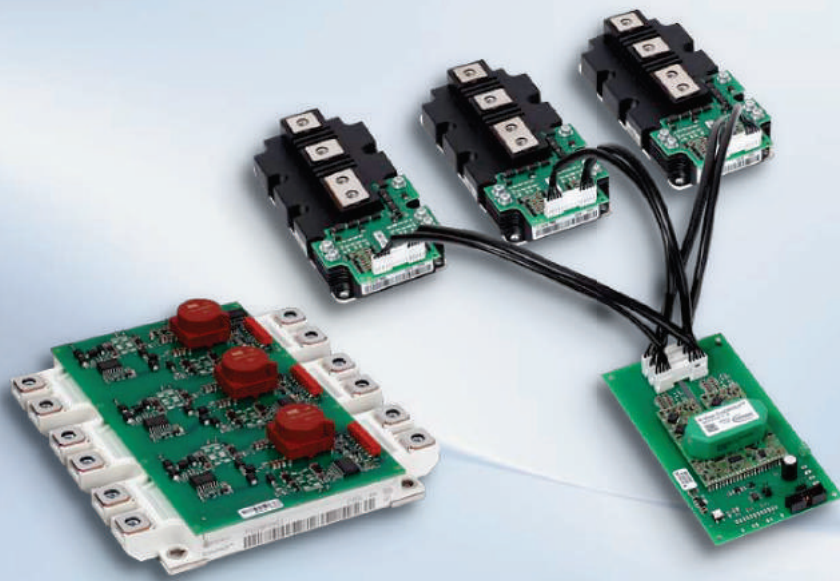
- Half-bridge or direct mode can be chosen
- Symmetric ±15 V output gate drive voltage
- 15V CMOS level signal processing
- Low-resistance and therefore noise immune 15V PWM signal input
- Minimum pulse suppression 400ns
- Interlocking and dead time generation in half-bridge mode included
- Dynamic over-current detection by monitoring the saturation voltage
- Soft shutdown in case of failure shutdown
- Failure output
- Reset input and PWM reset
- External detected failure analysis
- Additional ±16V supply outputs
- 2ED300C17-S: temperature range -25°C/85°C
- 2ED300C17-ST: temperature range -40°C/85°C



Systems and Drivers



Evaluation and Adapter Boards



Infineon's evaluation boards have been designed in several configurations to drive IGBT modules. These boards are using specially designed transformers for driving power modules as well as coreless driver ICs like the 1ED0201 12-F from Infineon.

Module selection chart for Evaluation Boards and driver circuitry

Driver Families / Product Families	EiceDRIVER™ 2ED300C17-S	1ED (CLT chip)	2ED (CLT chip)	Other
IHM	2ED300E17-SFO MA401E17 MA401E12 MA400E17 MA400E12			
PrimePACK™	2ED300E17-SFO MA300E12 MA300E17	2ED250E12-F		
EconoPACK™+		6ED100E12-F2		
EconoDUAL™ 3	MA200E17 MA200E12	2ED100E12-F2		
62mm Modules	MA070E12 MA070E17			
EconoPACK™ 4 3-level		F3L020E07-F-P MA3L080E07 F3L2020E07-F-P MA3L120E07 F3L2020E12-F-P MA3L120E12		
SmartPIM 1			7ED020E12-FI-U1	
EasyPACK 2B 3-level		F3L030E07-F-W2		
EasyPIM™ 2B			7ED020E12-FI-W2	
MIPAQ™				MA3AE12 MA040E12

Evaluation Boards

	Name of Evaluation Board	Supported Products	Description
	7ED020E12-FI-W2	EasyPIM™ 2B 2ED020I12-FI	<ul style="list-style-type: none"> ■ Evaluation Driver Board for EasyPIM™ ■ Designed for Easy PressFIT ■ Designed with 2ED020I12-FI
	F3L030E07-F-W2	EasyPACK 2B 3-level	<ul style="list-style-type: none"> ■ Evaluation Board for EasyPACK 2B 3-level NPC1-Topology ■ Designed with 1ED020I12-F
	7ED020E12_FI_U1	SmartPIM 1	<ul style="list-style-type: none"> ■ Evaluation Board for SmartPIM 1 ■ Designed with 2ED020I12-FI
	MA3AE12	MIPAQ™ base	<ul style="list-style-type: none"> ■ Isolating amplifier for current measurement with MIPAQ™ base
	MA040E12	MIPAQ™ serve	<ul style="list-style-type: none"> ■ Isolated gate driver power supply and logic interface for MIPAQ™ serve
	F3L020E07-F-P	EconoPACK™ 4 3-Level	<ul style="list-style-type: none"> ■ Evaluation Driver Board for EconoPACK™ 4 3-Level modules in NPC1-Topology (650V) ■ Designed with 1ED020I12-F
	F3L2020E07-F-P	EconoPACK™ 4 3-Level	<ul style="list-style-type: none"> ■ Evaluation Driver Board for EconoPACK™ 4 3-Level modules in NPC2-Topology (650V) ■ Designed with 1ED020I12-F
	F3L2020E12-F-P	EconoPACK™ 4 3-Level	<ul style="list-style-type: none"> ■ Evaluation Driver Board for EconoPACK™ 4 3-Level modules in NPC-2-topology (1200V) ■ Designed with 1ED020I12-F
	2ED100E12-F2	EconoDUAL™ 3 EiceDRIVER™ 1ED020I12-F	<ul style="list-style-type: none"> ■ Evaluation Driver Board for EconoDUAL™ 3 modules ■ Designed with 1ED020I12-F ■ Suitable for 600V & 1200V
	6ED100E12-F2	EconoPACK™ + EiceDRIVER™ 1ED020I12-F	<ul style="list-style-type: none"> ■ Evaluation Driver Boards for EconoPACK™+ modules ■ Designed with 1ED020I12-F ■ Suitable for 600V & 1200V
	2ED250E12-F	PrimePACK™ 1200V EiceDRIVER™	<ul style="list-style-type: none"> ■ Evaluation Driver Board for 1200V PrimePACK™ modules
	MA300E12	PrimePACK™ Adapter Board	<ul style="list-style-type: none"> ■ PrimePACK™ - Adapter Board for 1200V modules
	MA300E17	PrimePACK™ Adapter Board	<ul style="list-style-type: none"> ■ PrimePACK™ - Adapter Board for 1700V modules

Power portion not included.

Evaluation Boards

	Name of Evaluation Board	Supported Products	Description
	MA3L080E07	EconoPACK™ 4 3-Level	■ EconoPACK™ 4 3-Level Adapter Board for 650V modules in NPC1-Topology
	MA3L120E07	EconoPACK™ 4 3-Level	■ EconoPACK™ 4 3-Level Adapter Board for 650V modules in NPC2-Topology
	MA3L120E12	EconoPACK™ 4 3-Level	■ EconoPACK™ 4 3-Level Adapter Board for 1200V modules in NPC2-topology
	MA070E12	62mm Modules	■ Adapter Board for 62mm Modules (1200V)
	MA070E17	62mm Modules	■ Adapter Board for 62mm Modules (1700V)
	MA200E12	EconoDUAL™ 3	■ EconoDUAL™ 3 Adapter Board for 1200V modules
	MA200E17	EconoDUAL™ 3	■ EconoDUAL™ 3 Adapter Board for 1700V modules
	MA400E12	IHM 130 mm x 140 mm	■ IH4 Adapter Board for 1200V modules
	MA400E17	IHM 130 mm x 140 mm	■ IH4 Adapter Board for 1700V modules
	MA401E12	IHM 140 mm x 190 mm	■ IH7 Adapter Board for 1200V modules
	MA401E17	IHM 140 mm x 190 mm	■ IH7 Adapter Board for 1700V modules
	2ED300E17-SFO	EiceDRIVER™ 2ED300C17-S / -ST	■ Evaluation Board for EiceDRIVER™ 2ED300C17-S / -ST

Power portion not included.

Links

Application Notes, Product Briefs, Flyers and Brochures	Type	Redirects
MIPAQ™ serve	Application Note	http://www.infineon.com/mipaq-serve-appnote
MIPAQ™ base	Application Note	http://www.infineon.com/mipaq-base-appnote
MIPAQ™ sense	Application Note	http://www.infineon.com/mipaq-sense-appnote
Technical Description 1ED Family	Application Note	http://www.infineon.com/tech-descript-1ED-family
Technical Description 6ED Family	Application Note	http://www.infineon.com/tech-descript-6ED-family
MIPAQ™ – More Than You Expect!	Brochure	http://www.infineon.com/mipaq-brochure
ModSTACK™ HD	Product Brief	http://www.infineon.com/modstack-hd-product-brief
Evaluation Boards	Product Information	http://www.infineon.com/evaluation-boards-product-information
STACKs - We are the experts for power solutions	Product Information	http://www.infineon.com/stacks-product-information
EiceDRIVER™ Overview	Webpage	http://www.infineon.com/eicedriver
EiceDRIVER™ Boards	Webpage	www.infineon.com/eicedriver-boards
Evaluation & Driver Boards - Productpage	Webpage	http://www.infineon.com/evaluation-boards
MIPAQ™	Webpage	http://www.infineon.com/mipaq
Products Driver IC	Webpage	http://www.infineon.com/gatedriver
STACKs - Productpage	Webpage	http://www.infineon.com/stacks


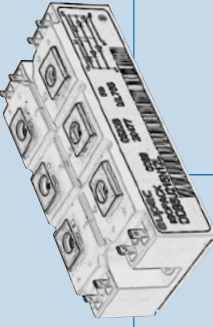
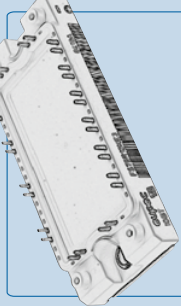
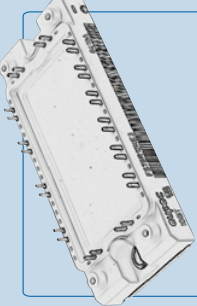
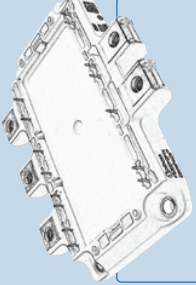
Bridge Rectifier & AC-Switches



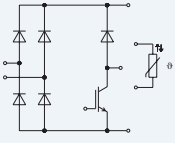
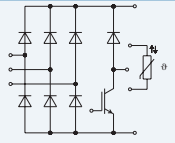
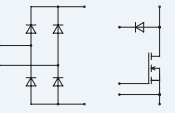
We offer bridge rectifier modules in solder pin design like EasyBRIDGE or eupec™ EconoBRIDGE™ modules. The available configurations are fully- and half controlled rectifiers with brake IGBT and optional NTC resistor. They cover the current range from 25 A up to 180 A at 800V, 1600V and 1800V.

The IsoPACK™ family with screwable load terminals are fully-, half- and uncontrolled rectifier modules. The three phase AC Switches complete the IsoPACK™ product family. The current range covers 85 A up to 205 A at 1600 V.

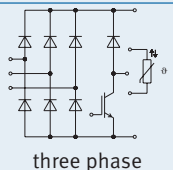
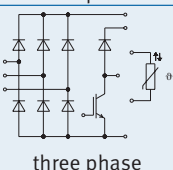
Overview Bridge Rectifier, AC-Switches

2000					
1800					
1600	 <p>EasyBRIDGE</p>	 <p>eupec™ IsoPACK™ Bridge</p>	 <p>eupec™ IsoPACK™ AC-Switch</p>	 <p>eupec™ EconoBRIDGE™ 2</p>	 <p>eupec™ EconoBRIDGE™ 4</p>
	$I_d = 25 - 75A$	$I_d = 85 - 205A$	$I_{RMS} = 85 - 145A$	$I_d = 84 - 180A$	$I_d = 240 - 360 A$
	Configuration B2U B6U	Configuration B6 U/HK/C	Configuration W3C	Configuration B6U B6HK	Configuration B6HK
V_{RRM}					

EasyBRIDGE

800 V _{CEs}										
Type	V _{RRM} V	I _d A	Diode			Brake Chopper			Outline/ page	
			R _{thJC} K/W max.	V _{t0} V T _{vj} = 150°C	r _t mΩ	V _{CE} V	I _C * A T _C = 80°C	R _{thJC} K/W max.		
 <p>single phase</p>	DDB2U30N08VR	800	48	1,30	0,75	6,95	600	20	1,50	L_750d/6.7
 <p>three phase</p>	DDB6U30N08VR	800	30	1,80	0,85	8,30	600	20	1,50	L_750e/6.7
	DDB2U50N08W1R_B23	800	50	1,20			600	50	0,25	data on request

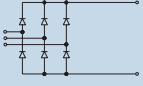

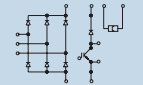
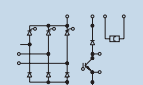
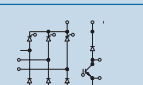
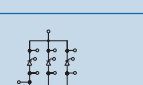
EasyBRIDGE

1600 V _{CEs}										
Type	IGBT Inverter					Brake Chopper			Outline/ page	
	V _{RRM} V	I _d A	R _{thjC} K/W max.	V _{t0} V T _{vj} = 150°C	r _t mΩ	V _{CE} V	I _C * A T _C = 80°C	R _{thjC} K/W max.		
 three phase	DDB6U25N16VR	1600	30	1,55	0,76	7,60	1200	15	1,45	L_750e/6.7
 three phase	DDB6U75N16W1R	1600	75	0,72			1200	50	0,45	L_1ba/6.7
	DDB6U75N16W1R_B11	1600	75	0,72			1200	50	0,45	L_1ba/6.7

* as specified in data sheet

..._B11 PressFIT Modules

eupec™ EconoBRIDGE™ Rectifier

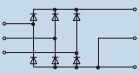
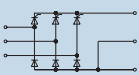
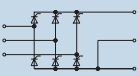
Type	V_{DRM}, V_{RRM} V $V_{DSM} = V_{DRM}$ $V_{RSM} =$ $V_{RRM} + 100V$	I_{FRMSM} (I_{TRMSM}) A	I_{FSM} (I_{TSM}) A 10 ms $T_{vj\ max}$	I_d/T_c A/°C	$V_{(TO)}$ V $T_{vj} =$ $T_{vj\ max}$	r_T mΩ $T_{vj} =$ $T_{vj\ max}$	R_{thJC} °C/W per arm 120° el Square wave	$T_{vj\ max}$ °C	V_{CES} V	I_C A	Outline/ page	
 3 phase bridge rectifier, uncontrolled	DDB6U100N16R	1600	60	550	100/100	0,75	5,5	1,15	150		M_EB2a/6.8	
	DDB6U144N16R	1600	100	1000	145/100	0,75	3,1	0,89	150		M_EB2a/6.8	
 3 phase bridge rectifier, uncontrolled with brake chopper	DDB6U84N16RR	1600	60	550	85/100	0,75	5,50	1,45	150	1200	50	M_EB2b/6.8
	DDB6U100N16RR	1600	60	550	100/100	0,75	5,50	1,15	150	1200	50	M_EB2b/6.8
 3 phase bridge rectifier, uncontrolled with brake chopper and NTC	DDB6U104N16RR	1600	60	550	105/100	0,75	5,50	1,08	150	1200	50	M_EB2c/6.8
	DDB6U104N18RR	1800	60	550	105/100	0,75	5,50	1,08	150	1200	50	M_EB2c/6.8
	DDB6U134N16RR	1600	80	550	134/100	0,75	6,30	0,70	150	1200	70	M_EB2c/6.8
 3 phase bridge rectifier, halfcontrolled with brake chopper and NTC	TDB6HK124N16RR	1600	70	550	125/85	0,75	6,30	0,63	125	1200	70	M_EB2d/6.8
 3 phase bridge rectifier, halfcontrolled with brake chopper	TDB6HK180N16RR	1600	150	1400	180/80	0,83	2,30	0,35	150	1200	100	M_EB2f/6.8
	TDB6HK180N16RR_B11	1600	150	1400	180/80	0,83	2,30	0,35	150	1200	100	M_EB2e/6.8
 3 phase bridge rectifier, half-controlled with NTC	◆ TDB6HK240N16P	1600	240	data on request							M_EB4a/6.9	
	◆ TDB6HK360N16P	1600	360	data on request							M_EB4a/6.9	

◆ New type
_B11 PressFIT Modules

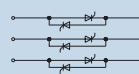
eupec™ EconoBRIDGE™ Rectifiers are UL recognized

SCR
Diode Modules

eupec™ IsoPACK™ Bridge Rectifier

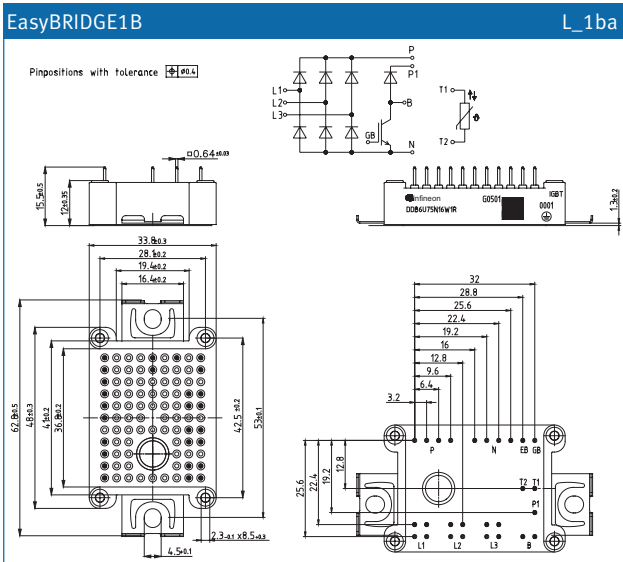
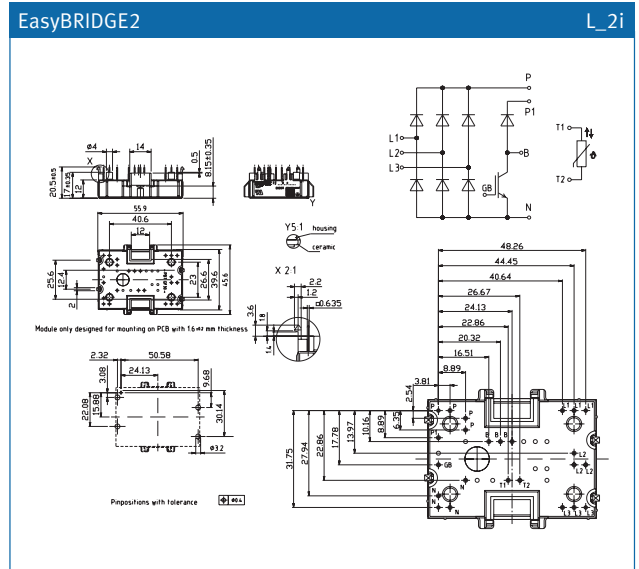
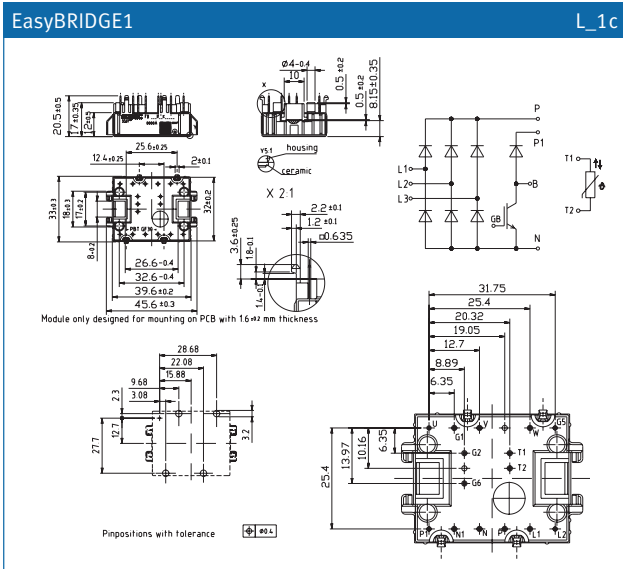
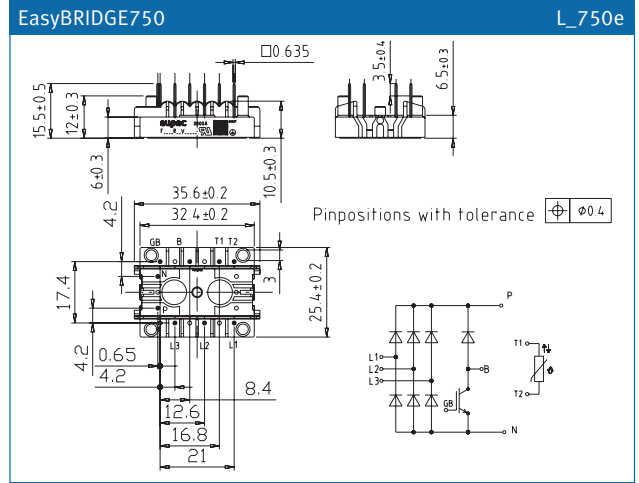
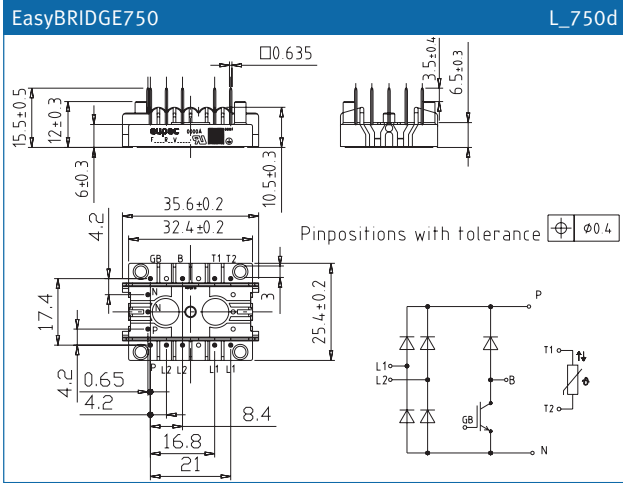
Type	V_{DRM}, V_{RRM} V $V_{DSM} = V_{DRM}$ $V_{RSM} =$ $V_{RRM} + 100V$	I_{FRMSM} (I_{TRMSM}) A	I_{FSM} (I_{TSM}) A 10 ms $T_{vj\ max}$	I_d/T_c A/°C	$V_{(TO)}$ V $T_{vj} =$ $T_{vj\ max}$	r_T mΩ $T_{vj} =$ $T_{vj\ max}$	R_{thJC} °C/W per arm 120° el Square wave	$T_{vj\ max}$ °C	Outline/ page	
 3 phase bridge rectifier, uncontrolled	DDB6U85N16L	1600	60	550	85/100	0,75	5,50	1,45	150	M_1Pa/6.9
	DDB6U145N16L	1600	100	1000	145/100	0,75	3,10	0,89	150	M_1Pa/6.9
	DDB6U205N16L	1600	120	1375	205/100	0,75	2,20	0,59	150	M_1Pa/6.9
	DDB6U215N16L	1600	125	1850	215/100	0,75	1,60	0,49	150	M_1Pa/6.9
 3 phase bridge rectifier, half controlled	TDB6HK95N16LOF	1600	75	620	95/85	0,95	5,50	0,82	125	M_1Pb/6.9
	TDB6HK135N16LOF	1600	100	870	135/85	0,95	4,30	0,59	125	M_1Pb/6.9
	TDB6HK165N16LOF	1600	120	1050	165/85	0,95	3,20	0,49	125	M_1Pb/6.9
 3 phase bridge rectifier, fully controlled	TTB6C95N16LOF	1600	75	620	95/85	0,95	5,50	0,82	125	M_1Pb/6.9
	TTB6C135N16LOF	1600	100	870	135/85	0,95	4,30	0,59	125	M_1Pb/6.9
	TTB6C165N16LOF	1600	120	1050	165/85	0,95	3,20	0,49	125	M_1Pb/6.9

eupec™ IsoPACK™ AC-Switches

Type	V_{DRM}, V_{RRM} V $V_{DSM} = V_{DRM}$ $V_{RSM} =$ $V_{RRM} + 100V$	I_{FRMSM} (I_{TRMSM}) A	I_{FSM} (I_{TSM}) A 10 ms $T_{vj\ max}$	I_d/T_c A/°C	$V_{(TO)}$ V $T_{vj} =$ $T_{vj\ max}$	r_T mΩ $T_{vj} =$ $T_{vj\ max}$	R_{thJC} °C/W per arm 120° el Square wave	$T_{vj\ max}$ °C	Outline/ page	
 3 phase AC-Switches, fully controlled	TTW3C85N16LOF	1600	75	620	85/85	0,95	5,50	0,70	125	M_1Pb/6.9
	TTW3C115N16LOF	1600	100	870	115/85	0,95	4,30	0,50	125	M_1Pb/6.9
	TTW3C145N16LOF	1600	120	1050	145/85	0,95	3,20	0,42	125	M_1Pb/6.9

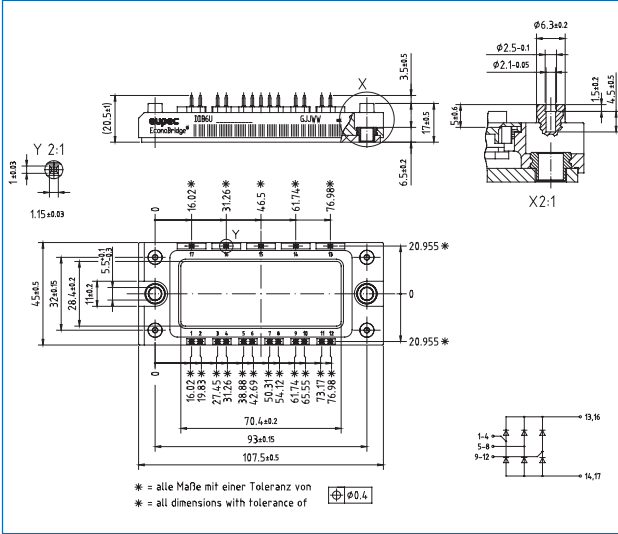
eupec™ IsoPACK™ modules are UL recognized

