

Symbol	Test Conditions	Characteristic Values	
I_R, I_D	$T_{VJ} = T_{VJM}; V_R = V_{RRM}; V_D = V_{DRM}$	\leq	3 mA
V_T	$I_T = 33 \text{ A}; T_{VJ} = 25^\circ\text{C}$	\leq	1.6 V
V_{T0}	For power-loss calculations only ($T_{VJ} = 125^\circ\text{C}$)		1.0 V
r_T			18 m Ω
V_{GT}	$V_D = 6 \text{ V}; T_{VJ} = 25^\circ\text{C}$	\leq	2.5 V
	$T_{VJ} = -40^\circ\text{C}$	\leq	3.5 V
I_{GT}	$V_D = 6 \text{ V}; T_{VJ} = 25^\circ\text{C}$	\leq	30 mA
	$T_{VJ} = -40^\circ\text{C}$	\leq	50 mA
V_{GD}	$T_{VJ} = T_{VJM}; V_D = 2/3 V_{DRM}$	\leq	0.2 V
I_{GD}		\leq	1 mA
I_L	$T_{VJ} = 25^\circ\text{C}; t_p = 10 \mu\text{s}$ $I_G = 0.09 \text{ A}; di_G/dt = 0.09 \text{ A}/\mu\text{s}$	\leq	100 mA
I_H	$T_{VJ} = 25^\circ\text{C}; V_D = 6 \text{ V}; R_{GK} = \infty$	\leq	80 mA
t_{gd}	$T_{VJ} = 25^\circ\text{C}; V_D = 1/2 V_{DRM}$ $I_G = 0.09 \text{ A}; di_G/dt = 0.09 \text{ A}/\mu\text{s}$	\leq	2 μs
t_q	$T_{VJ} = T_{VJM}; I_T = 16 \text{ A}, t_p = 300 \mu\text{s}; di/dt = -20 \text{ A}/\mu\text{s}$ $V_R = 100 \text{ V}; dv/dt = 20 \text{ V}/\mu\text{s}; V_D = 2/3 V_{DRM}$	typ.	60 μs
R_{thJC}	DC current		1.5 K/W
R_{thJH}	DC current		2.5 K/W
d_s	Creepage distance on surface		1.55 mm
d_A	Strike distance through air		1.55 mm
a	Max. acceleration, 50 Hz		50 m/s ²

Accessories:

Nut M5 DIN 439/SW8

Lock washer A5 DIN 128

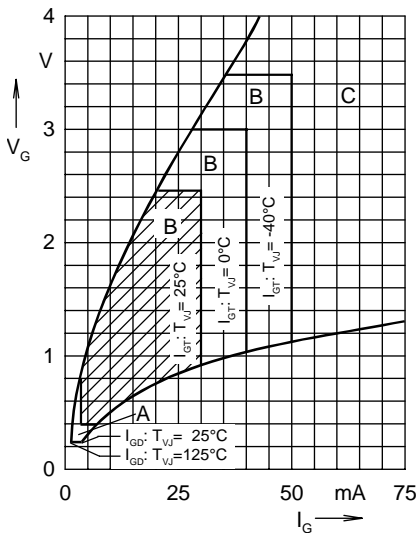


Fig. 1 Gate voltage and gate current Triggering:
A = no; B = possible; C = safe

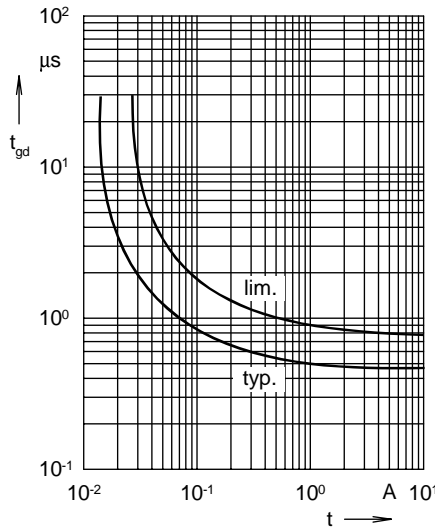


Fig. 2 Gate controlled delay time t_{gd}

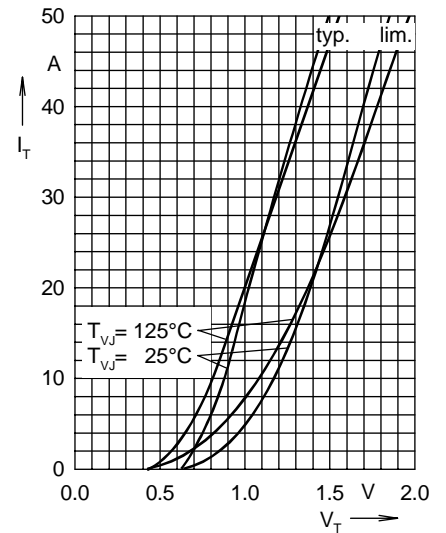


Fig. 3 On-state characteristics

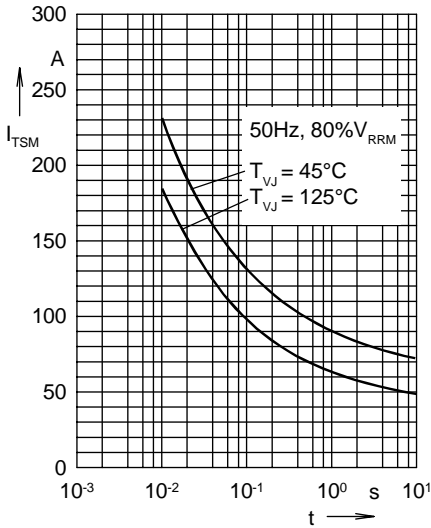


Fig. 4 Surge overload current
 I_{TSM} : crest value, t: duration

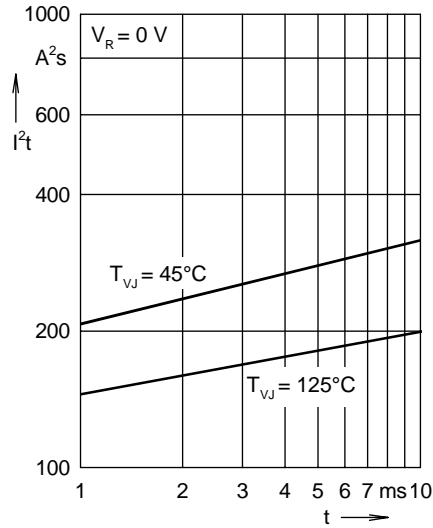


Fig. 5 I^2t versus time (1-10 ms)

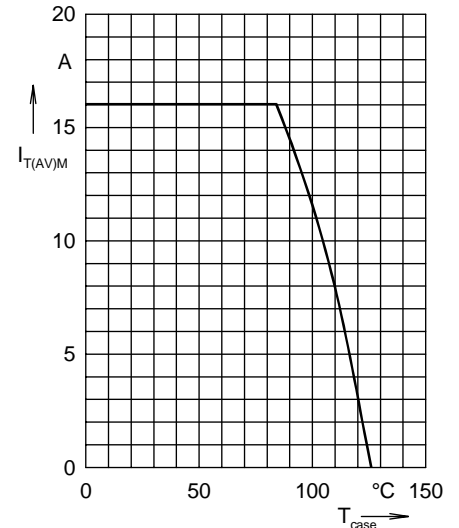


Fig. 6 Maximum forward current at case temperature 180° sine

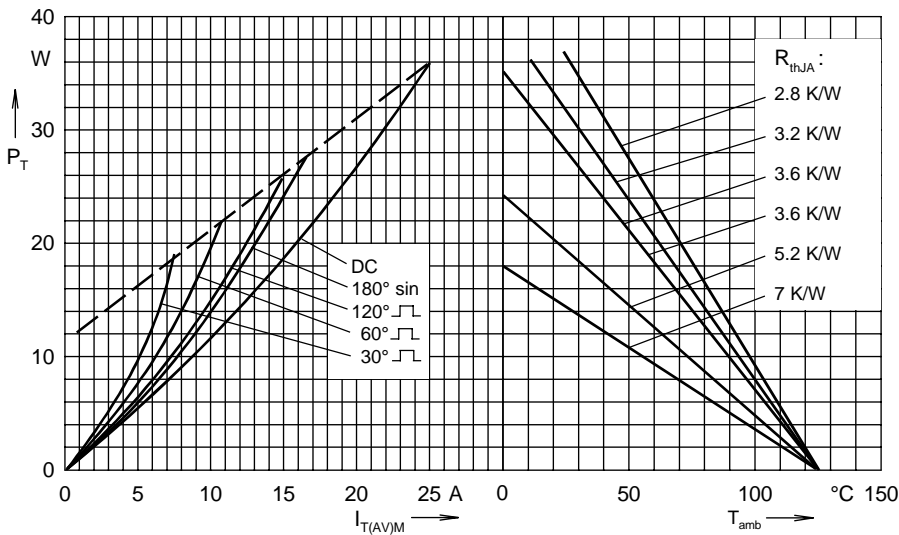


Fig. 7 Power dissipation versus on-state current and ambient temperature

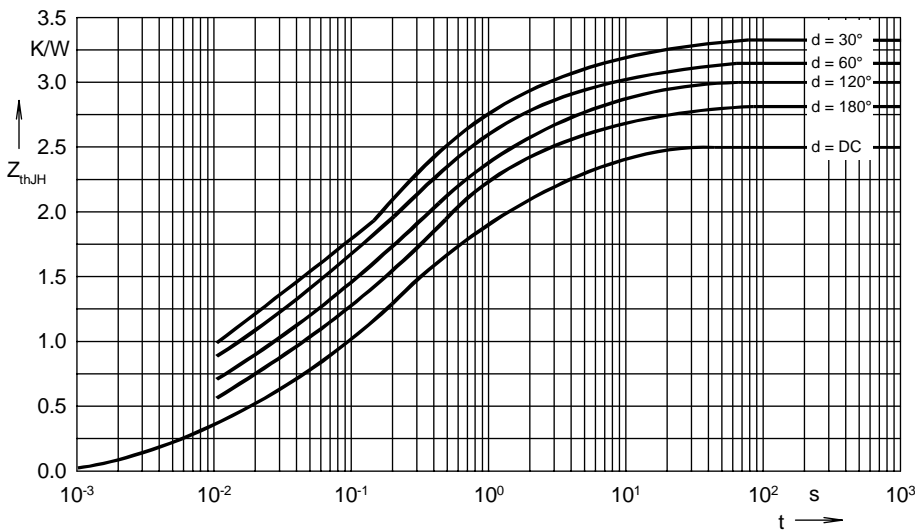


Fig. 8 Transient thermal impedance junction to heatsink

R_{thJH} for various conduction angles d:

d	R_{thJH} (K/W)
DC	2.5
180°	2.79
120°	2.95
60°	3.17
30°	3.32

Constants for Z_{thJH} calculation:

i	R_{thi} (K/W)	t_i (s)
1	0.252	0.005
2	0.333	0.0225
3	0.5	0.145
4	0.833	0.43
5	0.416	2.75
6	0.166	23