Outlines

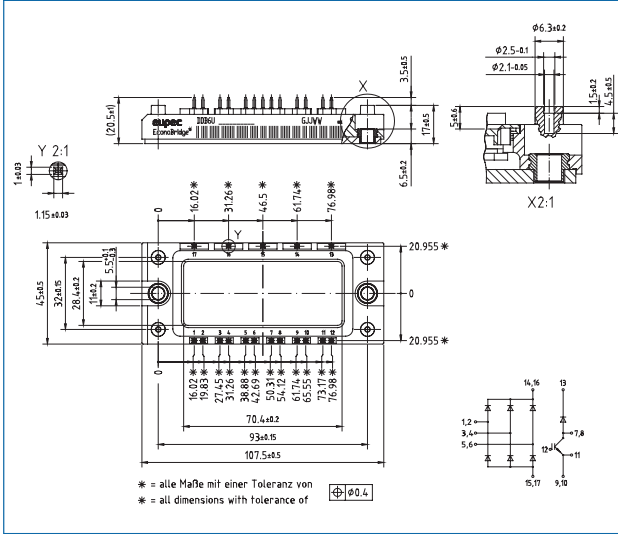


SCR Diode Modules

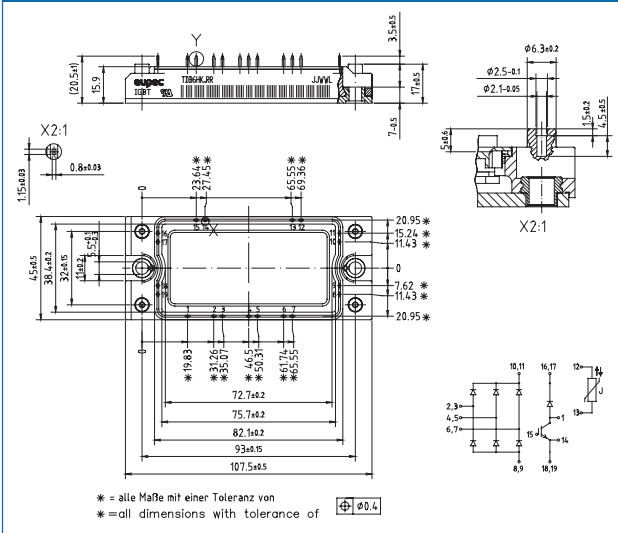
eupec™ EconoBRIDGET™ 2 Rectifier M_EB2a



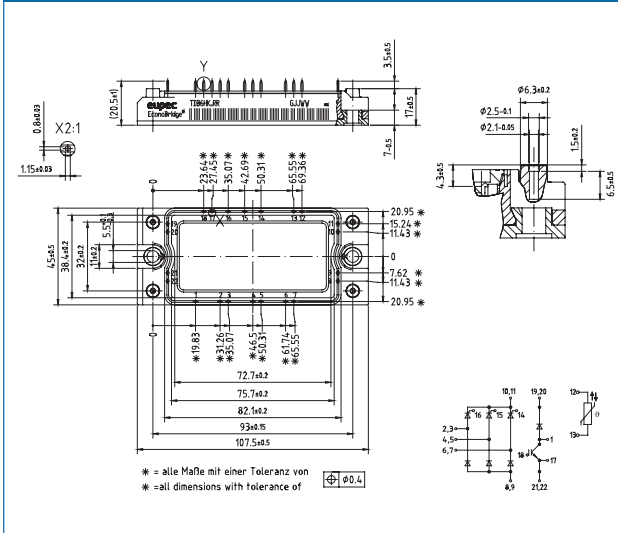
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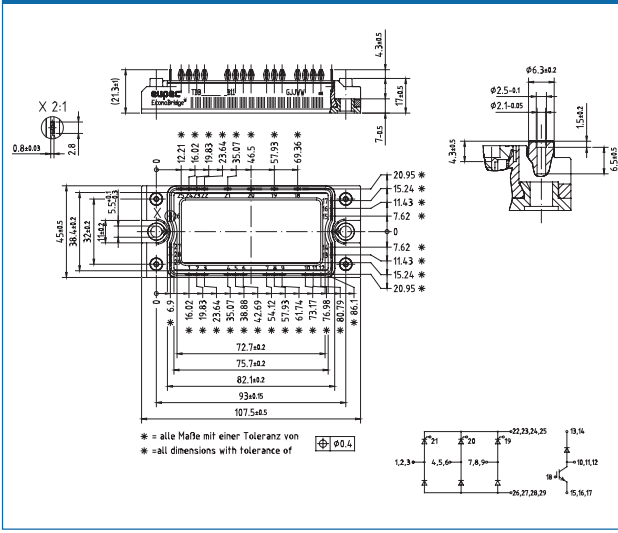
eupec™ EconoBRIDGET™ 2 Rectifier M_EB2c



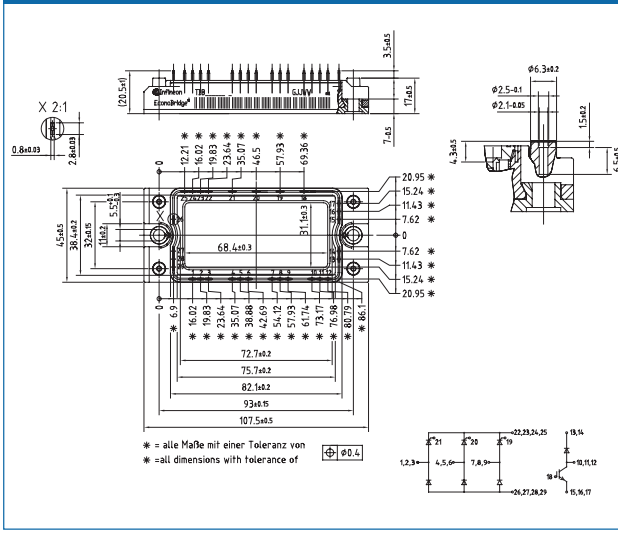
eupec™ EconoBRIDGET™ 2 Rectifier M_EB2d



eupec™ EconoBRIDGET™ 2 Rectifier M_EB2e

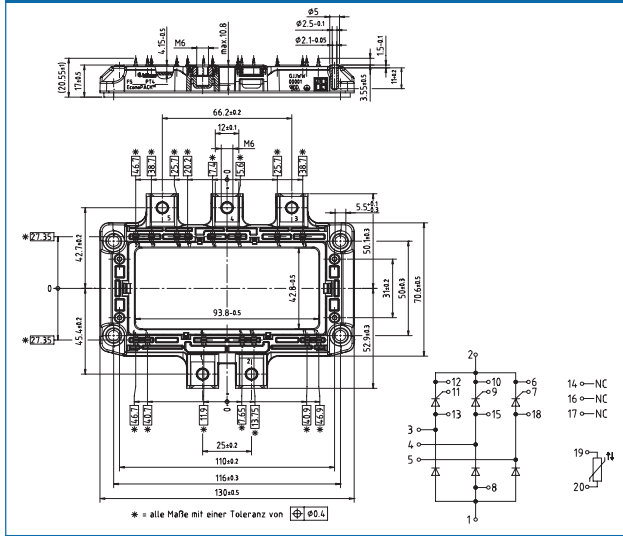


eupec™ EconoBRIDGET™ 2 Rectifier M_EB2f



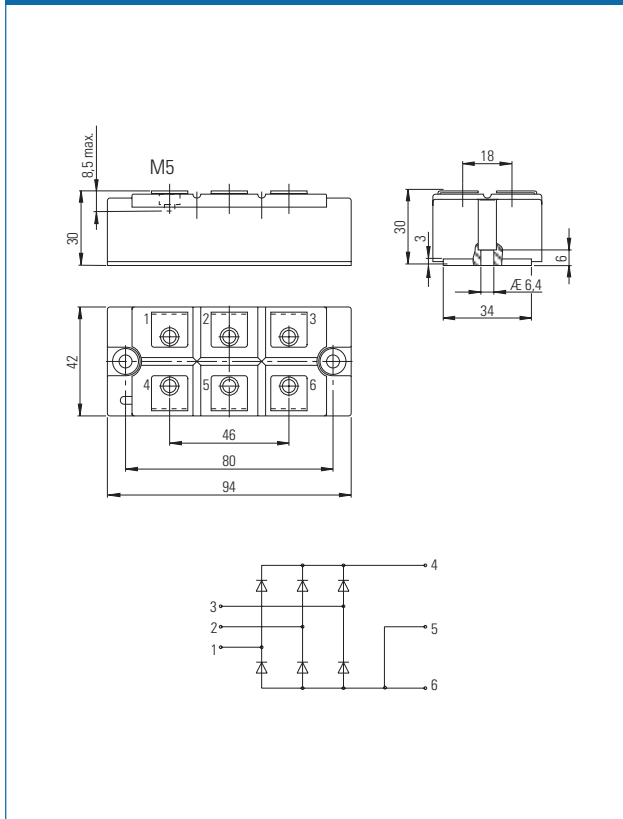
eupec™ EconoBRIDGE™ 4

M_EB4a



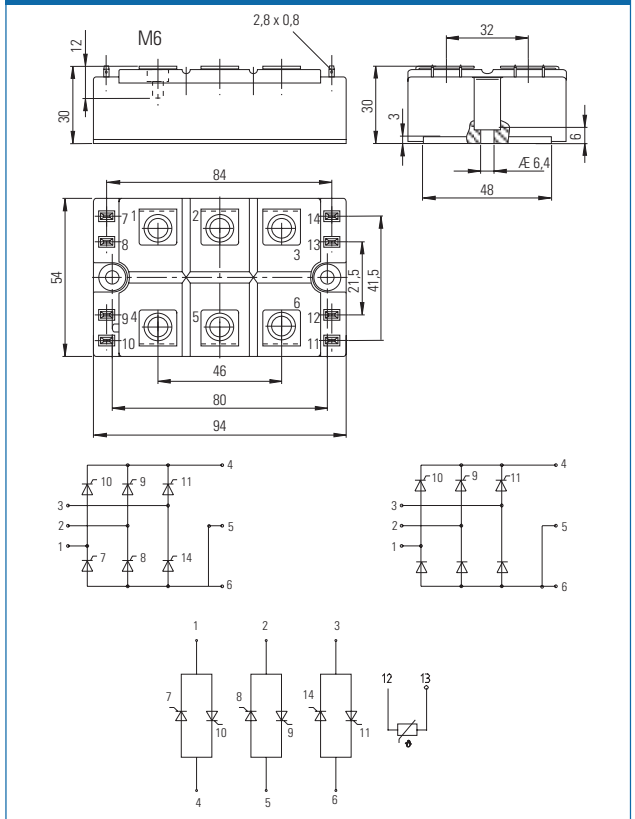
eupec™ IsoPACK™ 42

M_1Pa



eupec™ IsoPACK™ 54

M_1Pb



SCR Diode Modules

Package Units

Rectifier Modules	Housing Size (overall)	Packing Units
IsoPACK™	42 mm	4
	54 mm	3
eupec EconoBRIDGE™ 2	45 mm x 107 mm	10
eupec EconoBRIDGE™ 4	130,0 mm x 103,0 mm	6
EasyBRIDGE 750	25,4mm x 35,6 mm	40
EasyBRIDGE 1	33 mm x 45,6 mm	20
EasyBRIDGE 2	45,6 mm x 55,9 mm	20

Thyristor & Diode Modules



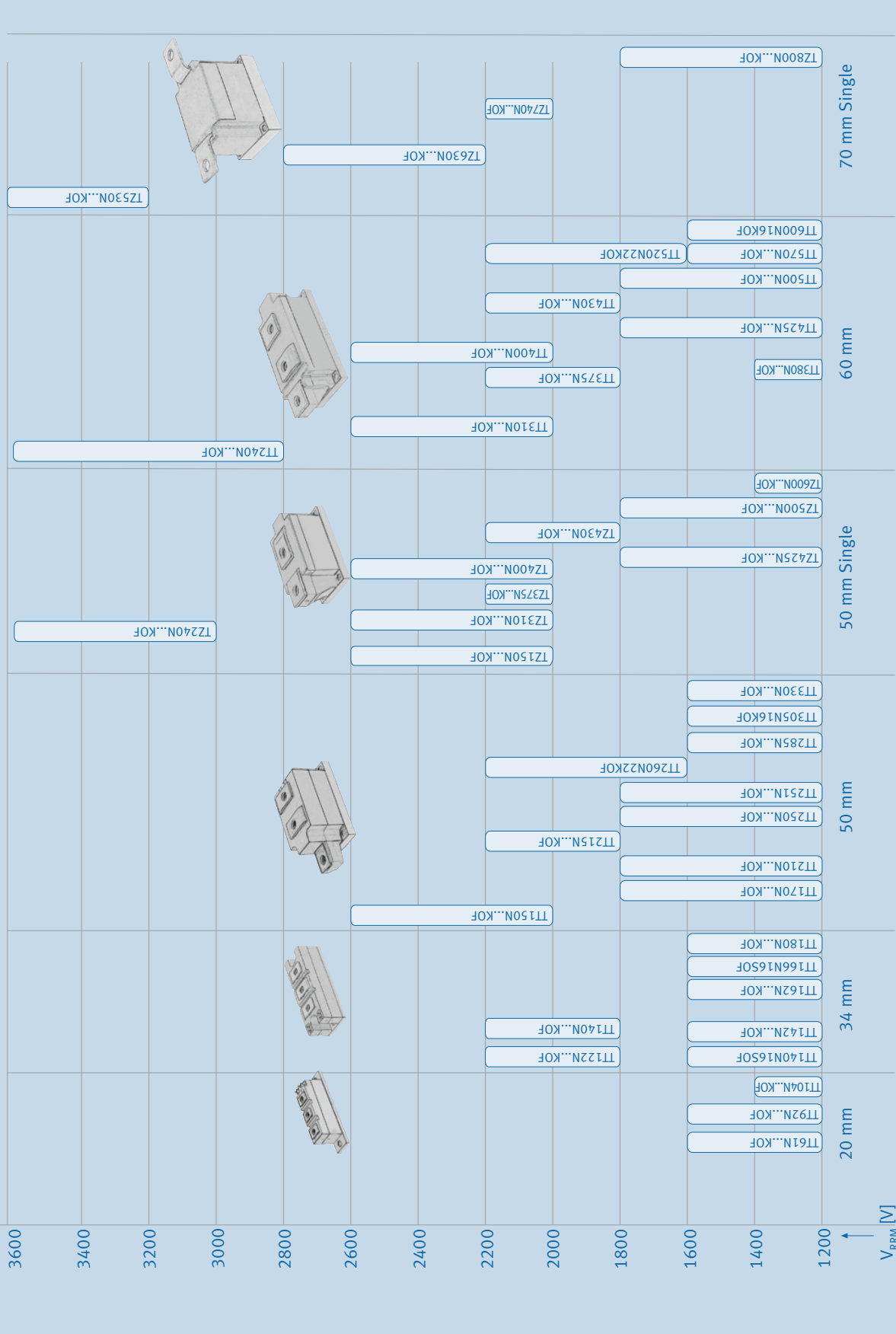
We offer a broad range of PowerBLOCK modules containing thyristor and diode pellets in a voltage range of 1200V to 4400V and a current range of 61A up to 1070A.

The modules are designed and assembled in high reliable pressure contact technology using an isolated copper base plate.

They are offered in several dual and single device topologies for almost all phase control or rectifier applications.

Application areas for our modules are e.g. electrical drives, as well as low voltage soft starters and general purpose power supplies.

Overview PowerBLOCK Thyristor Modules for Phase Control



PowerBLOCK

Thyristor Modules for Phase Control

Type		V_{DRM}, V_{RRM} [V] $V_{DSM} = V_{DRM}$ $V_{RSM} = V_{RRM} + 100 V$	I_{TSM} [A] @10ms, $T_{vj max}$	$\int i^2 dt$ [A ² s · 10 ³] 10 ms, $T_{vj max}$	I_{TAVM}/T_c [A/°C] @180° el sin	$V_{(TO)}$ [V] @ $T_{vj max}$	r_T [mΩ] @ $T_{vj max}$	$(di/dt)_{cr}$ [A/μs] @DIN IEC 747-6	t_q [μs] typisch	R_{thJC} [K/W] @180° el sin	R_{thCK} [K/W] @180° el sin	$T_{vj max}$ [°C]	Outline / page
Base plate = 20 mm	TT 61 N16 KOF	1600	1400	9,8	60/85	0,80	3,40	150	120	0,52	0,16	125	TP20/6.23
	TT 92 N16 KOF	1600	1800	16,2	92/85	0,85	2,15	150	150	0,37	0,10	130	TP20/6.23
	TT 104 N14 KOF	1400	1800	16,2	104/85	0,85	2,15	150	150	0,37	0,10	140	TP20/6.23
Base plate = 34 mm	TT 122 N22 KOF	2200	2950	43,5	122/85	1,00	2,15	100	300	0,20	0,06	125	TP34/6.23
	TT 140 N22 KOF	2200	3200	51,2	140/85	0,90	1,75	150	300	0,19	0,06	125	TP34/6.23
	◆ TT 140 N16 SOF	1600	data on request										TS34/6.23
	TT 142 N16 KOF	1600	4100	84,0	142/85	0,90	1,10	150	200	0,22	0,06	125	TP34/6.23
	◆ TT 166 N16 SOF	1600	data on request										TS34/6.23
	TT 162 N16 KOF	1600	4400	97,0	162/85	0,85	0,95	150	200	0,20	0,06	125	TP34/6.23
	TT 180 N16 KOF	1600	4100	84,0	180/85	0,85	0,90	150	200	0,20	0,06	130	TP34/6.23
Base plate = 50 mm	TT 150 N26 KOF	2600	4000	80	150/85	1,20	2,30	60	300	0,130	0,04	125	TP50/6.23
	■ TT 170 N18 KOF	1800	4600	106	170/85	0,95	1,00	150	250	0,170	0,04	125	TP50A/6.23
	TT 210 N18 KOF	1800	5800	168	210/85	1,00	0,85	150	200	0,130	0,04	125	TP50A/6.23
	TT 215 N22 KOF	2200	6300	198	215/85	0,95	0,92	100	300	0,130	0,04	125	TP50A/6.23
	TT 250 N18 KOF	1800	7000	245	250/85	0,80	0,70	150	250	0,130	0,04	125	TP50A/6.23
	TT 251 N18 KOF	1800	8000	320	250/85	0,80	0,70	250	250	0,130	0,04	125	TP50A/6.23
	TT 260 N22 KOF	2200	8000	320	260/85	0,85	0,64	250	250	0,120	0,04	130	TP50A/6.23
	TT285 N16 KOF	1600	8000	320	285/92	0,80	0,70	250	250	0,117	0,04	135	TP50A/6.23
	◆ TT 305 N16 KOF	1600	9000	400	305/85	0,80	0,58	250	250	0,120	0,04	130	TP50A/6.23
	TT 330 N16 KOF	1600	8000	320	330/85	0,80	0,60	250	250	0,117	0,04	135	TP50A/6.23
Base plate = 60 mm	■ TT 240 N36 KOF	3600	5500	151	240/85	1,17	1,70	100	350	0,078	0,02	125	TP60/6.24
	■ TT 310 N26 KOF	2600	9000	405	310/85	1,00	0,86	120	300	0,078	0,02	125	TP60/6.24
	■ TT 375 N22 KOF	2200	10600	561	375/85	0,85	0,56	120	300	0,078	0,02	125	TP60/6.24
	■ TT 380 N14 KOF	1400	11000	605	380/85	1,00	0,38	120	250	0,078	0,02	125	TP60/6.24
	TT 400 N26 KOF	2600	11000	605	400/85	1,00	0,50	150	300	0,065	0,02	125	TP60/6.24
	TT 425 N18 KOF	1800	12500	781	425/85	0,90	0,30	120	250	0,078	0,02	125	TP60/6.24
	TT 430 N22 KOF	2200	12000	720	430/85	0,95	0,45	150	300	0,065	0,02	125	TP60/6.24
	TT 500 N18 KOF	1800	14500	1051	500/85	0,90	0,27	200	250	0,065	0,02	125	TP60/6.24
	◆ TT 520 N22 KOF	2200	14500	1051	520/85	0,85	0,35	200	250	0,058	0,02	125	TP60A/6.24
	TT 570 N16 KOF	1600	14000	980	570/87	0,90	0,27	200	250	0,065	0,02	125	TP60/6.24
	◆ TT 600 N16 KOF	1600	17500	1531	600/85	0,80	0,26	200	250	0,058	0,02	125	TP60A/6.24

PowerBLOCK modules are UL recognized

Common anode or cathode on request

◆ New type

■ Not for new design

SCR
Diode Modules

PowerBLOCK

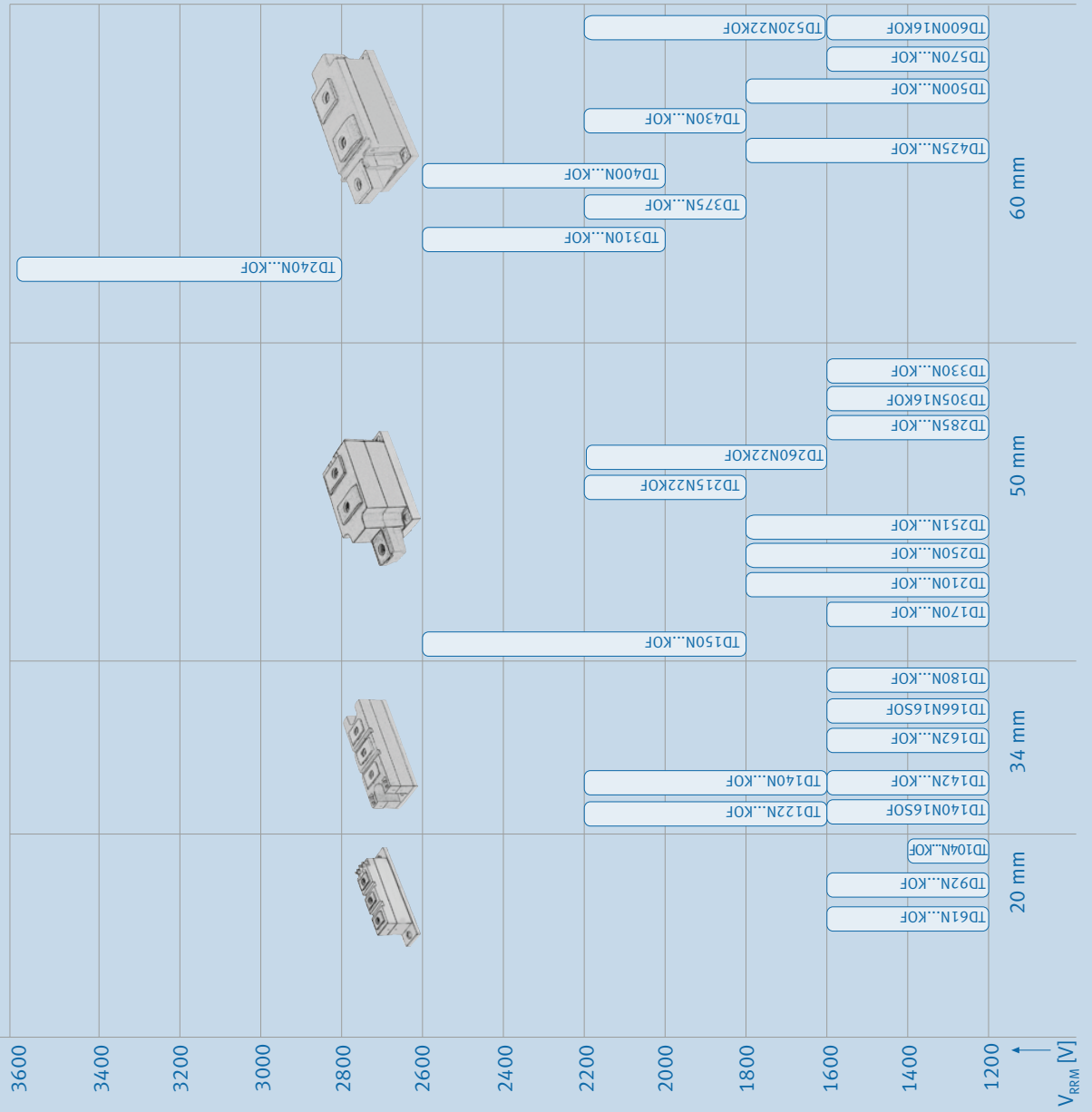
Single Thyristor Modules for Phase Control

Type		V_{DRM}, V_{RRM} [V] $V_{DSM} = V_{DRM}$ $V_{RSM} = V_{RRM} + 100 \text{ V}$	I_{TSM} [A] @10ms, $T_{vj \text{ max}}$	$\int i^2 dt$ [A ² s · 10 ³] 10 ms, $T_{vj \text{ max}}$	I_{TAVM}/T_c [A/°C] @180° el sin	$V_{(TO)}$ [V] @ $T_{vj \text{ max}}$	r_T [mΩ] @ $T_{vj \text{ max}}$	$(di/dt)_{cr}$ [A/μs] @DIN IEC 747-6	t_q [μs] typisch	R_{thJC} [K/W] @180° el sin	R_{thCK} [K/W] @180° el sin	$T_{vj \text{ max}}$ [°C]	Outline / page
Base plate = 50 mm	■ TZ 150 N26 KOF	2600	4000	80	150/85	1,20	2,30	60	300	0,130	0,02	125	TP50.1/6.24
	TZ 240 N36 KOF	3600	5500	151	240/85	1,17	1,70	100	350	0,078	0,02	125	TP50.1/6.24
	TZ 310 N26 KOF	2600	8000	320	310/85	1,00	0,86	120	300	0,078	0,02	125	TP50.1/6.24
	TZ 400 N26 KOF	2600	11000	605	400/85	1,00	0,50	150	300	0,065	0,02	125	TP50.1/6.24
	TZ 425 N18 KOF	1800	12500	781	425/85	0,90	0,30	120	250	0,078	0,02	125	TP50.1/6.24
	TZ 430 N22 KOF	2200	12000	720	430/85	0,95	0,45	150	300	0,065	0,02	125	TP50.1/6.24
	TZ 500 N18 KOF	1800	14500	1051	500/85	0,90	0,27	200	250	0,065	0,02	125	TP50.1/6.24
TZ 600 N16 KOF	1600	14000	980	600/85	0,90	0,27	200	250	0,065	0,02	125	TP50.1/6.24	
Base plate = 70 mm	TZ 530 N36 KOF	3600	20000	2000	530/85	1,05	0,49	80	400	0,045	0,01	125	TP70/6.24
	TZ 630 N28 KOF	2800	23000	2650	630/85	0,95	0,37	150	400	0,042	0,01	125	TP70/6.24
	TZ 749 N22 KOF	2200	26500	3500	740/85	0,90	0,21	200	350	0,042	0,01	125	TP70/6.24
	TZ 800 N18 KOF	1800	30000	4500	800/85	0,85	0,17	200	240	0,042	0,01	125	TP70/6.24

PowerBLOCK modules are UL recognized

■ Not for new design

Overview PowerBLOCK Thyristor/Diode Modules for Phase Control



SCR
Diode Modules

PowerBLOCK

Thyristor/Diode Modules for Phase Control

Type		V_{DRM}, V_{RRM} [V] $V_{DSM} = V_{DRM}$ $V_{RSM} = V_{RRM} + 100\text{ V}$	I_{TSM} [A] @10ms, $T_{vj\text{ max}}$	$\int i^2 dt$ [A ² s · 10 ³] 10 ms, $T_{vj\text{ max}}$	I_{TAVM}/T_c [A/°C] @180° el sin	$V_{(TO)}$ [V] @ $T_{vj\text{ max}}$	r_T [mΩ] @ $T_{vj\text{ max}}$	$(di/dt)_{cr}$ [A/μs] @DIN IEC 747-6	t_q [μs] typisch	R_{thJC} [K/W] @180° el sin	R_{thCK} [K/W] @180° el sin	$T_{vj\text{ max}}$ [°C]	Outline / page
Base plate = 20 mm	TD 61 N16 KOF	1600	1400	9,8	60/85	0,80	3,40	150	120	0,52	0,16	125	TP20/6.23
	TD 92 N16 KOF	1600	1800	16,2	92/85	0,85	2,15	150	150	0,37	0,10	130	TP20/6.23
	TD 104 N14 KOF	1400	1800	16,2	104/85	0,85	2,15	150	150	0,37	0,10	140	TP20/6.23
Base plate = 34 mm	TD 122 N22 KOF	2200	2950	43,5	122/85	1,00	2,15	100	300	0,20	0,06	125	TP34/6.23
	TD 140 N22 KOF	2200	3200	51,2	140/85	0,90	1,75	150	300	0,19	0,06	125	TP34/6.23
	TD 140 N16 SOF	1600	data on request										TS34/6.23
	TD 142 N16 KOF	1600	4100	84	142/85	0,90	1,10	150	200	0,22	0,06	125	TP34/6.23
	TD 162 N16 KOF	1600	4400	97	162/85	0,85	0,95	150	200	0,20	0,06	125	TP34/6.23
	TD 166 N16 SOF	1600	data on request										TS34/6.23
	TD 180 N16 KOF	1600	4100	84	180/85	0,85	0,90	150	200	0,20	0,06	130	TP34/6.23
Base plate = 50 mm	TD 150 N26 KOF	2600	4000	80	150/85	1,20	2,30	60	300	0,130	0,04	125	TP50/6.23
	■ TD 170 N16 KOF	1600	4600	106	170/85	0,95	1,00	150	250	0,170	0,04	125	TP50A/6.23
	TD 210 N18 KOF	1800	5800	168	210/85	1,00	0,85	150	200	0,130	0,04	125	TP50A/6.23
	TD 215 N22 KOF	2200	6300	198	215/85	0,95	0,92	100	300	0,130	0,04	125	TP50A/6.23
	TD 250 N18 KOF	1800	7000	245	250/85	0,80	0,70	150	250	0,130	0,04	125	TP50A/6.23
	TD 251 N18 KOF	1800	8000	320	250/85	0,80	0,70	250	250	0,130	0,04	125	TP50A/6.23
	◆ TD 260N22 KOF	2200	8000	320	260/85	0,85	0,64	250	250	0,120	0,04	130	TP50A/6.23
	TD 285 N16 KOF	1600	8000	320	285/92	0,80	0,70	250	250	0,117	0,04	135	TP50A/6.23
	◆ TD 305 N16 KOF	1600	9000	400	305/85	0,80	0,58	250	250	0,120	0,04	130	TP50A/6.23
	TD 330 N16 KOF	1600	8000	320	330/85	0,80	0,60	250	250	0,117	0,04	135	TP50A/6.23
Base plate = 60 mm	■ TD 240 N36 KOF	3600	5500	151	240/85	1,17	1,70	100	350	0,078	0,02	125	TP60/6.24
	■ TD 310 N26 KOF	2600	9000	405	310/85	1,00	0,86	120	300	0,078	0,02	125	TP60/6.24
	TD 400 N26 KOF	2600	11000	605	400/85	1,00	0,50	150	300	0,065	0,02	125	TP60/6.24
	TD 425 N18 KOF	1800	12500	781	425/85	0,90	0,30	120	250	0,078	0,02	125	TP60/6.24
	TD 430 N22 KOF	2200	12000	720	430/85	0,95	0,45	150	300	0,065	0,02	125	TP60/6.24
	TD 500 N18 KOF	1800	14500	1051	500/85	0,90	0,27	200	250	0,065	0,02	125	TP60/6.24
	◆ TD 520 N22 KOF	2200	14500	1051	520/85	0,85	0,35	200	250	0,058	0,02	125	TP60A/6.24
	TD 570 N16 KOF	1600	14000	980	570/87	0,90	0,27	200	250	0,065	0,02	135	TP60/6.24
	◆ TD 600 N16 KOF	1600	17500	1531	600/85	0,80	0,26	200	250	0,058	0,02	125	TP60A/6.24

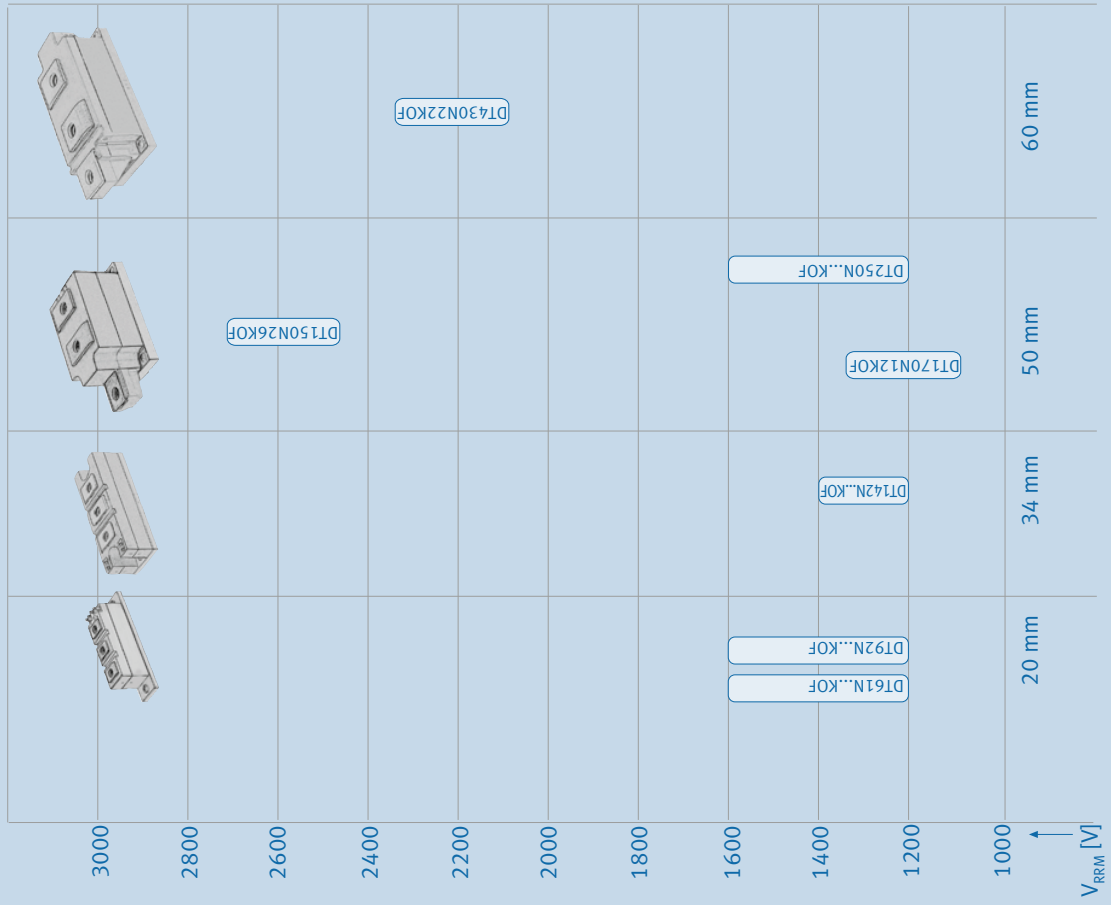
PowerBLOCK modules are UL recognized

Common anode or cathode on request

◆ New type ■ Not for new design

SCR
Diode Modules

Overview PowerBLOCK Diode/Thyristor Modules for Phase Control



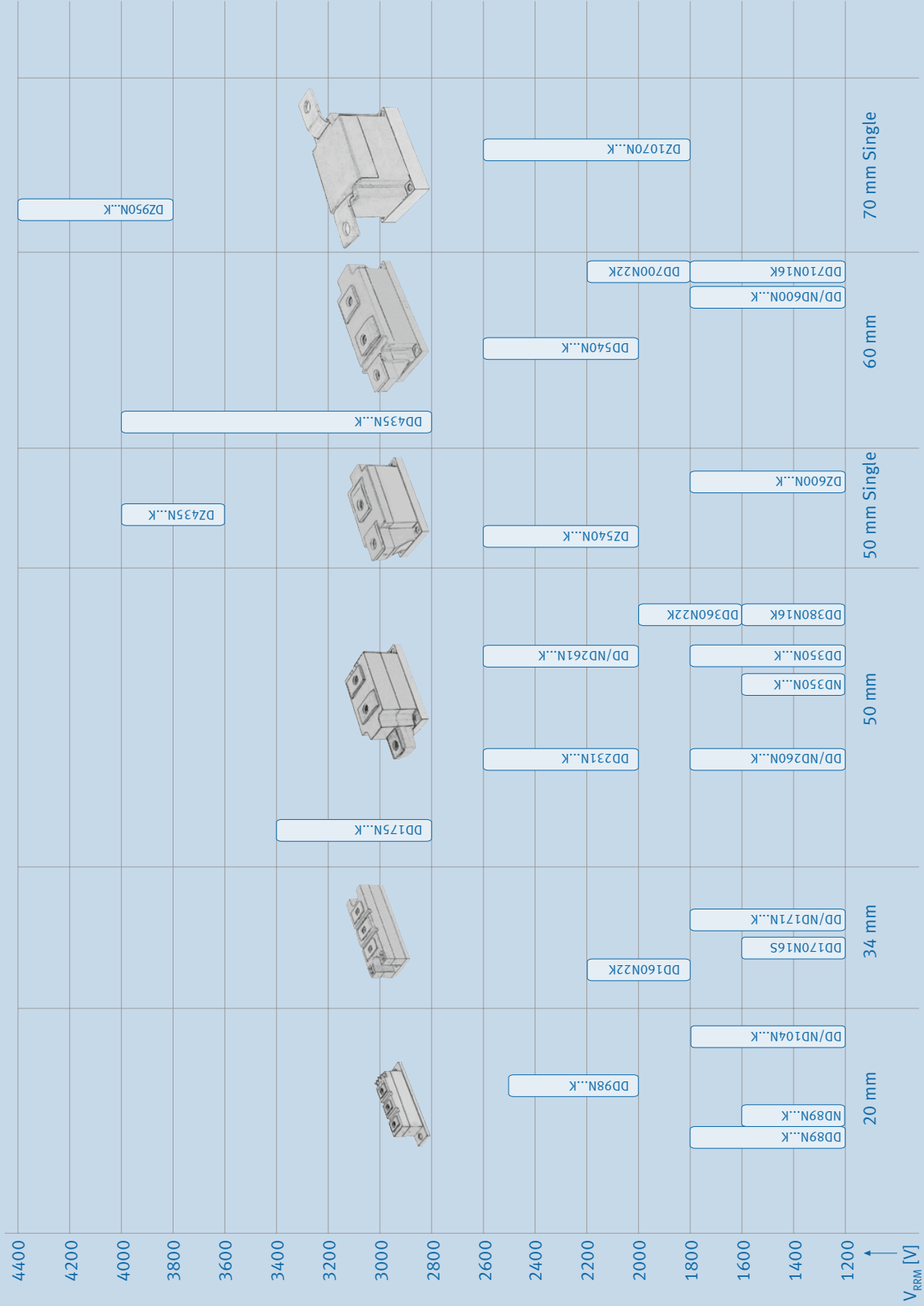
PowerBLOCK

Diode/Thyristor Modules for Phase Control

Type		V_{DRM}, V_{RRM} [V] $V_{DSM} = V_{DRM}$ $V_{RSM} = V_{RRM} + 100\text{ V}$	I_{TSM} [A] @10ms, $T_{vj\ max}$	$\int i^2 dt$ [A ² s · 10 ³] 10 ms, $T_{vj\ max}$	I_{TAVM}/T_c [A/°C] @180° el sin	$V_{(TO)}$ [V] @ $T_{vj\ max}$	r_T [mΩ] @ $T_{vj\ max}$	$(di/dt)_{cr}$ [A/μs] @DIN IEC 747-6	t_q [μs] typisch	R_{thJC} [K/W] @180° el sin	R_{thCK} [K/W] @180° el sin	$T_{vj\ max}$ [°C]	Outline / page
Base plate = 20 mm	DT 61 N16 KOF	1600	1400	9,8	60/85	0,80	3,40	150	120	0,52	0,16	125	TP20/6.23
	DT 92 N16 KOF	1600	1800	16,2	92/85	0,85	2,15	150	150	0,37	0,10	130	TP20/6.23
Base plate = 34 mm	DT 142 N12 KOF	1200	4100	84	142/85	0,90	1,10	150	200	0,22	0,06	125	TP34/6.23
Base plate = 50 mm	DT 150 N26 KOF	2600	4000	80	150/85	1,20	2,30	60	300	0,13	0,04	125	TP50/6.23
	DT 170 N12 KOF	1200	4600	106	170/85	0,95	1,00	150	250	0,17	0,04	125	TP50/6.23
	DT 250 N16 KOF	1600	7000	245	250/85	0,80	0,70	150	250	0,13	0,04	125	TP50/6.23
Base plate = 60 mm	DT 430 N22 KOF	2200	12000	720	430/85	0,95	0,45	150	300	0,065	0,02	125	TP60/6.24

PowerBLOCK modules are UL recognized

Overview PowerBLOCK Diode Modules for Phase Control



PowerBLOCK

Rectifier Diode Modules



Type	V_{RRM} [V]	I_{FSM} [A] @10ms, $T_{vj\ max}$	$\int i^2 dt$ [A ² s · 10 ³] @10ms, $T_{vj\ max}$	I_{FAVM}/T_c [A] @180° el sin	$V_{(T0)}$ [V] $T_{vj\ max}$	r_T [mΩ] $T_{vj\ max}$	R_{thjc} [K/W] @180° el sin	R_{thch} [K/W] @180° el sin	$T_{vj\ max}$ [°C]	Outline / page		
Base plate = 20 mm	DD 89 N18 K	1800	2400	28,8	89/100	0,75	2,3	0,45	0,10	150	DP20/6.25	
	ND 89 N16 K	1600	2400	28,8	89/100	0,75	2,3	0,45	0,10	150	DP20/6.25	
	DD 98 N25 K	2500	2000	20	98/100	0,82	2,0	0,39	0,10	150	DP20/6.25	
	DD 104 N18 K	1800	2500	31,25	104/100	0,70	2,1	0,39	0,10	150	DP20/6.25	
	ND 104 N18 K	1800	2500	31,25	104/100	0,70	2,1	0,39	0,10	150	DP20/6.25	
Base plate = 34 mm	DD 160 N22 K	2200	4600	105,8	160/100	0,80	1,00	0,26	0,06	150	DP34/6.25	
	DD 170 N16 S	1600	data on request									DS34/6.25
	DD 171 N18 K	1800	5600	157	170/100	0,75	0,8	0,26	0,06	150	DP34/6.25	
	ND 171 N18 K	1800	5600	157	170/100	0,75	0,8	0,26	0,06	150	DP34/6.25	
Base plate = 50 mm	DD 175 N34 K	3400	4000	80	175/100	0,90	1,80	0,17	0,04	150	DP50/6.25	
	DD 231 N26 K	2600	6400	205	231/100	0,80	1,84	0,17	0,04	150	DP50/6.25	
	DD 260 N18 K	1800	8300	344	260/100	0,70	0,68	0,17	0,04	150	DP50/6.25	
	ND 260 N16 K	1600	8300	344	260/100	0,70	0,68	0,17	0,04	150	DP50ND/6.26	
	DD 261 N24 K	2400	8300	344	260/100	0,70	0,68	0,17	0,04	150	DP50/6.25	
	ND 261 N26 K	2600	8300	344	260/100	0,70	0,68	0,17	0,04	150	DP50ND/6.26	
	DD 285 N04 K	400*)	8300	344	285/100	0,75	0,40	0,17	0,04	150	DP50/6.25	
	DD 350 N18 K	1800	11000	605	350/100	0,75	0,40	0,13	0,04	150	DP50/6.25	
	ND 350 N18 K	1800	11000	605	350/100	0,75	0,40	0,13	0,04	150	DP50ND/6.26	
	◆ DD 380 N 16 K	1600	11500	660	380/100	0,75	0,32	0,125	0,04	150	DP50A/6.25	
	◆ DD 360 N 22 K	2200	11500	550	360/100	0,75	0,40	0,125	0,04	150	DP50A/6.25	
	DZ 435 N40 K	4000	12000	720	435/100	0,84	0,60	0,078	0,02	150	DP50.1/6.26	
	DZ 540 N26 K	2600	14000	980	540/100	0,78	0,31	0,078	0,02	150	DP50.1/6.26	
DZ 600 N18 K	1800	19000	1805	600/100	0,75	0,22	0,078	0,02	150	DP50.1/6.26		
Base plate = 60 mm	DD 435 N40 K	4000	12000	720	435/100	0,84	0,60	0,078	0,02	150	DP60/6.25	
	DD 540 N26 K	2600	14000	980	540/100	0,78	0,31	0,078	0,02	150	DP60/6.25	
	DD 600 N18 K	1800	19000	1800	600/100	0,75	0,22	0,078	0,02	150	DP60/6.25	
	ND 600 N18 K	1800	19000	1800	600/100	0,75	0,22	0,078	0,02	150	DP60/6.25	
	◆ DD 700 N22 K	2200	21000	2205	700/100	0,78	0,19	0,065	0,02	150	DP60A/6.26	
	◆ DD 710 N16 K	1600	22000	2420	710/100	0,75	0,145	0,065	0,02	150	DP60A/6.26	
Base plate = 70 mm	DZ 950 N44 K	4400	29000	4205	950/100	0,85	0,28	0,042	0,01	150	DP70/6.26	
	DZ 1070 N26 K	2600	35000	6125	1070/100	0,8	0,17	0,045	0,01	160	DP70/6.26	

PowerBLOCK modules are UL recognized

Common anode or cathode on request

*) $V_{RSM} = V_{RRM} + 50V$

◆ New type

PowerBLOCK

Fast Diode Modules

Type		V_{RRM} [V] $V_{RSM} =$ $V_{RRM} + 100\text{ V}$	I_{FSM} [A] @10ms, $T_{vj\ max}$	$\int i^2 dt$ [A ² s · 10 ³] @10ms, $T_{vj\ max}$	I_{FAVM}/T_c [A/°C] @180° el sin	$V_{(TO)}$ [V] @ $T_{vj\ max}$	r_T [mΩ] @ $T_{vj\ max}$	I_{RM} [A] @ $T_{vj\ max}$ di/dt = 100 A/μs	R_{thjc} [K/W] @180° el sin	R_{thch} [K/W] @180° el sin	$T_{vj\ max}$ [°C]	Outline / page
Base plate = 20 mm	DD 46 S12 K	1200*)	820	3,6	45/85	0,9	3,9		0,68	0,16	125	DP20/6.25
	DD 61 S14 K	1400	1600	12,8	61/100	1	2,2	82	0,62	0,16	150	DP20/6.25
	DD 81 S14 K	1400	1900	18,1	81/100	0,95	1,7	87	0,48	0,16	150	DP20/6.25
	DD 82 S10 K	1000*)	1900	18,1	81/100	0,95	1,7	65	0,48	0,16	150	DP20/6.25
Base plate = 50 mm	DD 230 S26 K	2600	7500	281	230/100	1,0	0,8		0,15	0,04	150	DP50/6.25
	DD 241 S14 K	1400*)	7500	281	240/100	1,1	0,5	135	0,15	0,04	150	DP50/6.25
	ND 241 S14 K	1400*)	7500	281	240/100	1,1	0,5	135	0,15	0,04	150	DP50ND/6.26
	DD 242 S10 K	1000*)	7500	281	240/100	1,1	0,5	98	0,15	0,04	150	DP50/6.25
	ND 242 S10 K	1000*)	7500	281	240/100	1,1	0,5	98	0,15	0,04	150	DP50ND/6.26

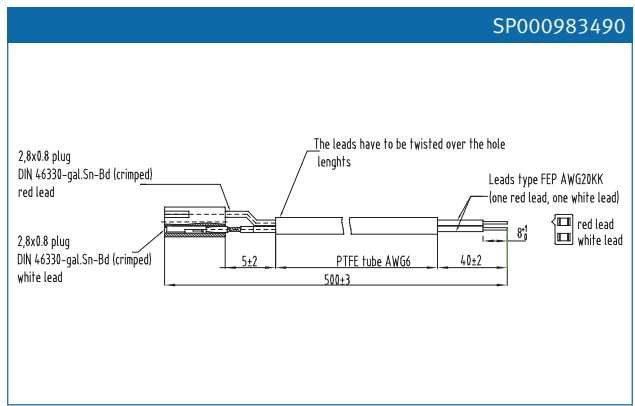
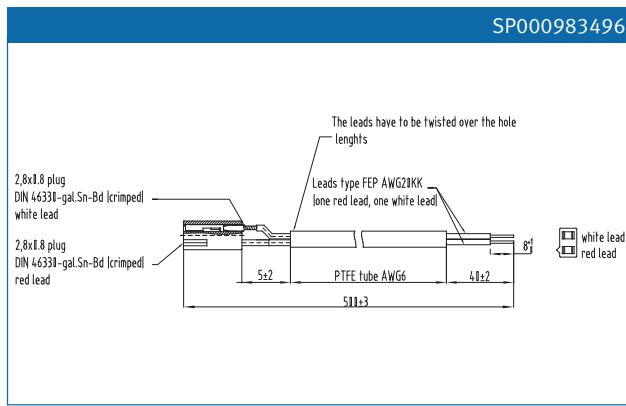
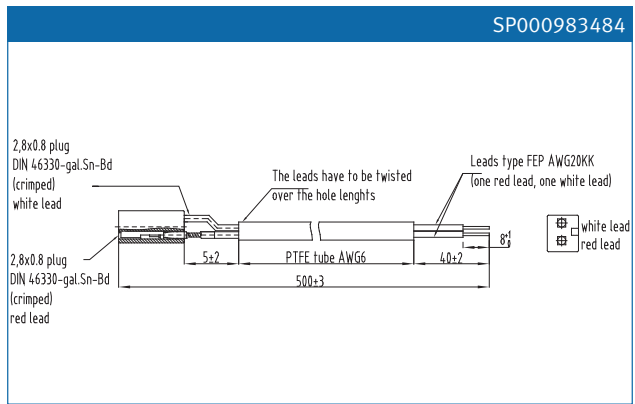
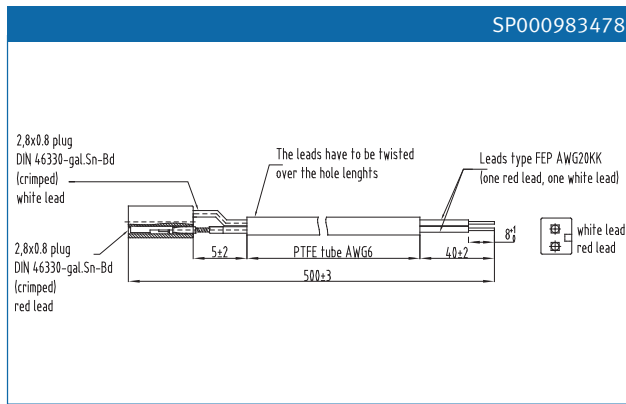
PowerBLOCK modules are UL recognized
Common anode or cathode on request

*) $V_{RRM} \leq 1000\text{ V} : V_{RSM} = V_{RRM} + 50\text{ V}$

Gate Leads for PowerBLOCK Thyristor Modules

Gate leads must be ordered separately

Base plate width [mm]	Type	Terminal #	Terminal descr.	gate lead color	"HK" lead color	length [mm]	Ordering Code
20	Gatelead L=500 PB20 G1/K1	5/4	G1/K1	red	white	500	SP000983478
	Gatelead L=500 PB20 G2/K2	6/7	G2/K2	red	white	500	SP000983484
34, 50, 60	Gatelead L=500 PB34-60 G1/K1	5/4	G1/K1	red	white	500	SP000983496
	Gatelead L=500 PB34-60 G2/K2	6/7	G2/K2	red	white	500	SP000983490
50 single	Gatelead L=500 PB34-60 G1/K1	5/4	G1/K1	red	white	500	SP000983496
70 single	Gatelead L=500 PB34-70 G2/K2	5/4	G1/K1	red	white	500	SP000983490



SCR Diode Modules

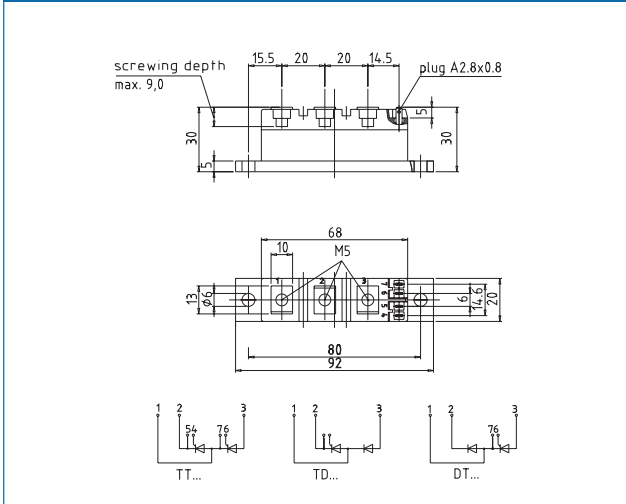
Screws for electrical connection of PowerBLOCK Thyristor and Diode Modules

screws must be ordered separately

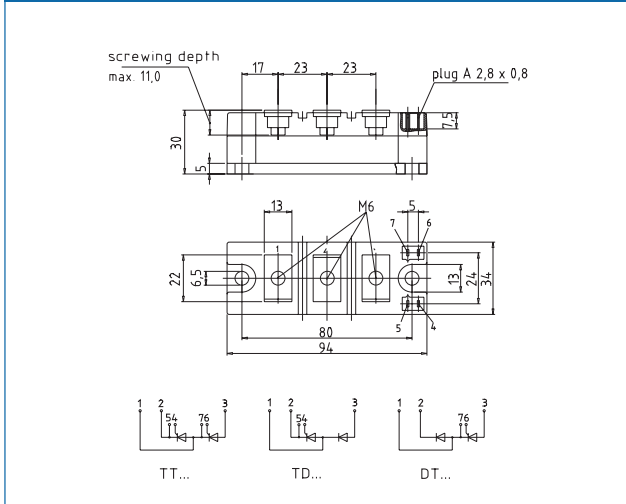
Base plate	screw	Salesname	packing unit	SP No
20 mm	M5x11	SHR DIN7985-M5X11	500	SP000485868
50 mm	M8x18	SHR DIN933-M8X18	500	SP000485876
50 mm single	M10x23	SHR DIN933-M10X23	500	SP000485880
60 mm	M10x23	SHR DIN933-M10X23	500	SP000485880

Outlines

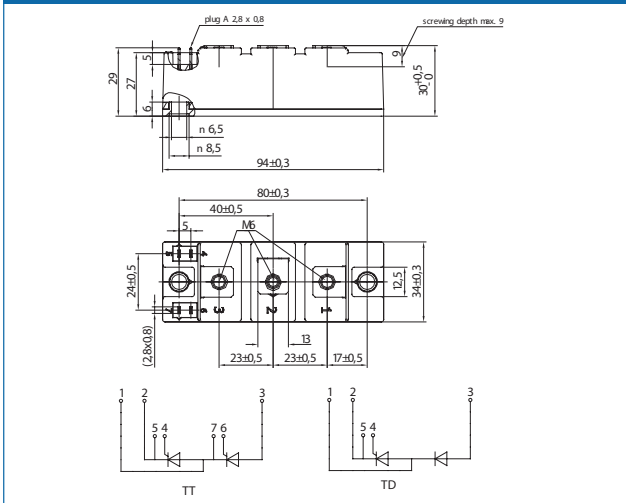
20 mm TP20



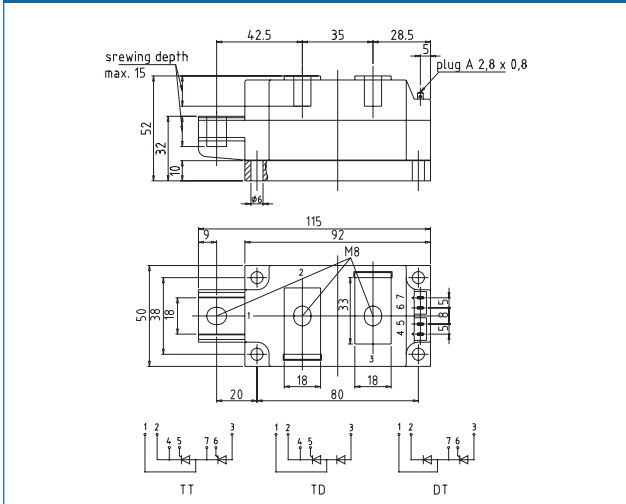
34 mm TP34



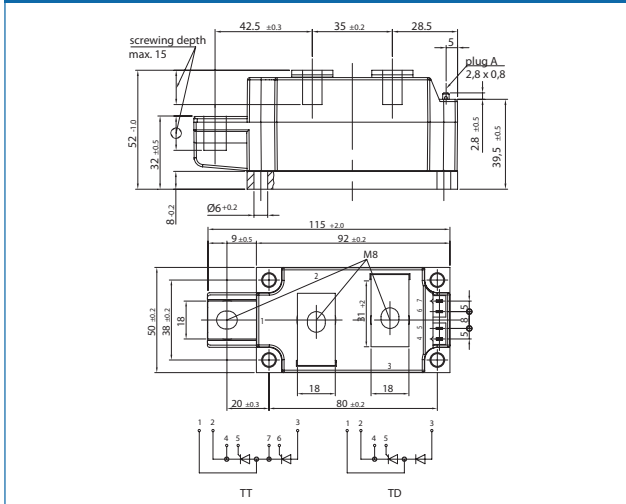
34 mm TS34

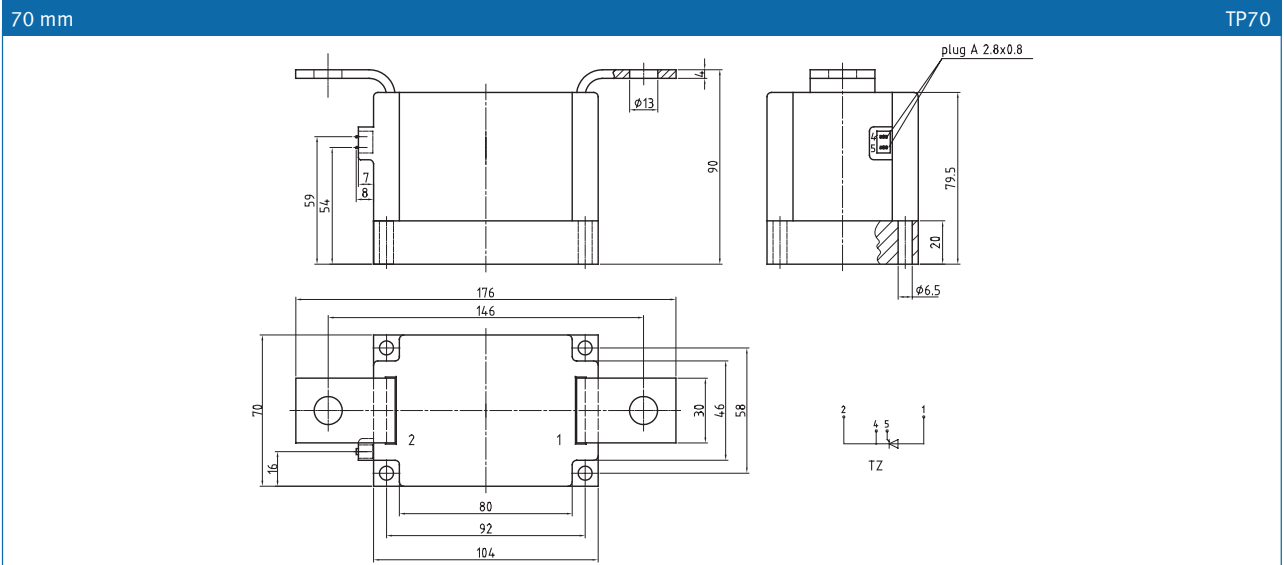
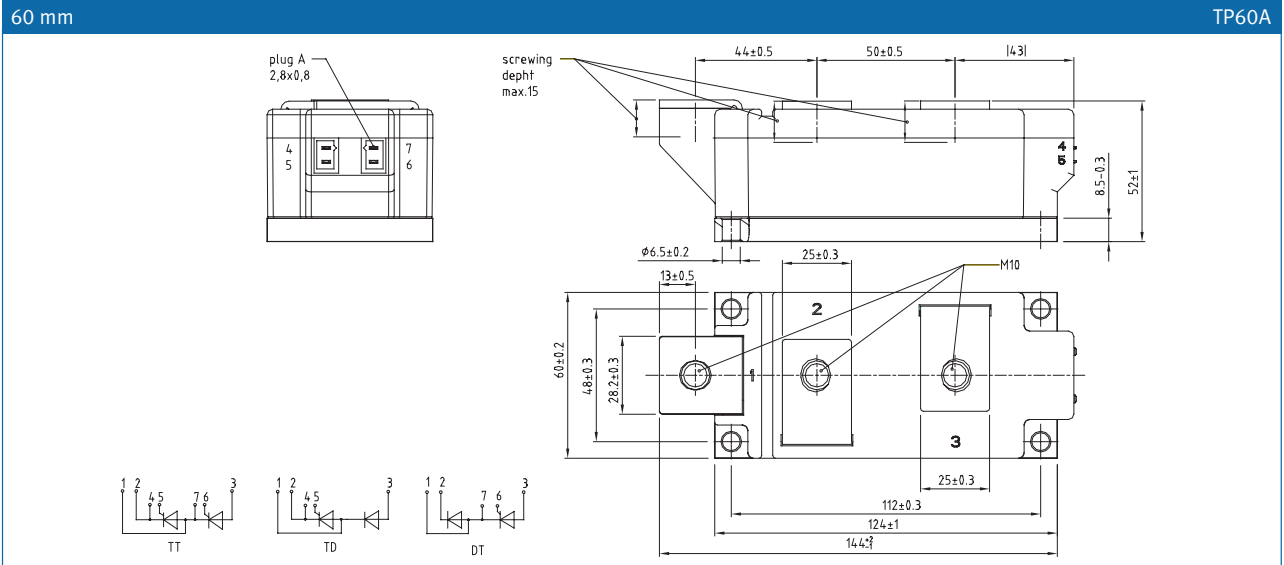
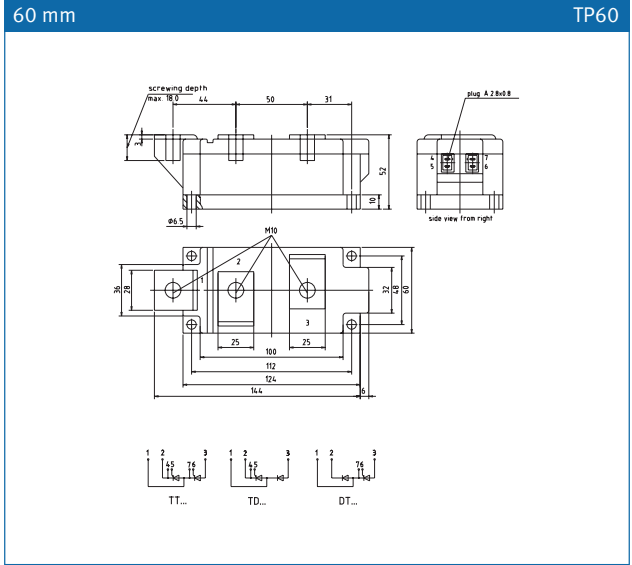
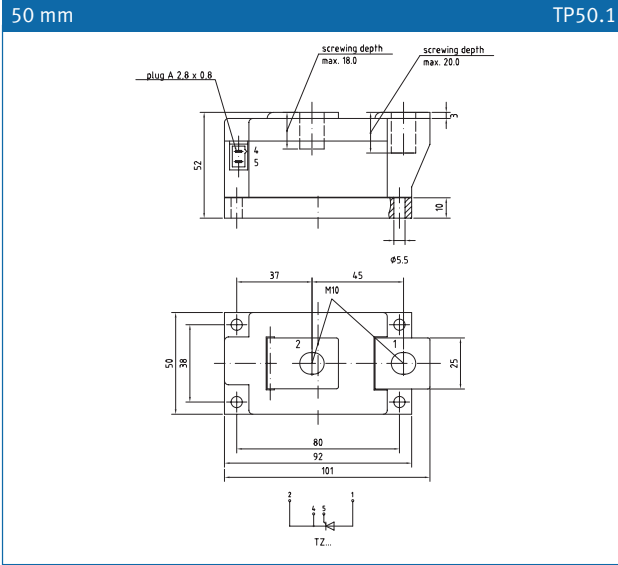


50 mm TP50



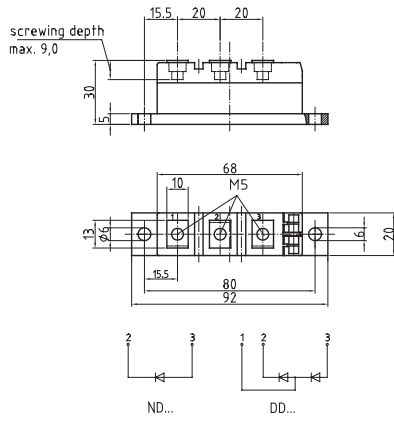
50 mm TP50A





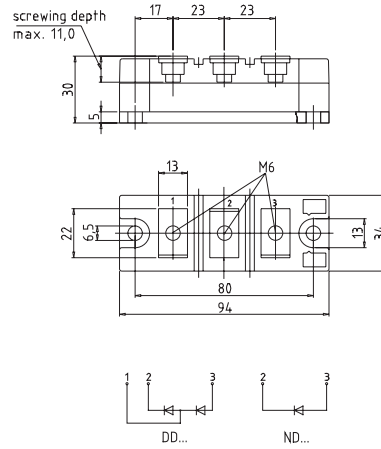
20 mm

DP20



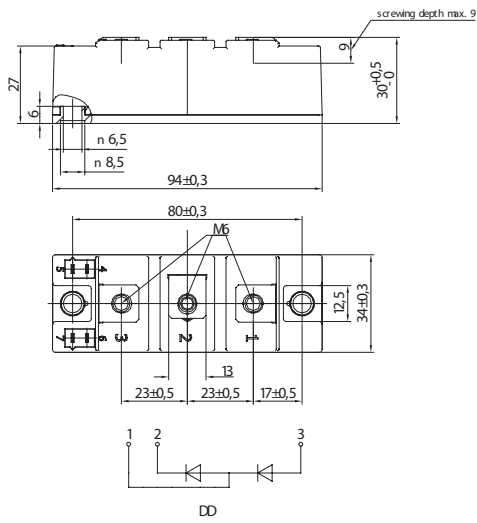
34 mm

DP34



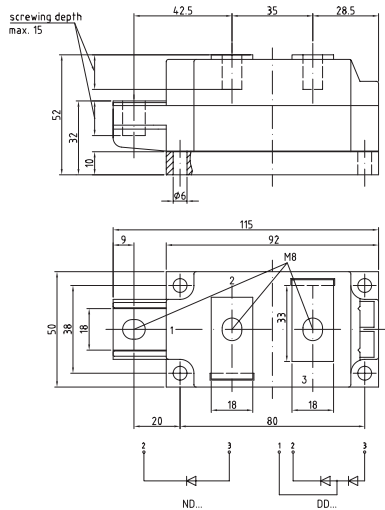
34 mm

DS34



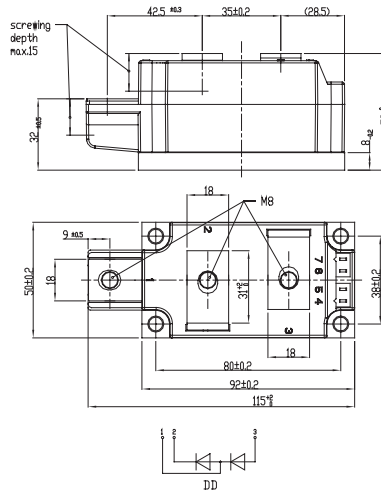
50 mm

DP50



50 mm

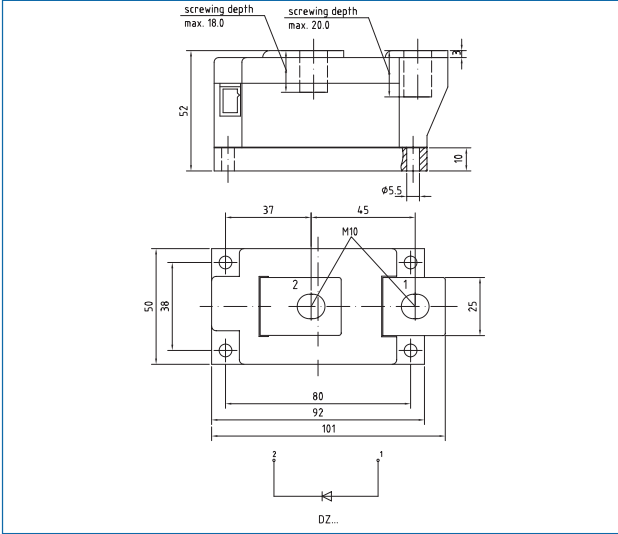
DP50A



SCR Diode Modules

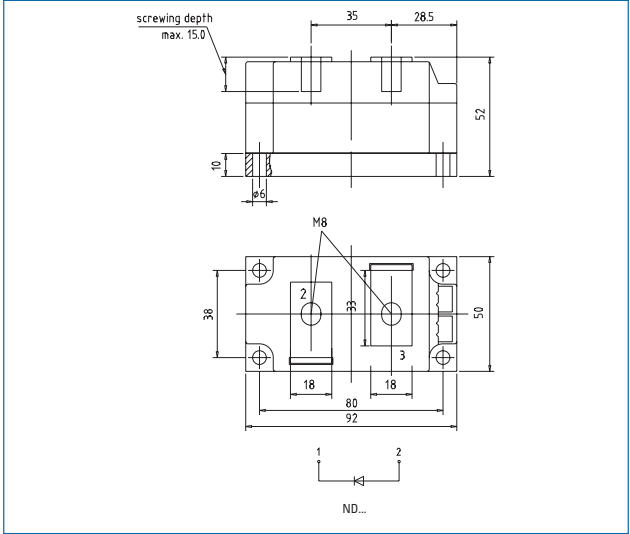
50 mm

DP50.1



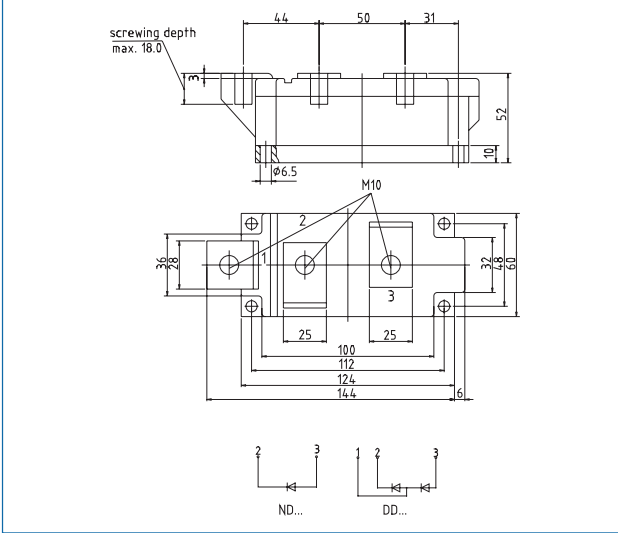
50 mm

DP50ND



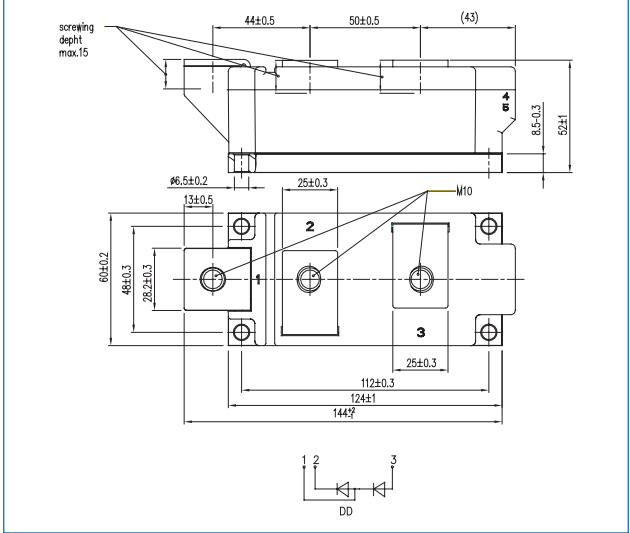
60 mm

DP60



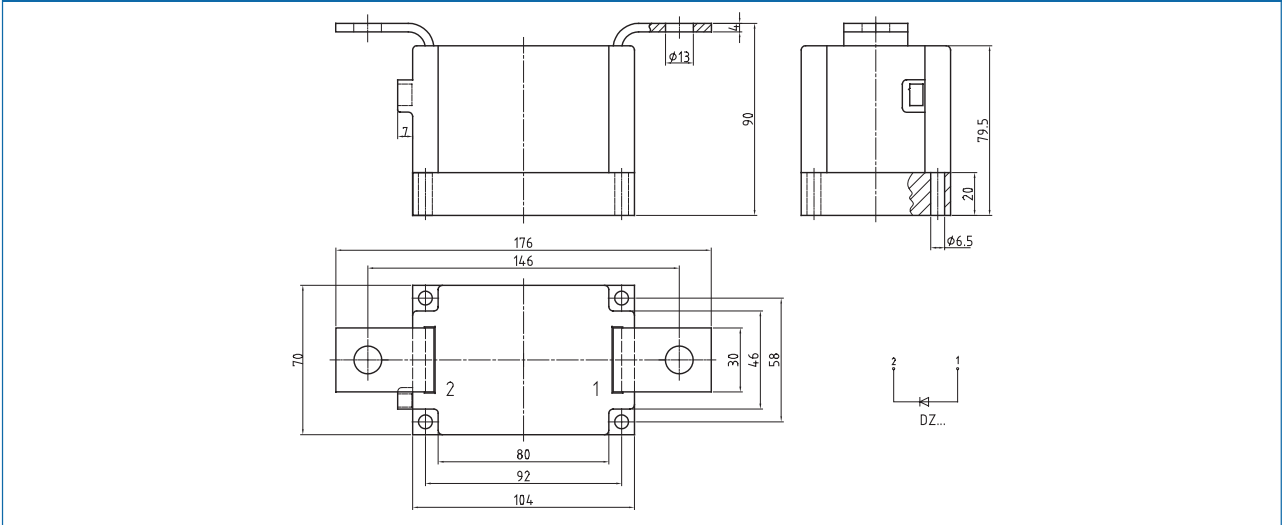
60 mm

DP60A



70 mm

DP70



Package Units

PowerBLOCK Modules

Type	Outline	Housing	Packing units
TT 61 N...KOF	TP20/6.23	PB20	15
TT 92 N...KOF	TP20/6.23	PB20	15
TT 104 N...KOF	TP20/6.23	PB20	15
TT 122 N...KOF	TP34/6.23	PB34	8
TT 140 N...KOF	TP34/6.23	PB34	8
TT 140 N 16 SOF	TS34/6.23	SB34	8
TT 142 N...KOF	TP34/6.23	PB34	8
◆ TT 160 N 16 SOF	TS34/6.23	SB34	8
TT 162 N...KOF	TP34/6.23	PB34	8
TT 180 N...KOF	TP34/6.23	PB34	8
TT 150 N...KOF	TP50/6.23	PB50	3
TT 170 N...KOF	TP50/6.23	PB50AT	3
TT 210 N...KOF	TP50/6.23	PB50AT	3
TT 215 N...KOF	TP50/6.23	PB50AT	3
TT 250 N...KOF	TP50/6.23	PB50AT	3
TT 251 N...KOF	TP50/6.23	PB50AT	3
◆ TT 260 N 22 KOF	TP50A/6.23	PB50AT	3
TT 285 N...KOF	TP50/6.23	PB50AT	3
◆ TT 305 N 16 KOF	TP50/6.23	PB50AT	3
TT 330 N...KOF	TP50/6.23	PB50	3
TT 330 N 16 AOF	TP50A/6.23	PB50AT	3
TT 240 N...KOF	TP60/6.24	PB60	2
TT 310 N...KOF	TP60/6.24	PB60	2
TT 375 N...KOF	TP60/6.24	PB60	2
TT 380 N...KOF	TP60/6.24	PB60	2
TT 400 N...KOF	TP60/6.24	PB60	2
TT 425 N...KOF	TP60/6.24	PB60	2
TT 430 N...KOF	TP60/6.24	PB60	2
TT 500 N...KOF	TP60/6.24	PB60	2
TT 520 N 22 KOF	TP60A/6.24	PB60AT	2
TT 570 N...KOF	TP60/6.24	PB60	2
◆ TT 600 N 16 KOF	TP60A/6.24	PB60AT	2
TZ 150 N...KOF	TP50.1/6.24	PB50.1	3
TZ 240 N...KOF	TP50.1/6.24	PB50.1	3
TZ 310 N...KOF	TP50.1/6.24	PB50.1	3
TZ 375 N...KOF	TP50.1/6.24	PB50.1	3
TZ 400 N...KOF	TP50.1/6.24	PB50.1	3
TZ 425 N...KOF	TP50.1/6.24	PB50.1	3
TZ 430 N...KOF	TP50.1/6.24	PB50.1	3
TZ 500 N...KOF	TP50.1/6.24	PB50.1	3
TZ 600 N...KOF	TP50.1/6.24	PB50.1	3
TZ 530 N...KOF	TP70/6.24	PB70	1
TZ 630 N...KOF	TP70/6.24	PB70	1
TZ 749 N...KOF	TP70/6.24	PB70	1
TZ 800 N...KOF	TP70/6.24	PB70	1
TD 61 N...KOF	TP20/6.23	PB20	15
TD 92 N...KOF	TP20/6.23	PB20	15
TD 104 N...KOF	TP20/6.23	PB20	15
TD 122 N...KOF	TP34/6.23	PB34	8
TD 140 N...KOF	TP34/6.23	PB34	8
◆ TD 140 N 16 SOF	TS34/6.23	SB34	8
TD 142 N...KOF	TP34/6.23	PB34	8
TD 162 N...KOF	TP34/6.23	PB34	8
◆ TD 160 N 16 SOF	TS34/6.23	SB34	8
TD 180 N...KOF	TP34/6.23	PB34	8

◆ New type

Type	Outline	Housing	Packing units
TD 150 N...KOF	TP50/6.23	PB50	3
TD 170 N...KOF	TP50/6.23	PB50AT	3
TD 210 N...KOF	TP50/6.23	PB50AT	3
TD 215 N...KOF	TP50/6.23	PB50AT	3
TD 250 N...KOF	TP50/6.23	PB50AT	3
TD 251 N...KOF	TP50/6.23	PB50	3
◆ TD 270 N 16 AOF	TP50A/6.23	PB50AT	3
◆ TD 260 N 22 AOF	TP50A/6.23	PB50AT	3
TD 285 N...KOF	TP50/6.23	PB50AT	3
TD 330 N...KOF	TP50/6.23	PB50	3
TD 330 N 16 AOF	TP50A/6.23	PB50AT	3
TD 240 N...KOF	TP60/6.24	PB60	2
TD 310 N...KOF	TP60/6.24	PB60	2
TD 375 N...KOF	TP60/6.24	PB60	2
TD 400 N...KOF	TP60/6.24	PB60	2
TD 425 N...KOF	TP60/6.24	PB60	2
TD 430 N...KOF	TP60/6.24	PB60	2
TD 500 N...KOF	TP60/6.24	PB60	2
TD520 N 22 KOF	TP60A/6.24	PB60AT	2
TD 570 N...KOF	TP60/6.24	PB60	2
TD600 N 16 KOF	TP60A/6.24	PB60AT	2
DT 61 N...KOF	TP20/6.23	PB20	15
DT 92 N...KOF	TP20/6.23	PB20	15
DT 142 N...KOF	TP34/6.23	PB34	8
DT 150 N...KOF	TP50/6.23	PB50	3
DT 170 N...KOF	TP50/6.23	PB50AT	3
DT 250 N...KOF	TP50/6.23	PB50AT	3
DT 430 N...KOF	TP60/6.24	PB60	2
DD 89 N...K...K	DP20/6.25	PB20	15
ND 89 N...K	DP20/6.25	PB20	15
DD 98 N...K	DP20/6.25	PB20	15
DD 104 N...K	DP20/6.25	PB20	15
ND 104 N...K	DP20/6.25	PB20	15
◆ DD 140 N 16 S	DS34/6.25	SB34	8
DD 160 N...K	DP34/6.25	PB34	8
◆ DD160 N 16 S	DS34/6.25	SB34	8
DD 171 N...K	DP34/6.25	PB34	8
ND 171 N...K	DP34/6.25	PB34	8
DD 175 N...K	DP50/6.25	PB50	3
DD 231 N...K	DP50/6.25	PB50	3
DD 260 N...K	DP50/6.25	PB50	3
KD 260 N...K	DP50ND/6.26	PB50ND	3
DD 261 N...K	DP50/6.25	PB50AT	3
ND 261 N...K	DP50ND/6.26	PB50ND	3
DD 285 N...K	DP50/6.25	PB50	3
DD 350 N...K	DP50/6.25	PB50AT	3
ND 350 N...K	DP50ND/6.26	PB50ND	3
DD 380 N 16 AOF	DP50A/6.25	PB50AT	3
◆ DD 360 N 22 AOF	DP50A/6.25	PB50AT	3
DZ 435 N...K	DP50.1/6.25	PB50.1	3
DZ 540 N...K	DP50.1/6.25	PB50.1	3
DZ 600 N...K	DP50.1/6.25	PB50.1	3
DD 435 N...K	DP60/6.26	PB60	2
DD 540 N...K	DP60/6.26	PB60	2
DD 600 N...K	DP60/6.26	PB60	2

SCR
Diode Modules

Package Units

PowerBLOCK Modules

Type	Outline	Housing	Packing units
ND 600 N...K	DP60/6.26	PB60	2
DD 700 N...K	DP60/6.26	PB60	2
◆ DD 710 N 16 K	DP60A/6.26	PB60AT	2
DZ 950 N...K	DP70/6.26	PB70	1
DZ 1070 N...K	DP70/6.26	PB70	1
DD 46 S...K	DP20/6.25	PB20	15
DD 61 S...K	DP20/6.25	PB20	15
DD 81 S...K	DP20/6.25	PB20	15
DD 82 S...K	DP20/6.25	PB20	15
DD 230 S...K	DP50/6.25	PB50	3
DD 241 S...K	DP50/6.25	PB50	3
ND 241 S...K	DP50ND/6.26	PB50ND	3
DD 242 S...K	DP50/6.25	PB50	3
ND 242 S...K	DP50ND/6.26	PB50ND	3

◆ New type

Links

Application Notes, Product Briefs, Flyers and Brochures	Type	Redirects
Technical Information for Bipolar Semiconductors (english)	Application Note	http://www.infineon.com/technical-information-appnote
Technical Information for Bipolar Semiconductors (german)	Application Note	http://www.infineon.com/technical-information-appnote-german
IFBIP Company Brochure	Brochure	http://www.infineon.com/ifbip-company-brochure
IFBIP Web shop	Webpage	http://www.ifbip-shop.com
Thyristor and Diode Modules	Product Brief	http://www.infineon.com/thyristor-and-diodes-product-brief
Thyristor/Diode Modules in solder bond technology	Product Brief	http://www.infineon.com/solder-bond-modules-product-brief
Standard gate leads for PowerBLOCK modules	Product Information	http://www.infineon.com/gate-leads-for-powerblock-modules-product-information



Core Components for Soft Starters



Broadest portfolio of SCR for Soft Starters Applications

- Isolated SCR modules from 1.2 kV up to 3.6 kV
- SCR Discs from 1.2 kV to >6.5 kV
- Current capability from 100A to >3000A
- Robust designs for highest performance and highest reliability
- Global sales and distribution network
- Excellent service and support

For further information please visit our website.

Thyristor & Diode Presspacks



We offer a broad range of Press pack disc housings containing thyristor and diode pellets in a voltage range of 200V to 9500V and a current range of 56 A to 8400 A.

All discs are assembled in highly reliable, robust and hermetic sealed ceramic housings in order to avoid mechanical damages as well as almost any negative environmental influences as e.g. high humidity.

Beside the standard electrical triggered thyristor disc types for phase control applications and diode disc types for rectifier applications, we offer a range of discs as fast switching diodes, as well as soft and fast recovery freewheeling diodes for IGCT and IGBT switches.

As an extension, our product portfolio contains disc types as light triggered thyristors (LTT). These ceramic discs offer an easy way of triggering by using fiber optics to avoid insulation problems between load and trigger unit. Higher reliability thanks to less electronic components on high electric potential by using monolithic integrated protection functions (BoD and dv/dt protection). The power range covers blocking voltages from 5200V up to 8000V and current ratings from 550A up to 3500A.

Overview Phase Control Thyristors in Disc Housings

V_{DRM}

9500V				T600N									
8000V				T 533 N								T1503N T2563N	T2011N T2871N
7000V													T1081N T1201N T1851N T1651N
6500V				T571N	T1060N	T1620N							
5200V													T1551N T1451N T2351N T2161N
4400V				T731N									T4003N T4021N
4200V				T730N		T1800N							T3101N
3800V						T1930N							
3600V						T901N	T860N T930N						T2001N T1601N
2800V						T1220N							T4771N T4301N
2600V						T1590N	T460N T660N T740N						
2200V						T1960N	T700N						
1800V						T2180N	T1040N						
1600V						T3160N	T590N T720N T880N T830N T940N						
1400V							T680N						
600V						T2510N	T1410N						
						T3710N	T920N T1080N						
Contact Ø	23mm					30 mm	34/36 mm						100 mm
Case Ø	42 mm					48 mm	58 mm						150 mm
													172 mm



Phase Control Thyristors

up to 600 V												
Type	V_{DRM}, V_{RRM} [V] $V_{DSM} = V_{DRM}$ $V_{RSM} = V_{RRM} + 50 V$	I_{TSM} [kA] @10 ms, $T_{vj\ max}$	$\int i^2 dt$ [A ² s · 10 ³] @10 ms, $T_{vj\ max}$	V_T/I_T [V/kA] $T_{vj\ max}$	I_{TAVM} [A] @180 ° el sin $T_c = 85 °C$	V(TO) [V] @ $T_{vj\ max}$	rT [mΩ] @ $T_{vj\ max}$	$(di/dt)_{cr}$ [A/μs] @DIN IEC 747-6	tq [μs] typ.	R_{thjC} [K/kW] @180 ° el sin	$T_{vj\ max}$ [°C]	Outline / page
T 580 N06 TOF	600	5,5	151	1,63/1,5	568	1,00	0,400	200	200	62,0	140	T42.14K0/7.8
T 690 N06 TOF	600	6,7	225	1,76/2,0	694	0,80	0,440	200	200	51,0	140	T42.14K0/7.8
T 920 N06 TOF	600	12,0	720	1,65/2,5	925	1,00	0,230	300	150	39,0	140	T48.14K0/7.8
T 1080 N06 TOF	600	14,5	1050	1,81/3,5	1075	1,02	0,200	200	150	33,0	140	T48.14K0/7.8
T 1410 N06 TOF	600	20,0	2000	1,50/4,5	1490	1,00	0,100	120	200	27,0	140	T58.14K0/7.8
T 2510 N06 TOF VT	600	42,0	8820	1,22/6,0	2509	0,75	0,072	200	200	18,4	140	T75.26K0/7.9
T 3710 N06 TOF VT	600	60,0	18000	1,50/15,0	3710	0,75	0,048	200	200	12,5	140	T100.26K0/7.9

up to 1800 V												
Type	V_{DRM}, V_{RRM} [V] $V_{DSM} = V_{DRM}$ $V_{RSM} = V_{RRM} + 100 V$	I_{TSM} [kA] @10 ms, $T_{vj\ max}$	$\int i^2 dt$ [A ² s · 10 ³] @10 ms, $T_{vj\ max}$	V_T/I_T [V/kA] $T_{vj\ max}$	I_{TAVM} [A] @180 ° el sin $T_c = 85 °C$	V(TO) [V] @ $T_{vj\ max}$	rT [mΩ] @ $T_{vj\ max}$	$(di/dt)_{cr}$ [A/μs] @DIN IEC 747-6	tq [μs] typ.	R_{thjC} [K/kW] @180 ° el sin	$T_{vj\ max}$ [°C]	Outline / page
T 86 N16 BOF	1600	2,0	20	1,99/0,4	86	1,00	2,600	150	200	300	125	TSW27/7.7
T 130 N18 BOF	1800	3,0	45	1,96/0,6	130	1,08	1,530	150	180	200	125	TSW27/7.7
T 130 N16 EOF	1600	3,0	45	1,96/0,7	130	1,08	1,530	150	180	200	125	TFL36/7.7
T 160 N18 BOF	1800	3,4	58	1,96/0,6	160	1,08	1,530	150	200	150	125	TSW27/7.7
T 160 N18 EOF	1800	3,4	58	1,96/0,7	160	1,08	1,530	150	200	150	125	TFL36/7.7
T 221 N18 BOF	1800	5,7	163	1,74/0,8	221	1,10	0,750	150	200	120	125	TSW41/7.7
T 300 N18 TOF	1800	3,4	58	2,20/0,8	303	0,90	1,350	150	200	69	125	T42.14K0/7.8
T 345 N18 EOF	1800	6,9	238	1,56/1,0	345	0,80	0,700	150	250	80	125	TFL54/7.7
T 390 N16 TOF	1600	4,3	91	2,00/1,1	381	0,85	0,900	150	200	62	125	T42.14K0/7.8
T 430 N18 TOF	1800	4,6	106	2,07/1,2	433	0,85	0,900	150	250	51	125	T42.14K0/7.8
T 470 N16 TOF	1600	6,4	202	1,85/1,2	470	0,80	0,750	150	250	51	125	T42.14K0/7.8
T 420 N18 TOF	1800	6,4	205	2,10/1,5	424	0,90	0,750	120	220	56	125	T48.14K0/7.8
T 560 N18 TOF	1800	6,9	238	1,92/1,6	559	0,80	0,600	120	250	44	125	T48.14K0/7.8
T 590 N18 TOF	1800	8,0	320	2,15/2,4	588	0,80	0,500	200	250	45	125	T58.26K0/7.8
T 640 N18 TOF	1800	8,0	320	2,15/2,4	644	0,80	0,500	200	250	39	125	T48.14K0/7.8
T 680 N14 TOF	1400	9,5	451	1,75/2,0	681	0,80	0,420	200	250	39	125	T48.14K0/7.8
T 720 N18 TOF	1800	12,5	781	1,94/3,0	718	0,85	0,350	120	250	38	125	T58.26K0/7.8
T 830 N18 TOF	1800	12,5	781	1,94/3,0	844	0,85	0,300	120	250	30	125	T58.14K0/7.8
T 880 N18 TOF	1800	15,5	1200	1,95/3,6	879	0,85	0,270	200	250	32	125	T58.26K0/7.8
T 940 N18 TOF	1800	15,5	1200	1,95/3,6	959	0,85	0,270	200	250	28	125	T58.14K0/7.8
T 1190 N18 TOF VT	1800	22,5	2530	2,05/5,4	1190	0,90	0,190	200	240	23	125	T75.26K0/7.9
T 1500 N18 TOF VT	1800	33,5	5611	2,10/7,0	1500	0,90	0,150	200	240	18,4	125	T75.26K0/7.9
T 2180 N18 TOF VT	1800	36,0	6480	2,05/8,0	2180	0,90	0,106	200	250	12,5	125	T100.26K0/7.9
T 3160 N18 TOF VT	1800	57,0	16245	1,37/6,0	3160	0,85	0,082	200	250	8,5	125	T111.26K0/7.9

...VT -> VT-class printed on housing

Presspacks

Phase Control Thyristors

up to 3000 V												
Type	V_{DRM}, V_{RRM} [V] $V_{DSM} = V_{DRM}$ $V_{RSM} =$ $V_{RRM} + 100 V$	I_{TSM} [kA] @10 ms, $T_{vj\ max}$	$\int i^2 dt$ [A ² s · 10 ³] @10 ms, $T_{vj\ max}$	V_T/I_T [V/kA] $T_{vj\ max}$	I_{TAVM} [A] @180 ° el sin $T_c = 85 °C$	V(TO) [V] @ $T_{vj\ max}$	rT [mΩ] @ $T_{vj\ max}$	$(di/dt)_{cr}$ [A/μs] @DIN IEC 747-6	tq [μs] typ.	R_{thjC} [K/kW] @180 ° el sin	$T_{vj\ max}$ [°C]	Outline / page
T 360 N28 TOF	2800	4,5	101	2,88/1,1	360	1,10	1,600	60	350	44,0	125	T48.14K0/7.8
T 460 N26 TOF	2600	9,0	405	2,75/2,0	459	1,00	0,840	120	300	45,5	125	T58.26K0/7.8
T 660 N26 TOF	2600	11,5	660	2,53/2,85	659	1,00	0,500	150	300	33,0	125	T58.26K0/7.8
T 700 N22 TOF	2200	12,2	744	2,32/2,85	699	0,95	0,450	200	300	32,0	125	T58.26K0/7.8
T 740 N26 TOF	2600	11,5	660	2,53/2,85	745	1,00	0,500	150	300	28,0	125	T58.14K0/7.8
T 1040 N22 TOF VT	2200	18,5	1711	1,53/2,0	1039	0,90	0,300	200	300	23,1	125	T75.26K0/7.9
T 1220 N28 TOF VT	2800	22,5	2531	1,38/1,0	1220	1,00	0,275	150	350	18,4	125	T75.26K0/7.9
T 1330 N22 TOF VT	2200	23,0	2645	1,13/1,0	1329	0,90	0,234	200	300	18,4	125	T75.26K0/7.9
T 1590 N28 TOF VT	2800	28,0	3920	2,45/5,0	1590	1,10	0,237	150	400	12,5	125	T100.26K0/7.9
T 1960 N22 TOF VT	2200	35,0	6125	2,20/8,0	1960	0,90	0,150	200	300	12,5	125	T100.26K0/7.9
T 2160 N28 TOF VT	2800	40,0	8000	2,65/8,8	2400	1,05	0,154	150	400	8,5	125	T111.26K0/7.9
T 2480 N28 TOF VT	2800	43,5	9460	1,43/3,0	2480	0,95	0,154	200	400	8,5	125	T111.26K0/7.9
T 2810 N22 TOF VT	2200	50,0	12500	2,35/11,0	2810	0,90	0,112	200	300	8,5	125	T111.26K0/7.9
T 4301 N29 TOF VT	2900	91,0	41400	1,20/4,0	4300	0,77	0,107	300	250	5,4	125	T150.35K/7.10
T 4771 N29 TOF VT	2900	91,0	41400	1,20/4,0	4640	0,77	0,107	300	250	4,8	125	T150.26K/7.10



...VT → VT-class printed on housing

up to 4500 V												
Type	V_{DRM}, V_{RRM} [V] $V_{DSM} = V_{DRM}$ $V_{RSM} =$ $V_{RRM} + 100 V$	I_{TSM} [kA] @10 ms, $T_{vj\ max}$	$\int i^2 dt$ [A ² s · 10 ³] @10 ms, $T_{vj\ max}$	V_T/I_T [V/kA] $T_{vj\ max}$	I_{TAVM} [A] @180 ° el sin $T_c = 85 °C$	V(TO) [V] @ $T_{vj\ max}$	rT [mΩ] @ $T_{vj\ max}$	$(di/dt)_{cr}$ [A/μs] @DIN IEC 747-6	tq [μs] typ.	R_{thjC} [K/kW] @180 ° el sin	$T_{vj\ max}$ [°C]	Outline / page
T 730 N42 TOF VT	4200	15,8	1250	3,40/3,5	730	1,20	0,570	80	400	21,5	120	T75.26K0/7.9
T 731 N44 TOH	4400	16,0	1280	1,86/1,2	910	1,08	0,650	300	500	18,5	125	T76.26K/7.19
T 860 N36 TOF VT	3600	17,0	1445	3,18/3,8	860	1,08	0,500	80	400	21	125	T75.26K0/7.9
T 901 N36 TOF	3600	17,0	1445	1,75/1,2	950	1,16	0,494	300	300	18,5	125	T76.26K/7.19
T 930 N36 TOF VT	3600	17,5	1530	2,70/3,6	930	1,00	0,430	80	500	21,5	125	T75.26K0/7.9
T 1401 N42 TOH	4200	36,0	6480	1,95/2,0	1600	1,29	0,330	300	350	9,7	125	T120.35K/7.10
T 1971 N44 TOH	4400	36,0	6480	1,95/2,0	1730	1,29	0,330	300	350	8,6	125	T120.26K/7.9
T 1601 N36 TOF	3600	41,0	8400	1,50/2,0	1920	1,00	0,250	300	300	9,7	125	T120.35K/7.10
T 1800 N42 TOF	4200	41,0	8405	1,65/2,0	1800	0,85	0,400	150	900	8,5	125	T111.26K0/7.9
T 1930 N38 TOF VT	3800	37,0	6850	2,90/8,0	2180	1,08	0,200	150	450	8,5	125	T111.26K0/7.9
T 2001 N36 TOF	3600	41,0	8400	1,50/2,0	2060	1,00	0,250	300	300	8,7	125	T120.26K/7.9
T 3101 N42 TOH	4200	83,0	34000	1,6/4,0	3160	0,90	0,175	300	400	5,4	125	T150.35K/7.10
T 3401 N36 TOH	3600	87,0	37850	1,40/4,0	3800	0,82	0,145	300	300	5,4	125	T150.35K/7.10
T 3801 N36 TOH	3600	87,0	37850	1,40/4,0	4100	0,82	0,145	300	300	4,8	125	T150.26K/7.10

...VT → VT-class printed on housing

Phase Control Thyristors



up to 5500 V

Type	V_{DRM}, V_{RRM} [V] $V_{DSM} = V_{DRM}$ $V_{RSM} = V_{RRM} + 100 V$	I_{TSM} [kA] @10 ms, $T_{vj\ max}$	$\int i^2 dt$ [A ² s · 10 ³] @10 ms, $T_{vj\ max}$	V_T/I_T [V/kA] $T_{vj\ max}$	I_{TAVM} [A] @180° el sin $T_c = 85\ ^\circ C$	$V(TO)$ [V] @ $T_{vj\ max}$	rT [mΩ] @ $T_{vj\ max}$	$(di/dt)_{cr}$ [A/μs] @DIN IEC 747-6	tq [μs] typ.	R_{thJC} [K/kW] @180° el sin	$T_{vj\ max}$ [°C]	Outline / page
T 1451 N52 TOH	5200	43,0	9250	1,70/2,0	1690	0,92	0,370	300	450	9,7	125	T120.35K/7.10
T 1551 N52 TOH	5200	43,0	9250	1,70/2,0	1830	0,92	0,370	300	450	8,6	125	T120.26K/7.9
T 2161 N52 TOH	5200	54,0	14600	1,85/3,0	2170	0,81	0,360	300	450	7,5	125	T120.35K/7.10
T 2351 N52 TOH	5200	54,0	14600	1,85/3,0	2360	0,81	0,360	300	450	6,5	125	T120.26K/7.9
T 2851 N52 TOH	5200	79,0	31000	1,70/4,0	3000	0,77	0,235	300	600	5,4	125	T150.35K/7.10
T 3441 N52 TOH	5200	79,0	31000	1,70/4,0	3200	0,77	0,235	300	600	4,8	125	T150.26K/7.10
T 4021 N53 TOH	5350	100,0	50000	1,80/6,0	3920	0,92	0,142	300	550	4,45	125	T172.26K/7.10

...VT → VT-class printed on housing



up to 10000 V

Type	V_{DRM}, V_{RRM} [V] $V_{DSM} = V_{DRM}$ $V_{RSM} = V_{RRM} + 100 V$	I_{TSM} [kA] @10 ms, $T_{vj\ max}$	$\int i^2 dt$ [A ² s · 10 ³] @10 ms, $T_{vj\ max}$	V_T/I_T [V/kA] $T_{vj\ max}$	I_{TAVM} [A] @180° el sin $T_c = 85\ ^\circ C$	$V(TO)$ [V] @ $T_{vj\ max}$	rT [mΩ] @ $T_{vj\ max}$	$(di/dt)_{cr}$ [A/μs] @DIN IEC 747-6	tq [μs] typ.	R_{thJC} [K/kW] @180° el sin	$T_{vj\ max}$ [°C]	Outline / page
T 281 N65 TOF	6500	4,8	115	2,75/0,5	280	1,35	2,800	150	1000	43,0	125	T58.26K0/7.8
T 571 N65 TOF	6500	9,4	442	2,75/1,0	540	1,35	1,400	150	1000	23,0	125	T75.26K0/7.9
T 1060 N65 TOF	6500	22,5	2530	3,5/3,0	1050	1,35	0,720	150	1000	11,8	125	T100.26K0/7.9
T 1620 N65 TOF	6500	32,0	5120	3,3/4,5	1610	1,35	0,430	150	1000	8,1	125	T111.26K0/7.9
T 1081 N70 TOH	7000	34,0	5780	2,7/2,0	1330	1,18	0,759	300	600	8,6	125	T120.26K/7.9
T 1201 N70 TOH	7000	34,0	5780	2,7/2,0	1230	1,18	0,759	300	600	9,7	125	T120.35K/7.10
T 1651 N70 TOH	7000	48,0	11500	2,65/3,0	1685	1,22	0,490	300	600	7,5	125	T120.35K/7.10
T 1851 N70 TOH	7000	48,0	11500	2,65/3,0	1850	1,22	0,490	300	600	6,5	125	T120.26K/7.9
T 1901 N80 TOH	8000	65,0	21100	3,0/4,0	2130	1,24	0,440	300	550	5,4	125	T150.35K/7.10
T 2251 N80 TOH	8000	65,0	21100	3,0/4,0	2280	1,24	0,440	300	550	4,8	125	T150.26K/7.10
T 2871 N80 TOH	8000	90,0	40500	2,95/5,0	2680	1,27	0,336	300	550	4,5	125	T172.26K/7.10
◆ T 3011 N80 TOH	8000	90,0	43250	2,95/5,0	2800	1,27	0,336	300	550	4,0	125	T172.26K/7.10
◆ T 600 N95 TOH	9500	12,8	820	2,8/1,0	570	1,18	1,620	100	900	20,5	125	T75.26K0/7.9

◆ New type

Light Triggered Thyristors

Type	V_{BO} [V]	V_{DRM}, V_{RRM} [V] $V_{DSM} = V_{DRM}$ $V_{RSM} = V_{RRM} + 100 V$	I_{TSM} [kA] @10ms, $T_{vj\ max}$	$\int i^2 dt$ [A ² s · 10 ³] @10 ms, $T_{vj\ max}$	V_T/I_T [V/kA] @ $T_{vj\ max}$	I_{TAVM} [A/°C] @180° el sin $T_c = 85\ ^\circ C$	$V(TO)$ [V] @ $T_{vj\ max}$	rT [mΩ] @ $T_{vj\ max}$	$(di/dt)_{cr}$ [A/μs] @DIN IEC 747-6	tq [μs] typ.	R_{thJC} [K/kW] @180° el sin	$T_{vj\ max}$ [°C]	Outline / page
T 533 N80 TOH	6500	8000	11,2	672	2,80/1,0	535	1,31	1,500	300	800	20	120	T76.35L/7.10
T 1503 N80 TOH	7500	8000	55	15125	3,00/4,0	1770	1,24	0,440	300	550	6,3	120	T150.40L/7.11
T 2563 N80 TOH	7500	8000	90	40500	2,95/5,0	2520	1,28	0,278	300	550	4,8	120	T172.40L/7.11
T 4003 N52 TOH	5200	5200	100	50000	1,80/5,0	3480	0,92	0,142	300	500	4,8	120	T172.40L/7.11

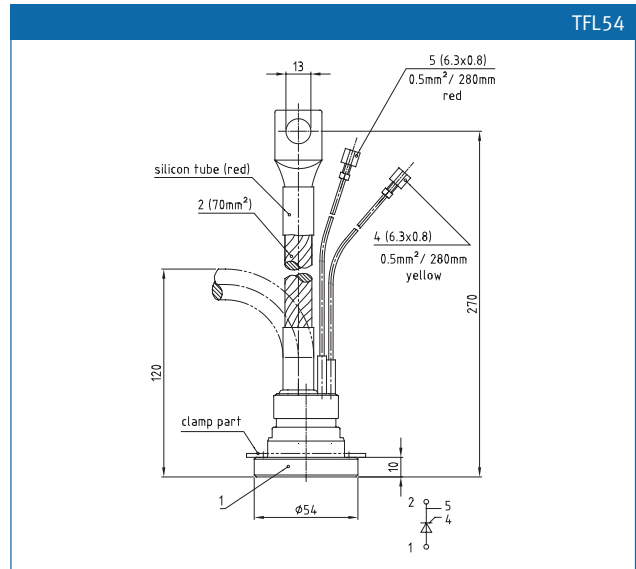
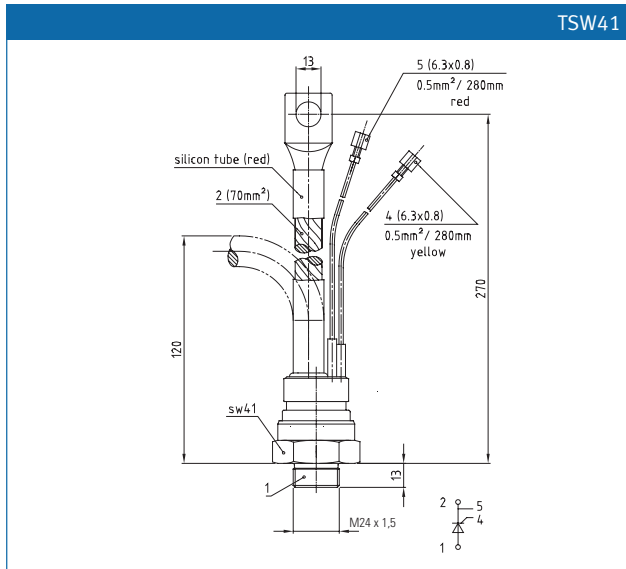
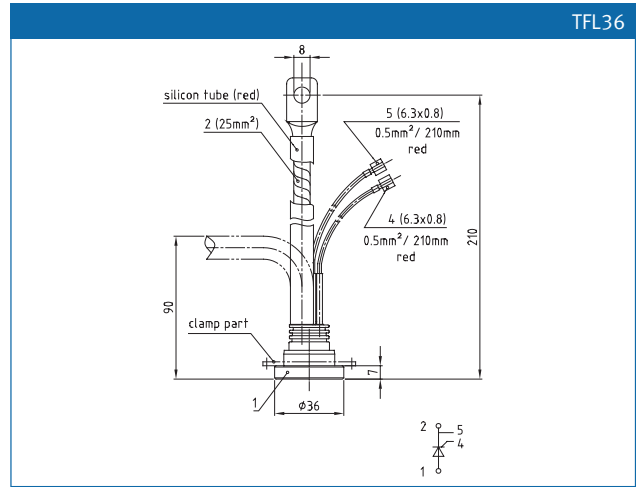
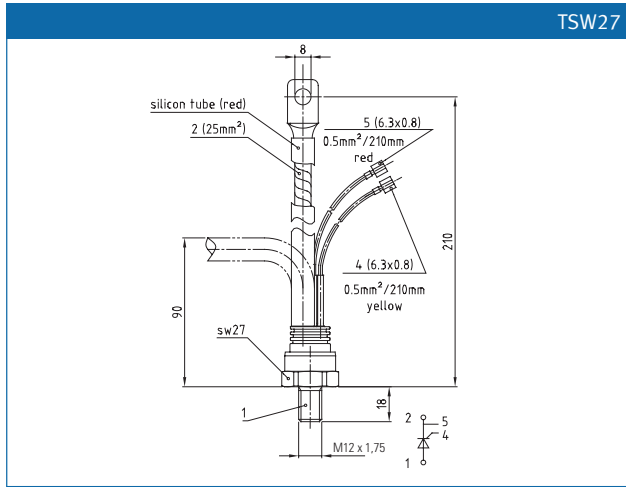
Presspacks

Pulsed Power Applications

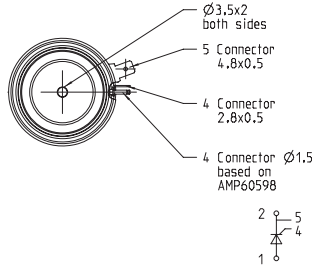
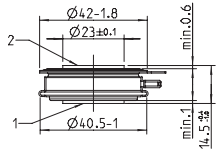


Type	V_{BO} [V]	V_{RRM} [V]	I_{TSM} [kA] @10ms T_{vjmax}	$V_{T(F)}/I_{T(F)}$ [V/kA] @ T_{vjmax}	$di/dt_{cr(on)}$ [A/ μ s] @single pulse	$di/dt_{cr(off)}$ [A/ μ s] @single pulse	R_{thJC} [K/kW] @ 180° el sin	$T_{vj max}$ [°C]	Outline / page
T 4003 NH52TOH	5200	5200	100	1,80/5,0	5000		4,5	120	T172.40L/7.11
T 1503 NH80TOH	7500	7500...8000	55	3,00/4,0	5000		6,0	120	T150.40L/7.11
T 2563 NH80TOH	7500	7500...8000	90	2,95/5,0	5000		4,5	120	T172.40L/7.11
D 2601 NH...TOH			22	5,5/4,0		7500	7,5	140	D120.26K/7.24

Outlines



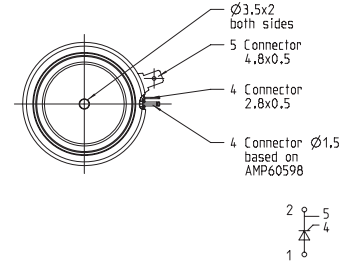
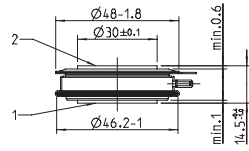
T42.14K0



strike distance: 5mm
creepage distance: 6mm

overall height based
on contact pressure

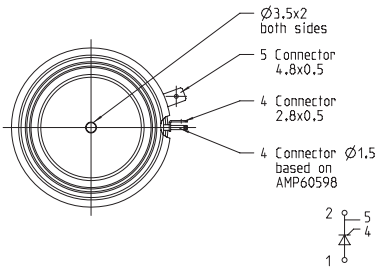
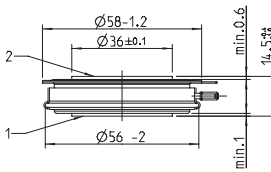
T48.14K0



strike distance: 5.0mm
creepage distance: 6.0mm

overall height based
on contact pressure

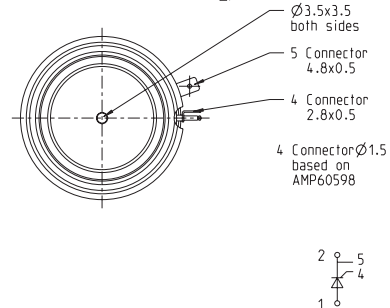
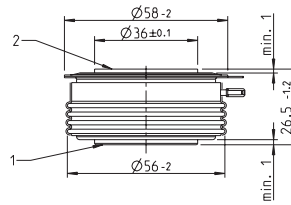
T58.14K0



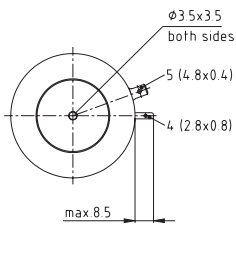
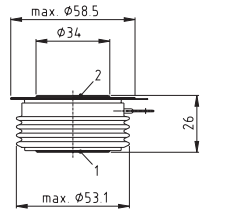
strike distance: 4mm
creepage distance: 5.0mm

overall height based
on contact pressure

T58.26K0

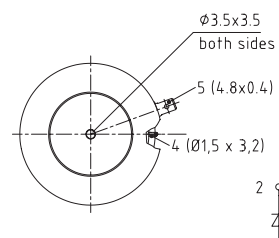
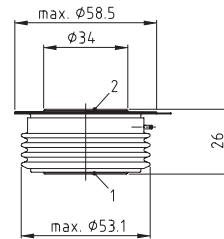


T58.26K

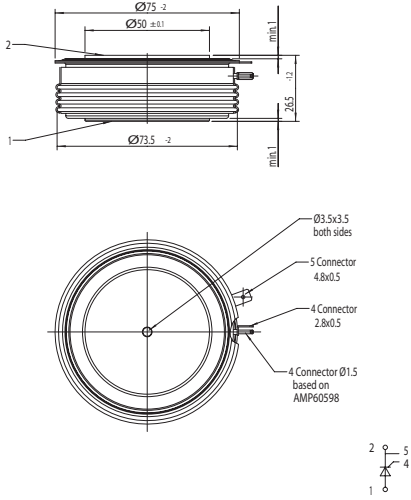


max 85

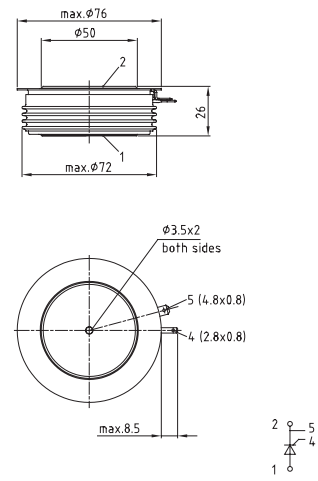
T58.26K1



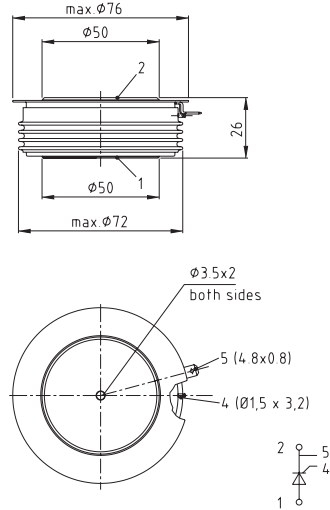
T75.26K0



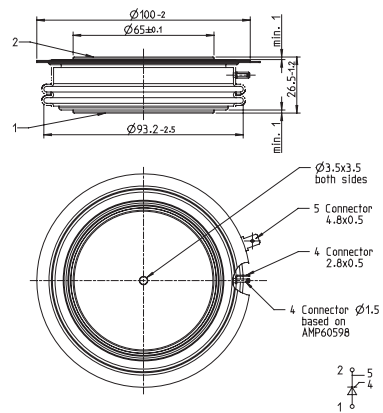
T76.26K



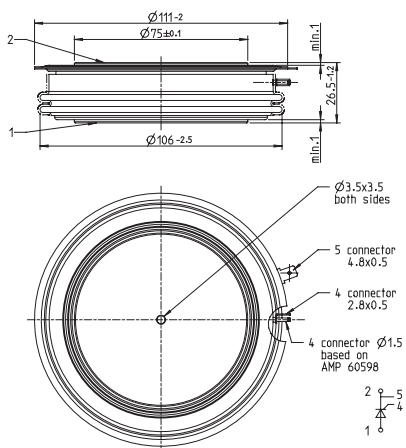
T75.26K1



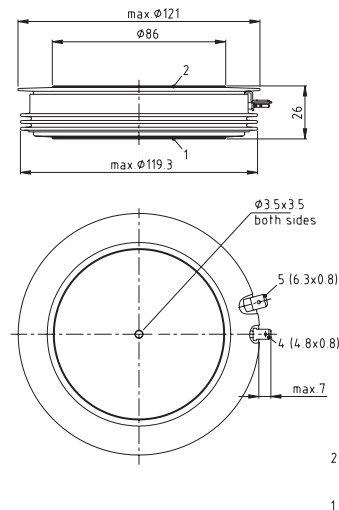
T100.26K0



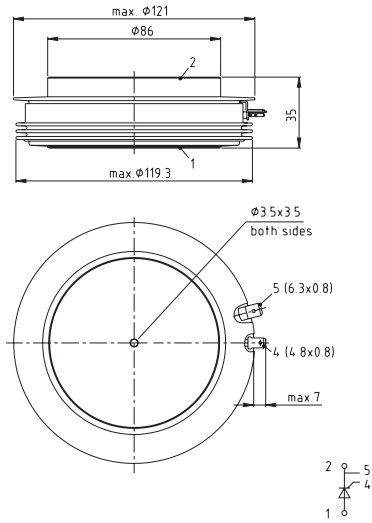
T111.26K0



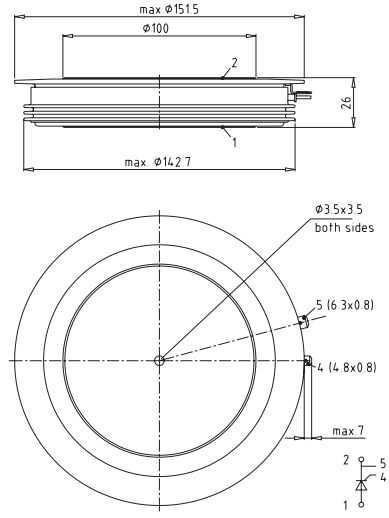
T120.26K



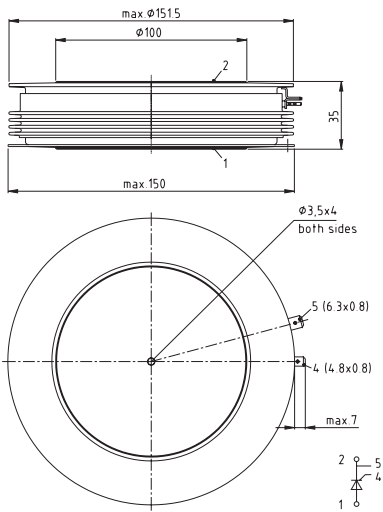
T120.35K



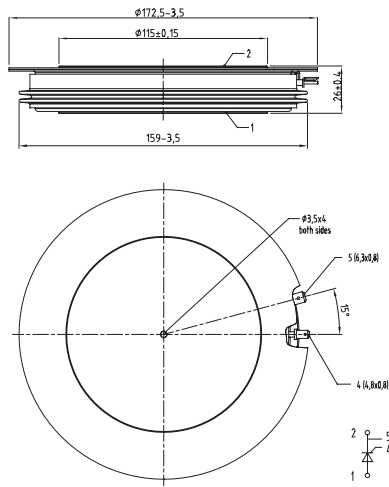
T150.26K



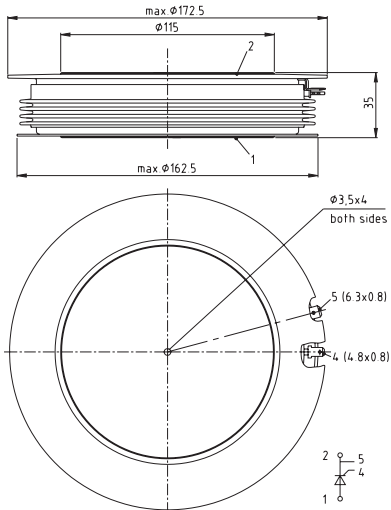
T150.35K



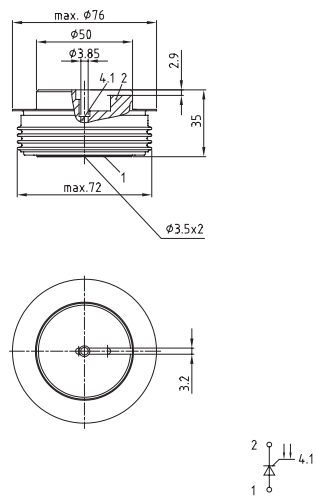
T172.26K



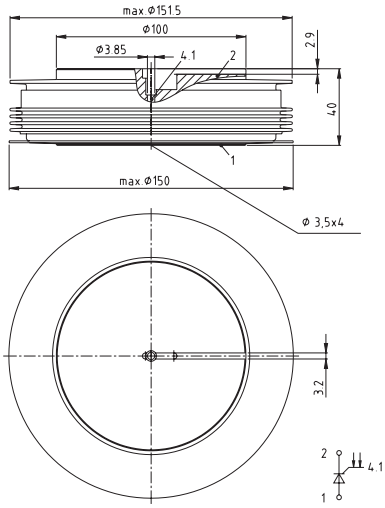
T172.35K



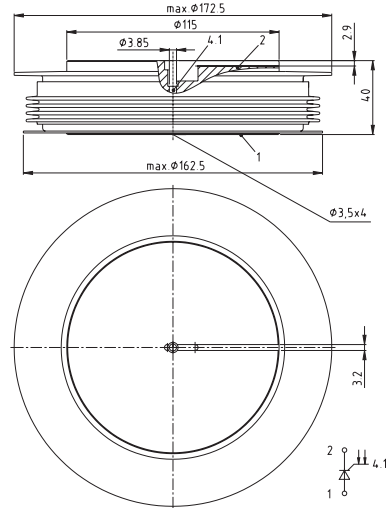
T76.35L



T150.40L



T172.40L



Clamping Forces for Thyristor Discs

Typ	Recommended Clamping force range [kN]	Outline
T 281 N65 TOF	7,0...12,0	T58.26K
T 300 N...TOF	2,5...5,0	T42.14K0
T 360 N...TOF	5,0...10,0	T48.14K0
T 390 N...TOF	3,0...6,0	T42.14K0
T 420 N...TOF	5,0...10,0	T48.14K0
T 430 N...TOF	4,0...8,0	T42.14K0
T 460 N...TOF	7,5...17,5	T58.26K0
T 470 N...TOF	4,0...8,0	T42.14K0
T 533 N...TOH	15,0...24,0	T76.35L
T 560 N...TOF	5,0...10,0	T48.14K0
T 571 N65 TOF	15,0...24,0	T75.26K
T 580 N...TOF	3,0...6,0	T42.14K0
T 590 N...TOF	6,0...12,0	T58.26K0
T 600 N...TOF	15,0...24,0	T75.26K0
T 640 N...TOF	6,0...12,0	T48.14K0
T 660 N...TOF	10,5...21,0	T58.26K0
T 680 N...TOF	6,0...12,0	T48.14K0
T 690 N...TOF	4,0...8,0	T42.14K0
T 700 N...TOF	10,5...21,0	T58.26K0
T 720 N...TOF	9,0...18,0	T58.26K0
T 730 N...TOF	18,0...43,0	T75.26K0
T 731 N...TOH	15,0...24,0	T76.26K
T 740 N...TOF	10,5...21,0	T58.14K0
T 830 N...TOF	9,0...18,0	T58.14K0
T 860 N...TOF	20,0...45,0	T75.26K0
T 880 N...TOF	10,5...21,0	T58.26K0
T 901 N...TOF	15,0...24,0	T76.26K
T 920 N...TOF	5,5...8,0	T48.14K0
T 930 N...TOF	20,0...45,0	T75.26K0
T 940 N...TOF	10,5...21,0	T58.14K0
T 1040 N...TOF	16,0...32,0	T75.26K0
T 1060 N...TOF	30,0...50,0	T100.26K0
T 1080 N...TOH	8,0...16,0	T48.14K0
T 1081 N...TOH	36...52,0	T120.26K
T 1190 N...TOF	16,0...32,0	T75.26K0
T 1201 N...TOH	36,0...52,0	T120.35K
T 1220 N...TOF	20,0...45,0	T75.26K0
T 1330 N...TOF	20,0...45,0	T75.26K0
T 1401 N...TOH	36,0...52,0	T120.35K
T 1410 N...TOF	12,0...24,0	T58.14K0
T 1451 N...TOH	36,0...52,0	T120.35K
T 1500 N...TOF	24,0...56,0	T75.26K0
T 1503 N...TOH	63,0...91,0	T150.40L
T 1503 NH...TOH	63,0...91,0	T150.40L
T 1551 N...TOH	36,0...52,0	T120.26K
T 1590 N...TOF	30,0...65,0	T100.26K0
T 1601 N...TOF	36,0...52,0	T120.35K
T 1620 N...TOF	42,0...65,0	T111.26K0
T 1651 N...TOH	45,0...65,0	T120.35K
T 1800 N...TOF	42,0...95,0	T111.26K0
T 1851 N...TOH	45,0...65,0	T120.26K
T 1901 N...TOH	63,0...91,0	T150.35K
T 1930 N...TOF	42,0...95,0	T111.26K0
T 1960 N...TOF	30,0...65,0	T100.26K0
T 1971 N...TOH	36,0...52,0	T120.26K
T 2001 N...TOF	36,0...52,0	T120.26K

Typ	Recommended Clamping force range [kN]	Outline
T 2160 N...TOF	42,0...95,0	T111.26K0
T 2161 N...TOH	45,0...65,0	T120.35K
T 2180 N...TOF	30,0...65,0	T100.26K0
T 2251 N...TOH	63,0...91,0	T150.26K
T 2351 N...TOH	45,0...65,0	T120.26K
T 2480 N...TOF	42,0...95,0	T111.26K0
T 2510 N...TOF	24,0...56,0	T75.26K0
T 2563 N...TOH	90,0...130,0	T172.40L
T 2563 NH...TOH	90,0...130,0	T172.40L
T 2810 N...TOF	42,0...95,0	T111.26K0
T 2851 N...TOH	63,0...91,0	T150.35K
T 2871 N...TOH	90,0...130,0	T172.35K
T 3101 N...TOH	63,0...91,0	T150.35K
T 3160 N...TOF	42,0...95,0	T111.26K0
T 3011 N...TOH	90,0...130,0	T172.26K
T 3401 N...TOH	63,0...91,0	T150.35K
T 3441 N...TOH	63,0...91,0	T150.26K
T 3710 N...TOF	30,0...65,0	T100.26K0
T 3801 N...TOH	63,0...91,0	T150.26K
T 4003 N...TOH	90,0...130,0	T172.40L
T 4003 NH...TOH	90,0...130,0	T172.40L
T 4021 N...TOH	90,0...130,0	T172.35K
T 4301 N...TOF	63,0...91,0	T150.35K
T 4771 N...TOF	63,0...91,0	T150.26K

Package Units Thyristor Discs

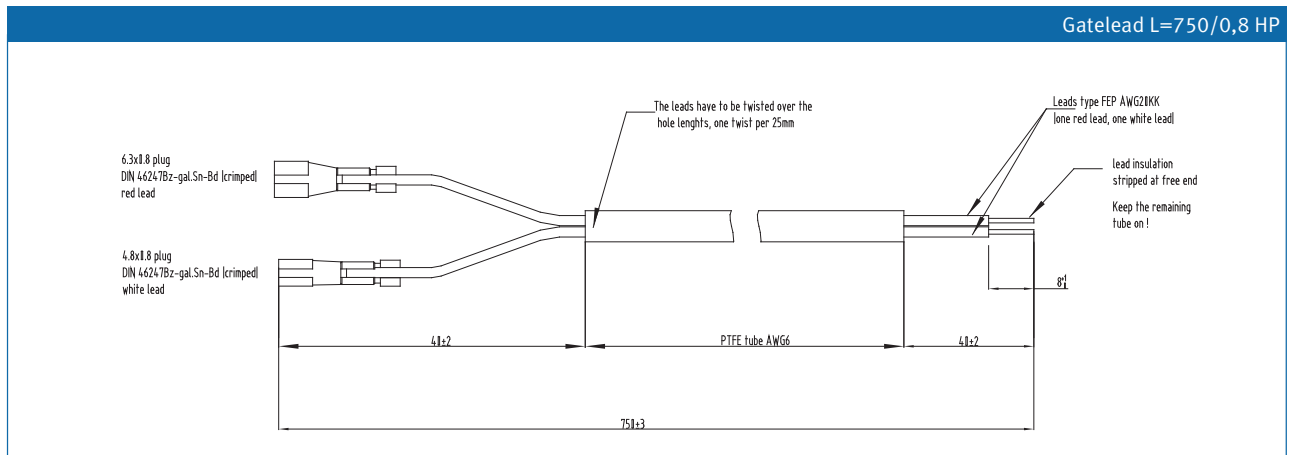
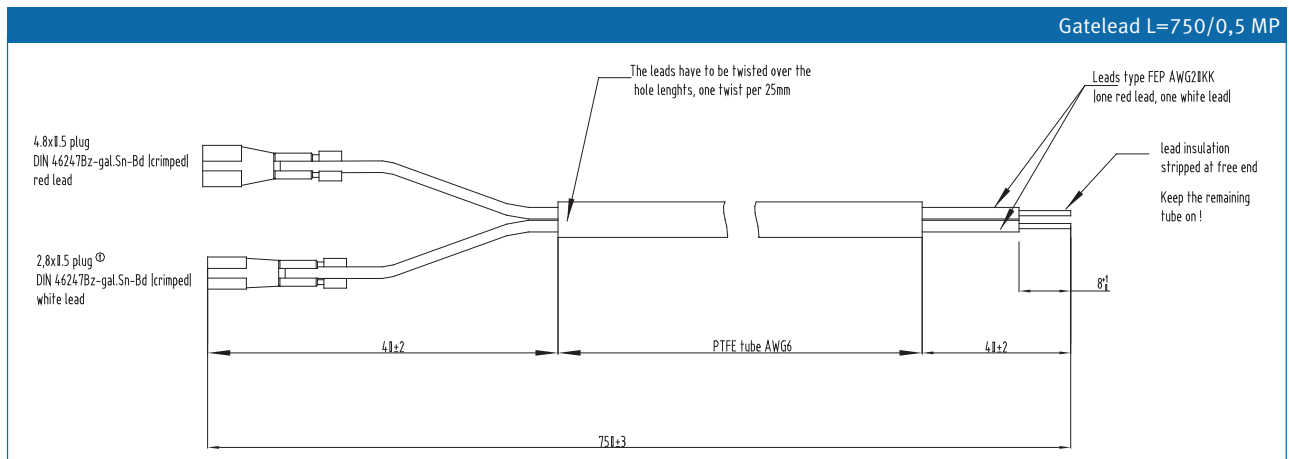
Type	Outline	Packing units
T 280 N...TOF	T58.26K0	3
T 300 N...TOF	T42.14K0	12
T 360 N...TOF	T48.14K0	10
T 390 N...TOF	T42.14K0	12
T 420 N...TOF	T48.14K0	10
T 430 N...TOF	T42.14K0	12
T 460 N...TOF	T58.26K0	3
T 470 N...TOF	T42.14K0	12
T 533 N...TOH	T76.35L	3
T 560 N...TOF	T48.14K0	10
T 570 N...TOF	T75.26K0	2
T 580 N...TOF	T42.14K0	12
T 590 N...TOF	T58.26K0	3
T 600 N...TOF	T75.26K0	2
T 640 N...TOF	T48.14K0	10
T 660 N...TOF	T58.26K0	3
T 680 N...TOF	T48.14K0	10
T 690 N...TOF	T42.14K0	12
T 700 N...TOF	T58.26K0	3
T 720 N...TOF	T58.26K0	3
T 730 N...TOF	T75.26K0	2
T 731 N...TOH	T76.26K	2
T 740 N...TOF	T58.14K0	6
T 830 N...TOF	T58.14K0	6
T 860 N...TOF	T75.26K0	2
T 880 N...TOF	T58.26K0	3
T 901 N...TOF	T76.26K	2
T 920 N...TOF	T48.14K0	10
T 930 N...TOF	T75.26K0	2
T 940 N...TOF	T58.14K0	6
T 1040 N...TOF	T75.26K0	2
T 1060 N...TOF	T100.26K0	3
T 1080 N...TOF	T48.14K0	10
T 1081 N...TOH	T120.26K	2
T 1190 N...TOF	T75.26K0	2
T 1201 N...TOH	T120.35K	1
T 1220 N...TOF	T75.26K0	2
T 1330 N...TOF	T75.26K0	2
T 1401 N...TOH	T120.35K	1
T 1410 N...TOF	T58.14K0	6
T 1451 N...TOH	T120.35K	1
T 1500 N...TOF	T75.26K0	2
T 1503 N...TOH	T150.40L	1
T 1503 NH...TOH	T150.40L	1
T 1551 N...TOH	T120.26K	2
T 1590 N...TOF	T100.26K0	3
T 1601 N...TOF	T120.35K	1
T 1620 N...TOF	T111.26K0	2
T 1651 N...TOH	T120.35K	1
T 1800 N...TOF	T111.26K0	2
T 1851 N...TOH	T120.26K	2
T 1901 N...TOH	T150.35K	1
T 1930 N...TOF	T111.26K0	2
T 1960 N...TOF	T100.26K0	3
T 1971 N...TOH	T120.26K	2
T 2001 N...TOF	T120.26K	2

Type	Outline	Packing units
T 2160 N...TOF	T111.26K0	2
T 2161 N...TOH	T120.35K	1
T 2180 N...TOF	T100.26K0	3
T 2251 N...TOH	T150.26K	1
T 2351 N...TOH	T120.26K	2
T 2480 N...TOF	T111.26K0	2
T 2510 N...TOF	T75.26K0	2
T 2563 N...TOH	T172.40L	1
T 2563 NH...TOH	T172.40L	1
T 2810 N...TOF	T111.26K0	2
T 2851 N...TOH	T150.35K	1
T 2871 N...TOH	T172.35K	1
T 3101 N...TOH	T150.35K	1
T 3160 N...TOF	T111.26K0	2
T 3011 N...TOH	T172.26K	1
T 3401 N...TOF	T150.35K	1
T 3441 N...TOH	T150.26K	1
T 3710 N...TOF	T100.26K0	3
T 3801 N...TOF	T150.26K	1
T 4003 N...TOH	T172.40L	1
T 4003 NH...TOH	T172.40L	1
T 4021 N...TOH	T172.35K	1
T 4301 N...TOH	T150.35K	1
T 4771 N...TOF	T150.26K	1

Standard Gate Leads for Disc Type Devices

Leads and gate leads must be ordered separately

Disc outline/page	Type	Color	Connector [mm]	Length [mm]	Ordering Code
T42.14K0/7.8	GATELEAD L=750/0,5 MP	red/white	4,8x0,5/2,8x0,5	750	SP000983448
T48.14K0/7.8					
T58.14K0/7.8					
T58.26K0/7.8					
T75.26K0/7.9					
T100.26K0/7.9					
T111.26K0/7.9	GATELEAD L=750/0,8 HP	red/white	6,3x0,8/4,8x0,8	750	SP000983442
T120.26K/7.9					
T120.35K/7.10					
T150.26K/7.10					
T150.35K/7.10					
T172.26K/7.10					



Laser Diode and Light Fiber for light triggered Thyristors (LTT)


laser diodes and light fibers must be ordered separately


for type	device		laser diode		light fiber	
	Outline/page	Salesname	Ordering Code	Salesname	length [mm]	Ordering Code
T533N	T76.35L/7.10	LASERDI SPL-PL90 A	SP000091118	LWL R10LR50L3000 A	3000	SP000091119
T1503N(H)	T150.40L/7.11	LASERDI SPL-PL90 A	SP000091118	LWL R10 LR87-L3000	3000	SP000091117
T2563N(H)	T172.40L/7.11	LASERDI SPL-PL90 A	SP000091118	LWL R10 LR87-L3000	3000	SP000091117
T4003N(H)	T172.40L/7.11	LASERDI SPL-PL90 A	SP000091118	LWL R10 LR87-L3000	3000	SP000091117


Overview Rectifier in Disc Housings

V_{RRM}													
9000 V			D471N										
6800 V			D711N		D1481N								
5000 V			D740N		D1800N								
4800 V													D6001N
4200 V													
3800 V													
3600 V													
2800 V													
2600 V													
2400 V													
2200 V													
2000 V													
1800 V													
1400 V													
600 V													
Contact \varnothing	23mm	30 mm	34/36 mm	50 mm	65 mm	75 mm	86 mm	100 mm	111 mm	120 mm	150 mm		
Case \varnothing	42 mm	48mm	58 mm	75 mm	100 mm	111 mm	120 mm	150 mm					

Rectifier Diodes

up to 800 V									
Type	V_{RRM} [V] $V_{DSM} = V_{DRM}$ $V_{RSM} =$ $V_{RRM} + 50 V$	I_{FSM} [kA] @10 ms, $T_{vj\ max}$	$\int i^2 dt$ [A ² s · 10 ³] @ 10 ms $T_{vj\ max}$	I_{FAVM}/T_c [A/°C] @ 180° el sin	$V_{(TO)}$ [V] @ $T_{vj\ max}$	r_T [mΩ] @ $T_{vj\ max}$	R_{thJC} [K/kW] @ 180° el sin	$T_{vj\ max}$ [°C]	Outline / page
									
D 255 N 08 B	800	4,6	106	255/110	0,65	0,85	230,0	180	DSW27/7.22
D 255 K 08 B	800	4,0	80	255/75	0,65	0,85	345,0	180	DSW27/7.22
D 650 N 08 T	800	5,1	130	651/100	0,70	0,51	81,0	180	D42.14K0/7.23
D 970 N 08 T	800	8,8	387	972/100	0,70	0,31	57,0	180	D42.14K0/7.23
D 2450 N 06 T	600	28,5	4061	2452/100	0,70	0,10	25,3	180	D58.14K0/7.23
D 5810 N 06 T VF	600	70,0	24500	5800/58	0,70	0,04	17,0	180	D75.26K0/7.24
D 8320 N 06 T VF	600	95,0	45000	8320/56	0,70	0,02	12,5	180	D100.26K0/7.24



up to 1800 V									
Type	V_{RRM} [V] $V_{DSM} = V_{DRM}$ $V_{RSM} =$ $V_{RRM} + 50 V$	I_{FSM} [kA] @10 ms, $T_{vj\ max}$	$\int i^2 dt$ [A ² s · 10 ³] @ 10 ms $T_{vj\ max}$	I_{FAVM}/T_c [A/°C] @ 180° el sin	$V_{(TO)}$ [V] @ $T_{vj\ max}$	r_T [mΩ] @ $T_{vj\ max}$	R_{thJC} [K/kW] @ 180° el sin	$T_{vj\ max}$ [°C]	Outline / page
									
D 452 N 18 E VF	1800	10,8	583	450/130	0,77	0,48	85,5	180	DFL54/7.22
D 452 K 18 E	1800	10,8	583	450/130	0,77	0,48	85,5	180	DFL54/7.22
D 1230 N 18 T	1800	11,8	696	1234/100	0,81	0,28	39,0	180	D48.14K0/7.23
D 1050 N 18 T	1800	18,5	1710	1050/130	0,81	0,17	38,0	180	D58.26K0/7.23

up to 3000 V									
Type	V_{RRM} [V] $V_{DSM} = V_{DRM}$ $V_{RSM} =$ $V_{RRM} + 50 V$	I_{FSM} [kA] @10 ms, $T_{vj\ max}$	$\int i^2 dt$ [A ² s · 10 ³] @ 10 ms $T_{vj\ max}$	I_{FAVM}/T_c [A/°C] @ 180° el sin	$V_{(TO)}$ [V] @ $T_{vj\ max}$	r_T [mΩ] @ $T_{vj\ max}$	R_{thJC} [K/kW] @ 180° el sin	$T_{vj\ max}$ [°C]	Outline / page
									
D 121 N 20 B	2000	2,6	33,8	120/130	0,72	1,90	324,0	180	DSW27/7.22
D 121 K 20 B	2000	2,4	28,8	120/113	0,72	1,90	434,0	180	DSW27/7.22
D 251 N 20 B	2000	5,3	140,5	250/130	0,80	0,85	151,0	180	DSW27/7.22
D 251 N 20 E	2000	5,3	140,5	250/130	0,80	0,85	151,0	180	DFL36/7.22
D 251 K 20 B	2000	4,7	110,5	250/102	0,80	0,85	236,0	180	DSW27/7.22
D 251 K 20 E	2000	4,7	110,5	250/102	0,80	0,85	236,0	180	DFL36/7.22
D 400 N 20 B	2000	9,8	480,2	400/130	0,70	0,62	95,0	180	DSW41/7.22
D 400 K 16 B	1600	9,8	480,2	400/130	0,70	0,62	95,0	180	DSW41/7.22
D 770 N 20 T	2000	6,0	180,0	767/100	0,81	0,54	57,0	180	D42.14K0/7.23
D 820 N 28 T	2800	9,0	405,0	818/100	0,83	0,52	39,0	160	D42.14K0/7.23
D 950 N 22 T	2200	10,3	525,0	950/100	0,70	0,50	45,0	180	D42.14K0/7.23
D 1030 N 26 T	2600	14,5	1051,0	1030/100	0,82	0,28	38,0	160	D48.14K0/7.23
D 2200 N 24 T VF	2400	35,0	6125,0	2200/100	0,83	0,15	17,0	160	D75.26K0/7.24
D 2520 N 22 T VF	2200	35,0	6125,0	2520/100	0,73	0,10	22,0	175	D75.26K0/7.24
D 2650 N 24 T	2400	33,5	5611,0	2650/100	0,82	0,15	16,9	180	D75.26K0/7.24
D 4201 N 22 T	2200	73,5	27000,0	4830/100	0,67	0,08	9,2	160	D120.26K/7.24
D 4810 N 28 T VF	2800	60,0	18000,0	4710/100	0,83	0,06	8,0	160	D111.26K0/7.24



...VF -> VF-class printed on housing

Presspacks

Rectifier Diodes


up to 5000 V  

Type	V_{RRM} [V] $V_{DSM} = V_{DRM}$ $V_{RSM} =$ $V_{RRM} + 50V$	I_{FSM} [kA] @10 ms, $T_{vj\ max}$	$\int i^2 dt$ [A ² s · 10 ³] @ 10 ms $T_{vj\ max}$	I_{FAVM}/T_c [A/°C] @ 180° el sin	$V_{(TO)}$ [V] @ $T_{vj\ max}$	r_T [mΩ] @ $T_{vj\ max}$	R_{thjC} [K/kW] @ 180° el sin	$T_{vj\ max}$ [°C]	Outline / page
D 270 N 36 T	3600	4,0	80	270/100	0,86	1,54	98,0	150	D58.26K0/7.23
D 475 N 36 B	3600	10,9	594	475/100	0,77	0,61	85,0	160	DSW41.1/7.22
D 740 N 48 T	4800	11,0	605	750/100	0,85	0,65	39,0	160	D58.26K0/7.23
D 850 N 40 T	4000	12,8	819	850/100	0,84	0,49	38,0	160	D58.26K0/7.23
D 1800 N 48 T	4800	27,5	3781	1800/100	0,85	0,25	16,9	160	D75.26K0/7.24
D 3501 N 42 T	4200	56,0	15700	3690/100	0,73	0,13	9,2	160	D120.35K/7.24
D 5201 N 50 T	5000	110,0	60500	5170/100	0,63	0,09	5,8	160	D150.35K/7.25
D 6001 N 50 T	5000	110,0	60500	6070/100	0,80	0,09	4,6	160	D150.26K/7.25

up to 10000 V  

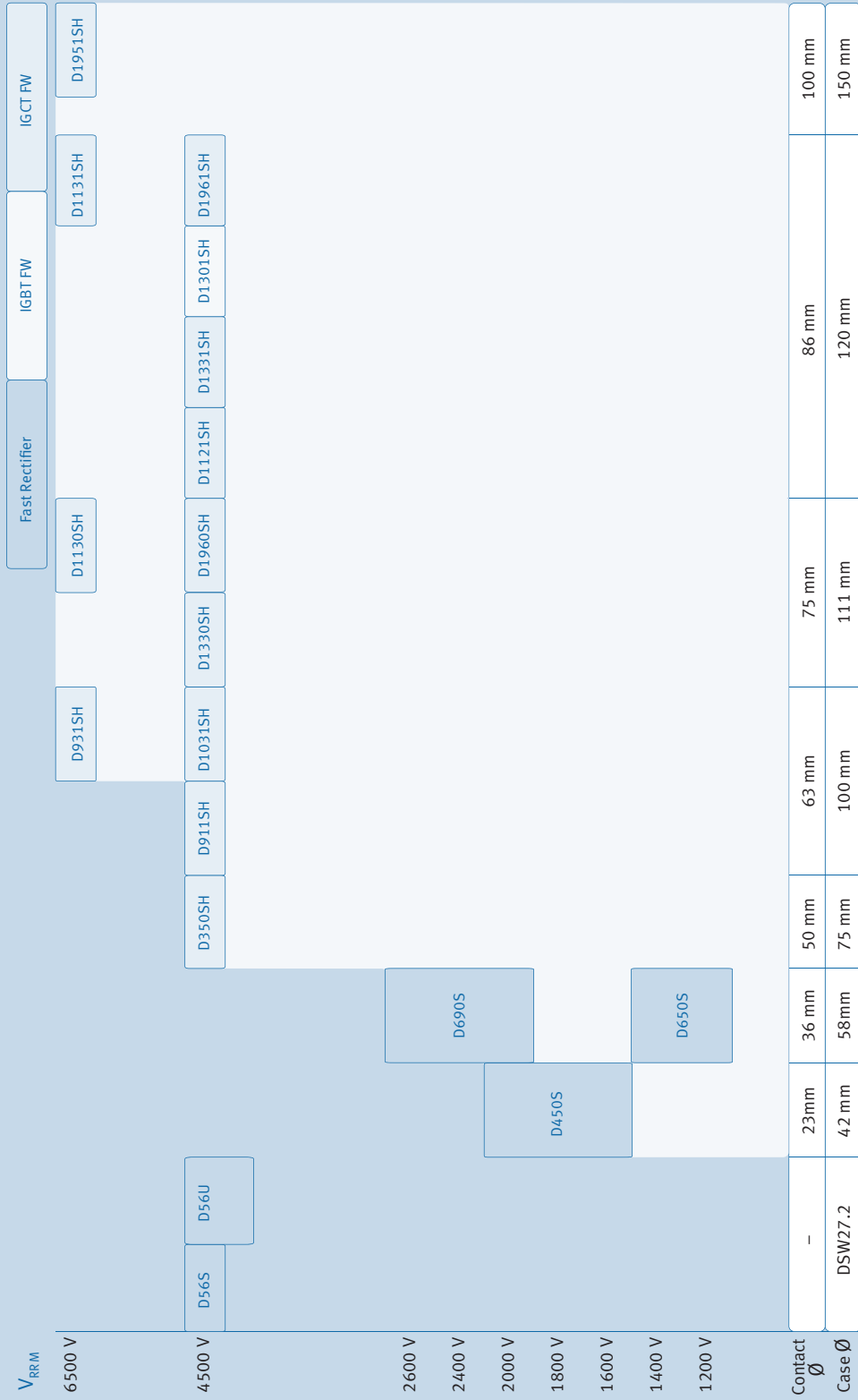
Type	v [V] $V_{DSM} = V_{DRM}$ $V_{RSM} =$ $V_{RRM} + 50V$	I_{FSM} [kA] @10 ms, $T_{vj\ max}$	$\int i^2 dt$ [A ² s · 10 ³] @ 10 ms $T_{vj\ max}$	I_{FAVM}/T_c [A/°C] @ 180° el sin	$V_{(TO)}$ [V] @ $T_{vj\ max}$	r_T [mΩ] @ $T_{vj\ max}$	R_{thjC} [K/kW] @ 180° el sin	$T_{vj\ max}$ [°C]	Outline / page
D 711 N 68 T	6800	10,5	550	790/100	0,84	0,87	31,5	160	D58.26K/7.23
D 1481 N 68 T	6800	24,5	3000	1650/100	0,75	0,42	15,8	160	D76.26K/7.24
D 3001 N 68 T	6800	53,0	14040	2900/100	0,84	0,22	9,2	160	D120.35K/7.24
D 3040 N 68 T	6800	53,0	14040	3040/100	0,84	0,22	7,3	160	D111.26K0/7.24
D 3041 N 68 T	6800	53,0	14040	3040/100	0,84	0,22	8,55	160	D120.26K/7.24
D 471 N 90 T	9000	10,0	500	565/100	1,04	1,78	31,5	160	D58.26K/7.23
D 2601 N 90 T	9000	50,0	12500	2240/100	0,94	0,41	8,55	160	D120.26K/7.24

Welding Diodes

up to 600 V 

Type	V_{RRM} [V] $V_{DSM} = V_{DRM}$ $V_{RSM} =$ $V_{RRM} + 50V$	I_{FSM} [kA] @10 ms, $T_{vj\ max}$	$\int i^2 dt$ [A ² s · 10 ³] @ 10 ms $T_{vj\ max}$	I_{FAVM}/T_c [A/°C] @ 180° el sin	$V_{(TO)}$ [V] @ $T_{vj\ max}$	r_T [mΩ] @ $T_{vj\ max}$	R_{thjC} [K/kW] @ 180° el sin	$T_{vj\ max}$ [°C]	Outline / page
25 DN 06	600	12,8	813	1145/155	0,70	0,19	17,40	180	25DN06/7.25
38 DN 06	600	32,3	5200	3885/120	0,66	0,06	12,40	180	38DN06/7.25
46 DN 06	600	52,0	13500	5100/118	0,70	0,05	9,35	180	46DN06/7.25
56 DN 06	600	70,0	24500	6400/116	0,70	0,04	6,20	180	56DN06/7.25
56 DN 06 B01	600	70,0	24500	8400/110	0,66	0,04	5,8	180	56DN06B01/7.25
65 DN 06	600	95,0	45000	8470/98	0,70	0,03	4,70	180	65DN06/7.25

Overview IGBT/IGBT-Freewheeling Diodes & Fast Rectifier Diodes



IGCT – Freewheeling Diodes

Type	V_{RRM} [V]	$V_R(D)$ [kV]* $T_c = 25$	$I_{(FSM)}$ [kA] sin, 10 ms $T_{vj\ max}$	$\int i^2 dt$ [A ² s · 10 ³] sin, 10 ms $T_{vj\ max}$	V_F [V] @ $I_F = 2,5\ kA$ $T_{vj\ max}$	I_{RM} [A]** @ $di/dt = 1000\ A/\mu s$, $I_{FM} = 2,5\ kA$, $T_{vj\ max}$	Q_{rr} [mAs]** @ $di/dt = 1000\ A/\mu s$, $I_{FM} = 2,5\ kA$, $T_{vj\ max}$	R_{thJC} [K/kW] @DC	$T_{vj\ max}$ [°C]	Outline / page
◆ D 350 SH45 T	4500	2,8	13	845	4,5	tdb	tdb	41,3	140	D75.26K/7.23
D 911 SH45 T	4500	2,8	17	1445	6,0	1200	2,8	10,0	140	D100.26K/7.24
D 1031 SH45 T	4500	2,8	23	2645	4,2	1500	3,5	10,0	140	D100.26K/7.24
D 1121 SH45 T	4500	2,8	17,5	1530	5,6	1200	3,5	7,5	140	D120.26K/7.24
D 1330 SH45 T	4500	2,8	28	3920	4,2	1500	3,5	7,3	140	D111.26K0/7.24
D 1331 SH45 T	4500	2,8	28	3920	4,2	1500	3,5	7,5	140	D120.26K/7.24
D 1960 SH45 T	4500	2,8	40	8000	2,5	2250	12,0	7,3	140	D111.26K0/7.24
D 1961 SH45 T	4500	2,8	40	8000	2,5	2250	12,0	7,5	140	D120.26K/7.24
D 931 SH45 T	6500	3,2	16	1280	5,6	1300	3,5	10,0	140	D100.26K/7.24
D 1130 SH65 T	6500	3,2	22	2400	5,6	1300	3,5	7,3	140	D111.26K0/7.24
D 1131 SH65 T	6500	3,2	22	2400	5,6	1300	3,5	7,5	140	D120.26K/7.24
D 1951 SH65 T	6500	3,2	44	9680	4,0	1800	5,0	4,5	140	D150.26K/7.25

*) Estimated failure rate $l \sim 100\ fit$ **) Clamp circuit $L = 0,25\ \mu H$

◆ New type


IGBT – Freewheeling Diodes


Type	V_{RRM} [V]	$V_R(D)$ [kV]* $T_c = 25$	$I_{(FSM)}$ [kA] sin, 10 ms $T_{vj\ max}$	$\int i^2 dt$ [A ² s · 10 ³] sin, 10 ms $T_{vj\ max}$	V_F [V] @ $I_F = 2,5\ kA$ $T_{vj\ max}$	I_{RM} [A]** @ $di/dt = 5000\ A/\mu s$, $I_{FM} = 2,5\ kA$, $T_{vj\ max}$	Q_{rr} [mAs]** @ $di/dt = 5000\ A/\mu s$, $I_{FM} = 2,5\ kA$, $T_{vj\ max}$	R_{thJC} [K/kW] @DC	$T_{vj\ max}$ [°C]	Outline / page
◆ D 1301 SH45T	4500	2,8	28	3920	4,0	3600	6,0	7,5	140	D120.26K/7.24


*) Estimated failure rate $l \sim 100\ fit$ **) Clamp circuit $L = 0,25\ \mu H$

◆ New type

Fast Rectifier Diodes

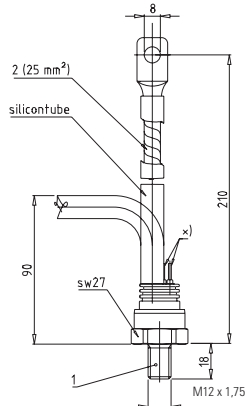
up to 1800 V 										
Type	V_{RRM} [V] $V_{DSM} = V_{DRM}$ $V_{RSM} =$ $V_{RRM} + 50V$	I_{FSM} [kA] @10 ms, $T_{vj\ max}$	$\int i^2 dt$ [A ² s · 10 ³] @ 10 ms $T_{vj\ max}$	I_{FAVM}/T_c [A/°C] @ 180° el sin	V_{TO} [V] @ $T_{vj\ max}$	r_T [mΩ] @ $T_{vj\ max}$	I_{RM} [A] @ $i_F = I_{FAVM}$, di/dt = 50 A/μs	R_{thJC} [K/kW] @180° el sin	$T_{vj\ max}$ [°C]	Outline / page
D 650 S14T	1400	10,1	510	650/96	1,0	0,45	122	48	150	D58.26K0/7.23

up to 2600 V 										
Type	V_{RRM} [V] $V_{DSM} = V_{DRM}$ $V_{RSM} =$ $V_{RRM} + 50V$	I_{FSM} [kA] @10 ms, $T_{vj\ max}$	$\int i^2 dt$ [A ² s · 10 ³] @ 10 ms $T_{vj\ max}$	I_{FAVM}/T_c [A/°C] @ 180° el sin	V_{TO} [V] @ $T_{vj\ max}$	r_T [mΩ] @ $T_{vj\ max}$	I_{RM} [A] @ $i_F = I_{FAVM}$, di/dt = 50 A/μs	R_{thJC} [K/kW] @180° el sin	$T_{vj\ max}$ [°C]	Outline / page
D 450 S20T	2000	4,6	106	443/100	1,0	0,9	160	57	150	D42.14K0/7.23
D 690 S26T	2600	11,5	661	690/100	1,0	0,5	230	39	150	D58.26K0/7.23

up to 6000 V 										
Type	V_{RRM} [V] $V_{DSM} = V_{DRM}$ $V_{RSM} =$ $V_{RRM} + 50V$	I_{FSM} [kA] @10 ms, $T_{vj\ max}$	$\int i^2 dt$ [A ² s · 10 ³] @ 10 ms $T_{vj\ max}$	I_{FAVM}/T_c [A/°C] @ 180° el sin	V_{TO} [V] @ $T_{vj\ max}$	r_T [mΩ] @ $T_{vj\ max}$	I_{RM} [A] @ $i_F = 150A$, di/dt = 200 A/μs	R_{thJC} [K/kW] @180° el sin	$T_{vj\ max}$ [°C]	Outline / page
D 56 S45C	4500	1,35	9,1	56/85	1,64	8	230	260	125	DSW27.2/7.22
D 56 U45C	4500	1,2	7,2	56/73	1,64	8	230	340	125	DSW27.2/7.22

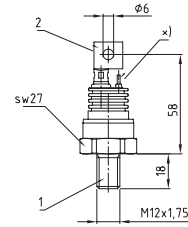
Outlines

DSW27



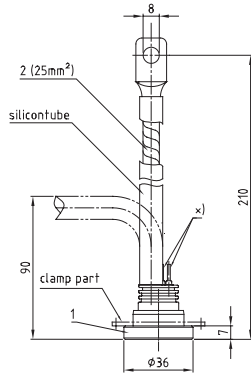
type	symbol	cathode	anode	prof. flex. tubing
N, S	⌘	rope (2)	case (1)	red
K, U	⌘	case (1)	rope (2)	blue

DSW27.2



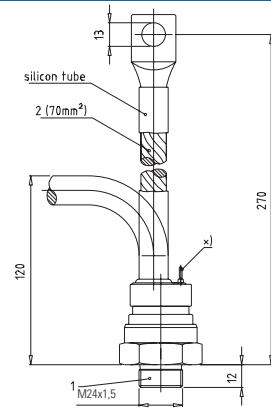
type	symbol	cathode	anode
N, S, A	⌘	connection pin (2)	case (1)
K, U, B	⌘	case (1)	connection pin (2)

DFL36



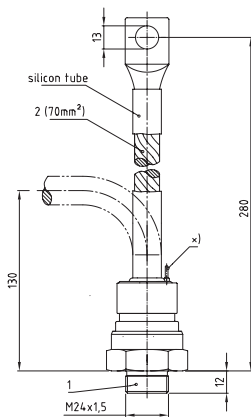
type	symbol	cathode	anode	prof. flex. tubing
N, S	⌘	rope (2)	case (1)	red
K, U	⌘	case (1)	rope (2)	blue

DSW41



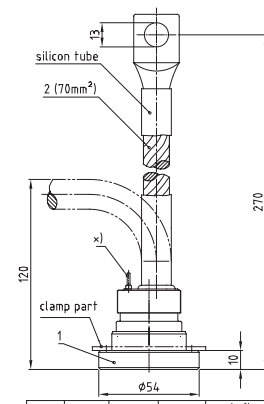
type	symbol	cathode	anode	prof. flex. tubing
N, S	⌘	rope (2)	case (1)	red
K, U	⌘	case (1)	rope (2)	blue

DSW41.1



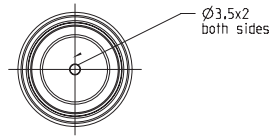
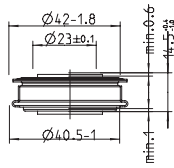
type	symbol	cathode	anode	prof. flex. tubing
N, S	⌘	rope (2)	case (1)	red
K, U	⌘	case (1)	rope (2)	blue

DFL54



type	symbol	cathode	anode	prof. flex. tubing
N, S	⌘	rope (2)	case (1)	red
K, U	⌘	case (1)	rope (2)	blue

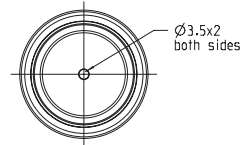
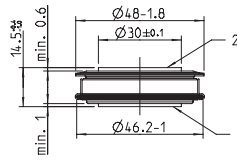
D42.14K0



strike distance: 9mm
creepage distance: 10mm

overall height based
on contact pressure

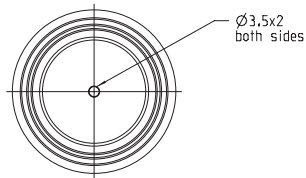
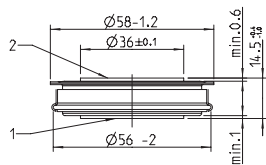
D48.14K0



strike distance: 9mm
creepage distance: 10mm

overall height based
on contact pressure

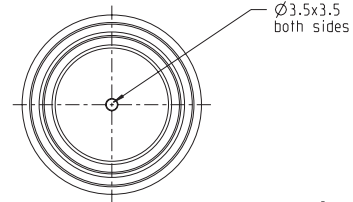
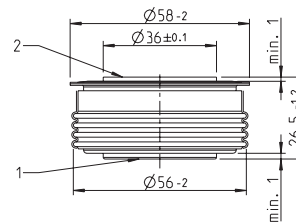
D58.14K0



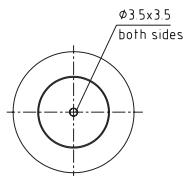
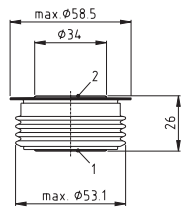
strike distance: 8.0mm
creepage distance: 9.0mm

overall height based
on contact pressure

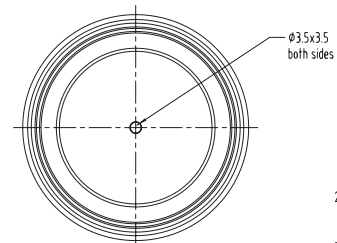
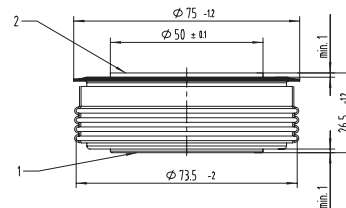
D58.26K0



D58.26K

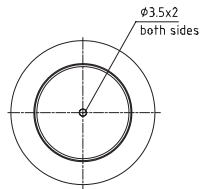
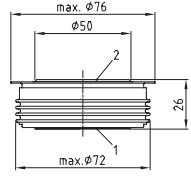


D75.26K0

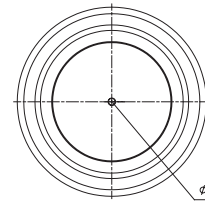
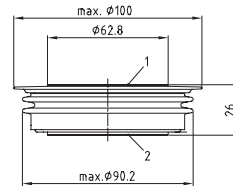


x) = evacuation pipe

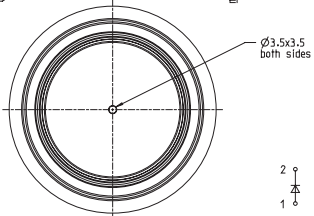
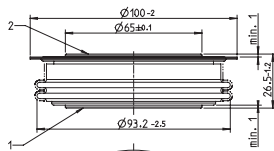
D76.26K



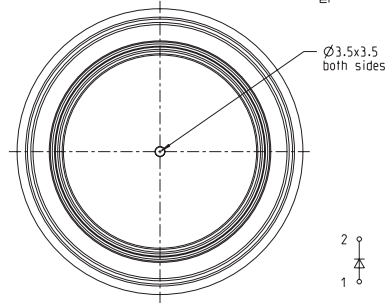
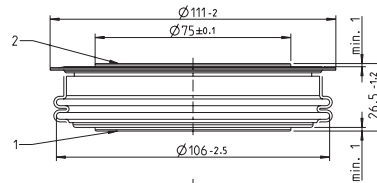
D100.26K



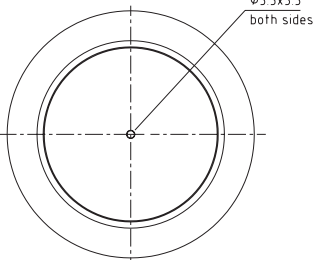
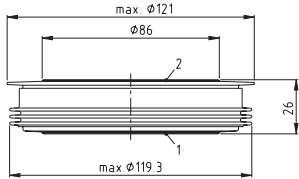
D100.26K0



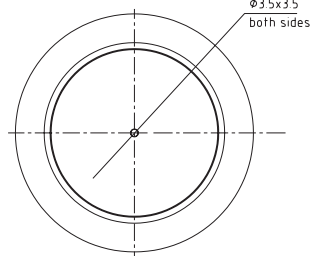
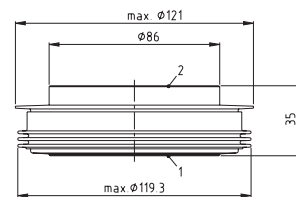
D111.26K0



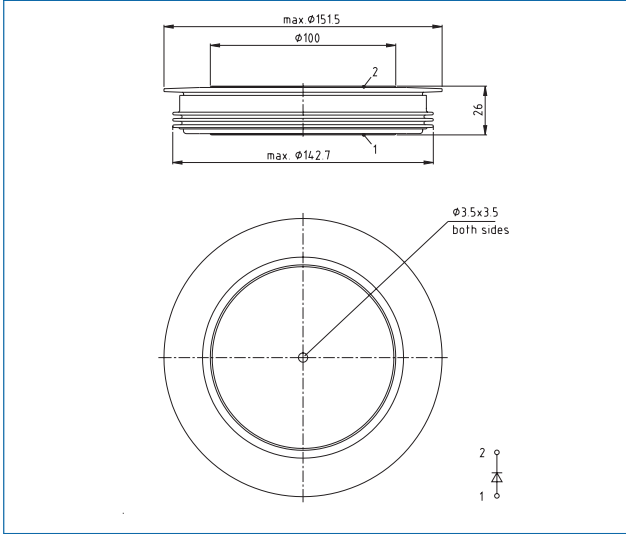
D120.26K



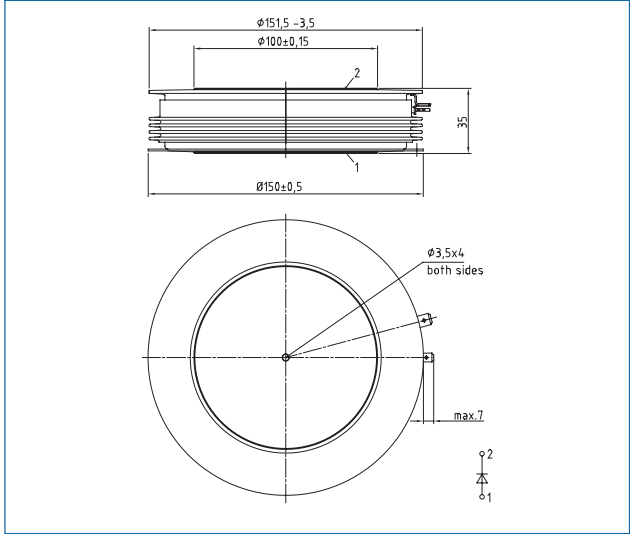
D120.35K



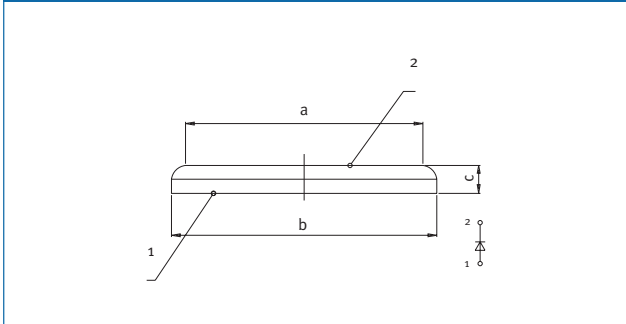
D150.26K



D150.35K



welding diodes



Designation	a [mm]	b [mm]	c [mm]
25DN06	Ø 22	Ø 25	3,6
38DN06	Ø 34	Ø 38	4,0
46DN06	Ø 43	Ø 46	4,0
56DN06	Ø 50	Ø 56	5,0
56DN06B01	Ø 50	Ø 56	5,0
65DN06	Ø 58	Ø 65	5,0

Clamping Forces for Diode Discs

Rectifier Diodes

Typ	Recommended Clamping force range [kN]	Disc diameter [mm]	Outline
D 270 N...T	3,2...7,6	58	D58.26K0
D 471 N...T	10,0...16,0	58	D58.26K
D 711 N...T	10,0...16,0	58	D58.26K
D 740 N...T	10,0...24,0	58	D58.26K0
D 770 N...T	3,2...7,6	42	D42.14K0
D 820 N...T	6,0...15,0	48	D48.14K0
D 850 N...T	10,0...24,0	58	D58.26K0
D 950 N...T	6,0...12,0	42	D42.14K0
D 970 N...T	3,8...7,6	42	D42.14K0
D 1030 N...T	10,0...24,0	58	D58.26K0
D 1050 N...T	10,0...24,0	58	D58.26K0
D 1230 N...T	6,0...15,0	48	D48.14K0
D 1481 N...T	15,0...36,0	75	D76.26K
D 1800 N...T	24,0...60,0	75	D75.26K0
D 2200 N...T	24,0...60,0	75	D75.26K0
D 2450 N...T	12,0...24,0	58	D58.14K0
D 2520 N...T	15,0...24,0	75	D75.26K0
D 2601 N...T	36,0...52,0	120	D120.26K
D 2601 NH...T	36,0...52,0	120	D120.26K
D 2650 N...T	24,0...60,0	75	D75.26K0
D 3001 N...T	36,0...52,0	120	D120.35K
D 3040 N...T	42,0...95,0	111	D111.26K0
D 3041 N...T	36,0...52,0	120	D120.26K
D 3501 N...T	36,0...52,0	120	D120.35K
D 4201 N...T	36,0...52,0	120	D120.35K
D 4810 N...T	42,0...95,0	111	D111.26K0
D 5201 N...T	63,0...91,0	150	D150.35K
D 5810 N...T	30,0...60,0	75	T75.26K0
D 6001 N...T	63,0...91,0	150	D150.26K
D 8320 N...T	40,0...80,0	100	D100.26K0

Clamping Forces for Diode Discs

Welding Diodes

Typ	Recommended Clamping force range [kN]	Disc diameter [mm]
25 DN 06	4,0...8,0	25
38 DN 06	20,0...30,0	38
46 DN 06	30,0...45,0	46
56 DN 06	40,0...60,0	56
56 DN 06 B01	40,0...60,0	56
65 DN 06	55,0...80,0	65

IGCT-Freewheeling Diodes

Typ	Recommended Clamping force range [kN]	Disc diameter [mm]	Outline
D 350 SH	15,0...24,0	75	D75.26K0
D 911 SH	27,0...45,0	100	D100.26K
D 931 SH	27,0...45,0	100	D100.26K
D 1031 SH	27,0...45,0	100	D100.26K
D 1121 SH	36,0...52,0	120	D120.26K
D 1130 SH	42,0...95,0	111	D111.26K0
D1131 SH	36,0...52,0	120	D120.26K
D 1330 SH	42,0...95,0	111	D111.26K0
D 1331 SH	36,0...52,0	120	D120.26K
D 1951 SH	55,0...91,0	150	D150.26K
D 1960 SH	42,0...95,0	111	D111.26K0
D 1961 SH	36,0...52,0	120	D120.26K

IGBT-Freewheeling Diodes

Typ	Recommended Clamping force range [kN]	Disc diameter [mm]	Outline
D 1301 SH	36,0...52,0	120	D120.26K

Fast Rectifier Diodes

Typ	Recommended Clamping force range [kN]	Disc diameter [mm]	Outline
D 450 S	3,2...7,6	42	D42.14K0
D 650 S	6,0...14,5	58	D58.26K0
D 690 S	10,0...24,0	58	D58.26K0

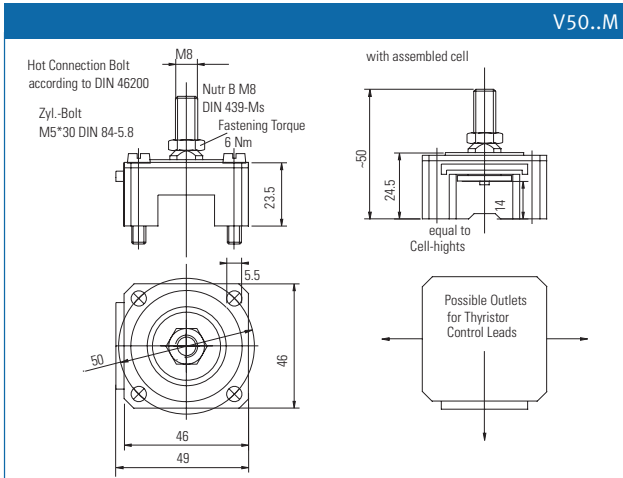
Package Units for Diode Discs

Type	Outline	Packing units
D 270 N	D58.26K0	3
D 471 N	D58.26K	3
D 711 N	D58.26K	3
D 740 N	D58.26K0	3
D 770 N	D42.14K0	12
D 820 N	D48.14K0	10
D 850 N	D58.26K0	3
D 950 N	D42.14K0	12
D 970 N	D42.14K0	12
D 1030 N	D58.26K0	3
D 1050 N	D58.26K0	3
D 1230 N	D48.14K0	10
D 1481 N	D76.26K	2
D 1800 N	D75.26K0	2
D 2200 N	D75.26K0	2
D 2450 N	D58.14K0	6
D 2520 N	D75.26K0	2
D 2601 N	D120.26K	2
D 2601 NH	D120.26K	2
D 2650 N	D75.26K0	2
D 3001 N	D120.35K	1
D 3040 N	D111.26K0	2
D 3041 N	D120.26K	2
D 3501 N	D120.35K	1
D 4201 N	D120.35K	1
D 4810 N	D111.26K0	2
D 5201 N	D150.35K	1
D 5810 N	D75.26K0	2
D 6001 N	D150.26K	1
D 8320 N	D100.26K0	3
D 350 SH	D75.26K0	2
D 911 SH	D100.26K	3
D 931 SH	D100.26K	3
D 1031 SH	D100.26K	3
D 1121 SH	D120.26K	2
D 1130 SH	D111.26K0	2
D1131 SH	D120.26K	2
D 1330 SH	D111.26K0	2
D 1331 SH	D120.26K	2
D 1951 SH	D150.26K	1
D 1960 SH	D111.26K0	2
D 1961 SH	D120.26K	2
D 1301 SH	D120.26K	2
D 450 S	D42.14K0	12
D 650 S	D58.26K0	3
D 690 S	D58.26K0	3

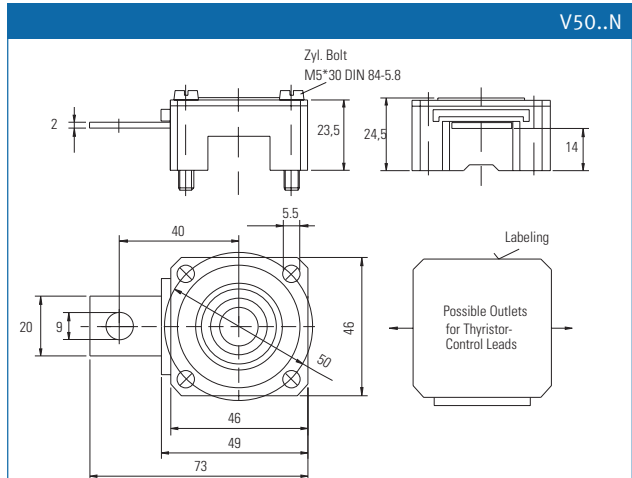
Clamping Units for Disc Type Devices

Salesname	Packing Units	Clamping force [kN]	Disc diameter [mm]	height [mm]	min. creeping distance [mm]	Ordering Code	Outline/page
V50-14.45M	21	4,5	42	14	11	SP000096563	V50...M/7.30
V50-14.45N	14	4,5	42	14	11	SP000090625	V50...N/7.30
V50-14.60M	21	6,0	42	14	11	SP000096564	V50...M/7.30
V50-14.60N	14	6,0	42	14	11	SP000090626	V50...N/7.30
V61-14.80M	12	8,0	48	14	11	SP000096565	V61...M/7.30
V61-14.80N	12	8,0	48	14	11	SP000090627	V61...N/7.30
V72-14.150M	10	15,0	58	14	11	SP000096566	V72...M/7.31
V72-26.80M	10	8,0	58	26	23	SP000096569	V72...M/7.31
V72-26.120M	10	12,0	58	26	23	SP000096567	V72...M/7.31
V72-26.150M	10	15,0	58	26	23	SP000096568	V72...M/7.31
V89-26.170N	4	17,0	75	26	26	SP000358597	V89...N/7.31
V89-26.300N	4	30,0	75	26	26	SP000090624	V89...N/7.31
V89-26.400N	4	40,0	75	26	26	SP000090662	V89...N/7.31
V100-35.200N	3	20,0	75	26	26	SP000090635	V100...N/7.31

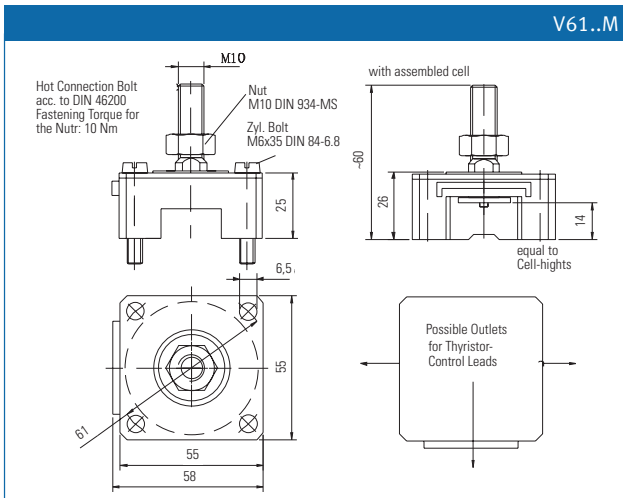
Outlines



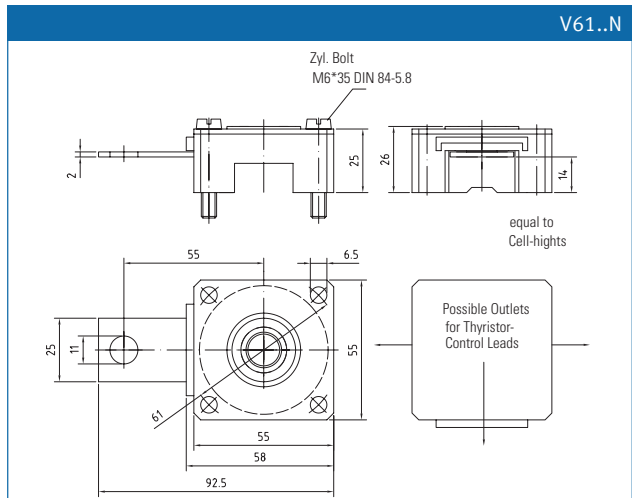
type designation	ordering code	clamping force [kN]	suitable for Ø [mm] housings	height [mm]	minimum creepage [mm] distance
V50-14.45M	SP000096563	4.5	42	14	11
V50-14.60M	SP000096564	6.0	42	14	11



type designation	ordering code	clamping force [kN]	suitable for Ø [mm] housings	height [mm]	minimum creepage [mm] distance
V50-14.45N	SP000090625	4.5	42	14	11
V50-14.60N	SP000090626	6.0	42	14	11

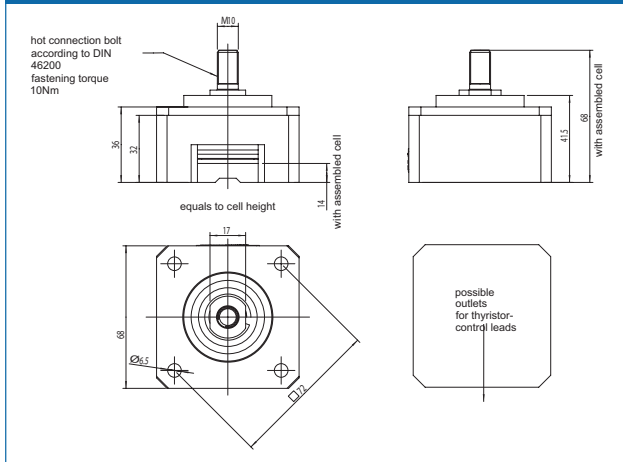


type designation	ordering code	clamping force [kN]	suitable for Ø [mm] housings	height [mm]	minimum creepage [mm] distance
V61-14.80M	SP000096565	8.0	48	14	11



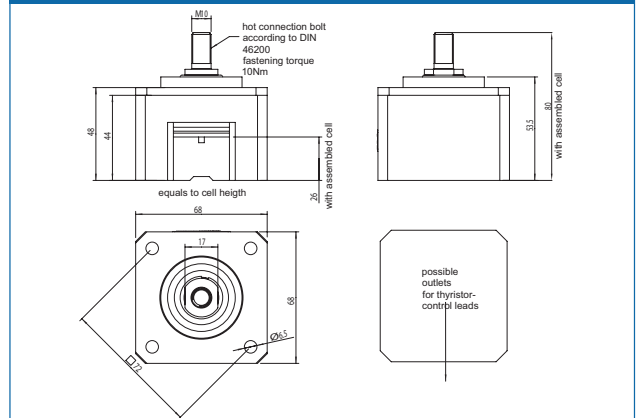
type designation	ordering code	clamping force [kN]	suitable for Ø [mm] housings	height [mm]	minimum creepage [mm] distance
V61-14.80N	SP000090627	8.0	48	14	11

V72-14..M



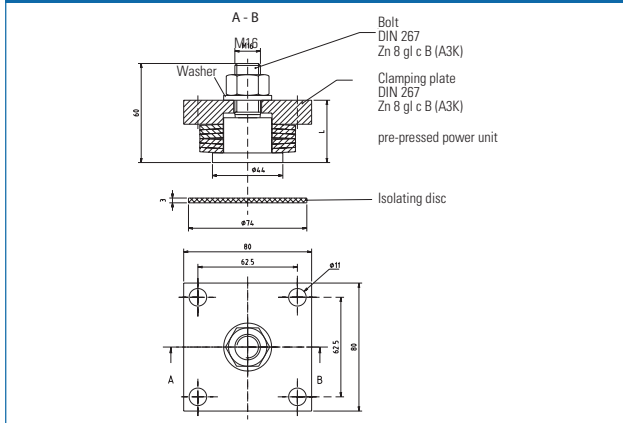
type designation	ordering code	clamping force [kN]	suitable for Ø [mm] housings	height [mm]	minimum creepage [mm] distance
V72-14.150M	SP000096566	15.0	58	14	11

V72-26..M



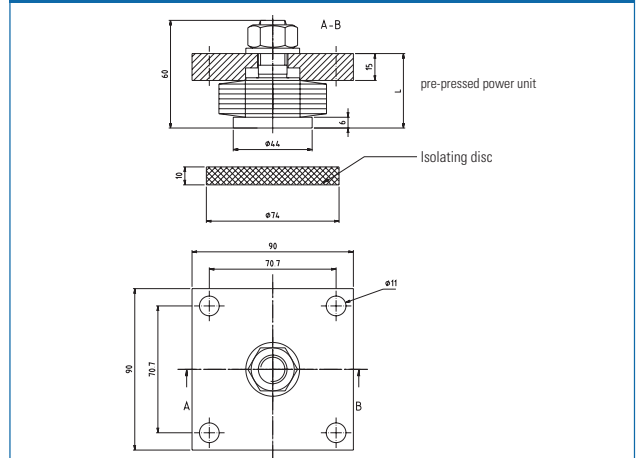
type designation	ordering code	clamping force [kN]	suitable for Ø [mm] housings	height [mm]	minimum creepage [mm] distance
V72-26.80M	SP000096569	8.0	58	26	23
V72-26.120M	SP000096567	12.0	58	26	23
V72-26.150M	SP000096568	15.0	58	26	23

V 89



type designation	ordering code	clamping force [kN]	suitable for housings	
			Ø [mm]	height [mm]
V89-26.170N	SP000358597	17	75	26
V89-26.300N	SP000090624	30	75	26
V89-26.400N	SP000090662	40	75	26

V 100



type designation	ordering code	clamping force [kN]	suitable for housings	height [mm]
			Ø [mm]	
V100-35.200N	SP000090635	20	75	26

Links

Application Notes, Product Briefs, Flyers and Brochures	Type	Redirects
Technical Information for Bipolar Semiconductors (english)	Application Note	http://www.infineon.com/technical-information-appnote
Technical Information for Bipolar Semiconductors (german)	Application Note	http://www.infineon.com/technical-information-appnote-german
IFBIP Company Brochure	Brochure	http://www.infineon.com/ifbip-company-brochure
ifbip shop	Webpage	http://www.ifbip-shop.com
Thyristor and Diode Modules	Product Brief	http://www.infineon.com/thyristor-and-diodes-product-brief
4.5kV/6.5kV Soft recovery FWDs for IGCTs and PP IGBTs	Product Brief	http://www.infineon.com/www.infineon.com/sr-fwd-product-brief
6.5 kV SCR series for Medium Voltage Soft starters	Product Brief	http://www.infineon.com/6500v-scr-product-brief
540A/8 kV 2" Light triggered Thyristor	Product Brief	http://www.infineon.com/8000v-ltt-scr-product-brief
9.5 kV SCR for Medium Voltage Soft starters	Product Brief	http://www.infineon.com/9500v-scr-product-brief
Clamping Forces for disc type devices	Product Information	http://www.infineon.com/clamping-forces-product-information
Standard gate leads for disc type devices	Product Information	http://www.infineon.com/gate-leads-for-discs-product-information

Business Excellence due to Quality Management

In quality and reliability of our innovative products and services for power electronics we are a worldwide leading company.

We have developed and introduced a quality management which continuously supervises the stability and the performance of our production and business progresses. The qualification of our innovative products and services with the most progressive quality tools contributes effectively and efficiently to a positive business development.

Our quality management is permanently brought in line with the requests and expectations of our customers, partners and employees. The base are the standards DIN EN ISO 9001:2000 and the ISO/TS 16949, which includes the requirements of the automobile industry. In addition to this standards we use the EFQM-Model for Business Excellence and the SIX SIGMA methodology to force the continual improvement of our company.

Our competent and qualified employees are motivated to fulfill the requests and wishes of our customers to their highest satisfaction at all times.



Environmental and safety management

By the use of our products, the consumption of electrical energy can be reduced. Following from this, we also during our parts' manufacturing put focus on environmental protection and economical use of natural resources. Our means aiming at environmentally friendly organisation cover all production flows and the whole production range. Our efforts regarding environmental protection are accompanied by our activities concerning accident control and health protection of our employees. By anticipatory protection- and training courses we meet the high responsibility for our employees.

We consider the consistent implementation of environmental protection, health protection, and operational safety as a main factor for our company's continued success and monitor progress in these areas regularly, evaluate the results, and set new focus points and targets.

Our environmental management is certified as per DIN EN ISO 1400, our safety management as per OSHAS 18001.

Type designation

IGBT Modules					
FF	400	R33	K F	x	example for an IGBT module
FZ					single switch with one IGBT and FWD
FF					half bridge (two IGBTs an FWDs)
FP					Power Integrated Module
FM					Matrix Module
FD/DF					chopper module
FB					Integrated modules in B2 configuration with IGBT & NTC
DD					dual diode module
FR					Switched Reluctance Modul
F3L					3-level configuration
FS3L					3-level 3 phase bridge
FT					tripack
F4					fourpack
F5					fivepack
FS					sixpack
	400				max. DC-collector current (A)
		R			reverse conducting
		S			fast Diode
		33			collector-emitter-voltage in 100 V
			K/H/I/M/N/O/P		mechanical construction:
			W/V/X/Y		module
			F		fast switching type
			H		high speed IGBT
			J		SiC JFET
			L		type with low V_{CEsat}
			M		MOSFET Chip
			S		fast short tail IGBT Chip
			E		low sat and fast trench IGBT
			T		fast trench IGBT
			P		soft switching trench IGBT
			1 ... n		internal reference numbers
			C		Emitter Controlled
			D		higher Diode current
			F		very fast Diode
			G		module in big housing
			I		integrated cooling
			P		with pre applied TIM
			R		reduced number of pins
			T		low temperature type
			-K		design with common cathode
			B1 ... n		Construction variation
			S1 ... n		Electrical selection

MIPAQ					
IFF	150B	12	N3	T	4
I					
FF					
FZ					
FT					
FS					
FP					
	150				
		B			
		S			
		V			
			12		
				N1..3	
				P	
				U1..3	
					S
					E
					T
					P
				1..n	
					B1..n construction variation
					S1..n electrical selection

Type designation

IGBT Modules					
BSM	100	GB	120	DL x	example for a IGBT module with an old designation
BSM					switch with IGBT and FWD
BYM					diode module
	100				max. DC-collector current (A)
		GA			single switch with one IGBT and FWD
		GB			half bridge (two IGBTs and FWDs)
		GD			3 phase full bridge (6-pack)
		GT			3 single switches with FWDs (tripack)
		GP			Power Intergrated Module
		GAL			B6/Break/Inverter chopper module (diode on collector side)
		GAR			chopper module (diode on emitter side)
		A			single diode
			120		collector-emitter-voltage in 10 V
				DL	Typ with low V_{CEsat}
				DN2	fast switching type
				DLC	low loss type with Emitter Controlled Diode
				S	with collector sense
				G	Design Variation
				Exxx	special type

Bridge Rectifiers and AC-Switches							
TD	B6	H	K	135	N	16 L OF	
DD							diode module
TT							thyristor module
TD							thyristor/diode
	B6						three phase bridge
	W3						three phase AC-switch
		C					fully controlled
		H					half controlled
		U					uncontrolled
			K				common cathode of thyristors
				135			output current (A) (W3C: RMS-current)
					N		phase control thyristor/diode
						16	repetitive peak off-state voltage in 100 V
						L	eupec™ IsoPACK™
						R	EconoBRIDGE™ without integr.
						RR	brake chopper IGBT
							EconoBRIDGE™ with integr.
							brake chopper IGBT
						O	no guaranteed turn-off time
						F	critical rate of rise of off-state voltage

Type designation

Presspacks

T640	N	18	T	O	F	
T						thyristor
D						diode
930						average on state current (A)
0						standard ceramic disc
1						high power ceramic disc
3						light triggered thyristor, ceramic disc
	N					phase control device
	K					phase control diode with cathode on case (only flatbase or stud)
	S					fast diode
	U					fast diode with cathode on case (only flatbase or metric)
	A					avalanche diode with anode on case
	B					avalanche diode with cathode on case (only flatbase or metric)
	NH					Diode: soft recovery for high current pulses Thyristor: high turn-on di/dt capability
	SH					softrecovery diode
		18				repetitive peak off-state and reverse voltage in 100 V
			B			metric thread with cable
			C			metric thread with solder pin
			E			flat base
			T			disc
				O		no guaranteed turn off time
						critical rate of off-state voltage
					C	500 V/ μ s
					F	1000 V/ μ s
					G	1500 V/ μ s
					H	2000 V/ μ s
						B01...n construction variation
						S01...n electrical selection

PowerBLOCK Modules

TT162	N	16	K	O	F	-K	
TT							with 2 thyristors
DD							with 2 diodes
ND, DZ, TZ							with 1 thyristor or 1 diode
TD, DT							with 1 thyristor and 1 diode
		162					average on state current (A)
	N						phase control device
	S						fast diode
		16					repetitive peak off-state and reverse voltage in 100 V
			K				mechanical construction: module
			A				mechanical construction: module
				O			no guaranteed turn off time
					F		critical rate of rise of off-state voltage (see disc devices)
						-K	design with common cathode
						-A	design with common anode
						B01...n	construction variation
						S01...n	electrical selection

Letter Symbols

B	DC current gain
FBSOA	forward biased safe operating area
f	frequency
f_o	repetition frequency
F	clamping force
G	weight
I_C	maximum permissible DC collector current
I_{CAVM}	maximum permiss. average collector current
I_{CES}	collector-emitter cut-off current
I_{GES}	gate-leakage current
I_{CRM}	permissible repetitive peak collector current
i_D	forward off-state current
i_G	gate current
I_{GD}	gate non trigger current
i_{GM}	peak gate current
I_{GT}	gate trigger current
I_H	holding current
I_L	latching current
i_R	reverse current
I_{RMS}	RMS current
I_{RM}	peak reverse recovery current
i_T/i_F	on-state current
I_{TAV}/I_{FAV}	on-state current (average value)
I_{TAVM}/I_{FAVM}	maximum average on-state current
I_{TINT}/I_{FEINT}	on-state current at intermittent duty
I_{TM}/I_{FM}	on-state current (peak value)
$I_{T(OV)M}/I_{F(OV)}$	on-state current at shorttime duty
$I_{T(OV)M}/I_{F(OV)M}$	maximum overload on-state current
$I_{T(RC)M}$	repetitive turn-on current (from snubber)
I_{TRMSM}/I_{FRMSM}	maximum RMS on-state current
I_{TSM}/I_{FSM}	surge non repetitive on-state current
I_F	DC forward current
I_{FRM}	repetitive peak forward current
$\int i^2 dt$	I^2t value
di_G/dt	rate of rise of gate current
$di_T/dt/di_F/dt$	rate of rise of on-state current
$(di/dt)_{cr}$	critical rate of rise of on-state current
L	inductance
M	mounting torque
P_{ON}	turn-on dissipation
P_{OFF}	turn-off dissipation
P	power dissipation
P_D	forward off-state dissipation
P_G	gate dissipation
P_R	reverse power dissipation
P_{RQ}	turn-off dissipation
$P_{TT} + P_{RQ}$	switching dissipation
P_T/P_F	on-state power dissipation
P_{TAV}/P_{FAV}	on-state power dissipation (average value)
P_{TT}	turn-on dissipation
P_{tot}	total power dissipation
Q_r	recovered charge
Q_s	lag charge
R	resistance
r_T	slope resistance
R_{thCA}	thermal resistance, case to coolant
R_{thCK}	thermal resistance, case to heatsink
R_{thJA}	thermal resistance, junction to coolant
R_{thJC}	thermal resistance, junction to case
RBSOA	reverse biased safe operating area
t	time
T	period
T_A	coolant temperature
T_C	case temperature
T_{op}	operating temperature
t_g	trigger pulse duration
t_{gd}	gate controlled delay time
T_h	heatsink temperature
t_p	current pulse duration (sinusoidal)
t_q	circuit commutated turn-off time
t_{rr}	reverse recovery time
T_{vj}	junction temperature
T_{vjmax}	maximum permissible junction temperature
t_w	current pulse duration (trapezoidal)
t_f	fall time
t_{off}	turn-off time
t_{on}	turn-on time
t_s	storage time
T_{vjop}	junction operating temperature
T_{stg}	storage temperature
V_D	forward off-state voltage
V_{DM}	forward off-state voltage (peak value)
V_{DRM}	repetitive peak forward off-state voltage
V_{DSM}	non-repetitive peak forward off-state voltage
V_G	gate voltage
V_{GD}	gate non trigger voltage
$V_{GE(th)}$	gate threshold voltage
V_{GT}	gate trigger voltage
V_{ISOL}	insulation test voltage
V_L	no-load voltage of trigger pulse generator
V_R	reverse voltage
V_R	direct reverse voltage
$V_{R(D)}$	continuous diode reverse voltage
V_{RG}	reverse gate voltage
V_{RGM}	peak reverse gatevoltage
V_{RM}	reverse voltage (peak value)
$V_{RMS} V_{DC}$	RMS or DC voltage value
V_{RRM}	repetitive reverse voltage
$V_{RRM(C)}$	repetitive peak reverse voltage after commutation
V_{RSM}	non-repetitive peak reverse voltage
V_T/V_F	on-state voltage
$V_{(TO)}$	threshold voltage
V_M	repetitive peak voltage
V_{CEsat}	collector-emitter saturation voltage
V_{CES}, V_{CE}	maximum permissible collector-emitter voltage
dv_D/dt	rate of rise of forward off-state voltage
dv_R/dt	rate of rise of reverse voltage
$(dv/dt)_{cr}$	critical rate of rise of off-state voltage
V_L	air quantity
V_W	water quantity
W	energy
W_{tot}	total energy
Z_{thCA}	transient thermal impedance, case to coolant
Z_{thJA}	transient thermal impedance, junction to coolant
Z_{thJC}	transient thermal impedance, junction to case
Q	current conduct. angle

Модули, IGBT, Еурес, Infineon, купить в Минске tel. +375447584780
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каталог, описание, технические, характеристики, datasheet, параметры, маркировка, габариты, фото

QR код

