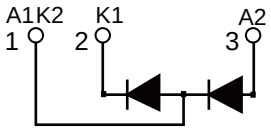
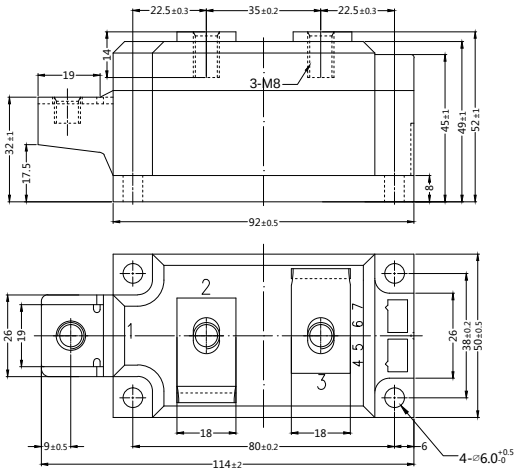
SDD253N22BT

Diode-Diode Modules



Type	V_{RSM} V	V_{RRM} V
SDD253N08BT	900	800
SDD253N12BT	1300	1200
SDD253N14BT	1500	1400
SDD253N16BT	1700	1600
SDD253N18BT	1900	1800
SDD253N20BT	2100	2000
SDD253N22BT	2300	2200

Tolerance:±0.5mm
Dimensions in mm (1mm=0.0394")



Symbol	Test Conditions		Maximum Ratings	Unit
I_{FRMS} I_{FAVM}	$T_{VJ}=T_{VJM}$ T_C=100°C; 180° sine		400 250	A
I_{FSM}	T_{VJ}=45°C V_R=0	t=10ms (50Hz), sine t=8.3ms (60Hz), sine	11000 12150	A
	$T_{VJ}=T_{VJM}$ V_R=0	t=10ms(50Hz), sine t=8.3ms(60Hz), sine	10000 11071	
$\int i^2dt$	T_{VJ}=45°C V_R=0	t=10ms (50Hz), sine t=8.3ms (60Hz), sine	596787 605000	A^2s
	$T_{VJ}=T_{VJM}$ V_R=0	t=10ms(50Hz), sine t=8.3ms(60Hz), sine	490625 500000	
T_{VJ} T_{VJM} T_{stg}			-40...+150 150 -40...+125	°C
V_{ISOL}	50/60Hz, RMS I_{ISOL}≤1mA	t=1min t=1sec	4000 4800	V~
M_d	Mounting torque (M5) Terminal connection torque (M8)		2.5-5/22-24 12-15/106-132	Nm/lb.in.
Weight	Typ.		600	g

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Symbol	Test Conditions	Characteristic Values	Unit
I_R	$T_{VJ}=T_{VJM}$; $V_R=V_{RRM}$	15	mA
V_F	I_F=750A; T_{VJ}=25°C	1.25	V
V_{TO}	For power-loss calculations only	0.90	V
r_T	$T_{VJ}=T_{VJM}$	0.37	mΩ
Q_S		-	uC
I_{RM}		-	A
R_{thJC}	per diode; DC current per module	0.14 0.07	°C/W
R_{thCH}	per diode; DC current per module	0.04 0.02	°C/W
d_S	Creepage distance on surface	12.7	mm
d_A	Strike distance through air	9.6	mm
a	Maximum allowable acceleration	50	m/s^2

FEATURES

* International standard package
* Pressure Contact Technology
* Isolation voltage 3600 V~
* RoHs compliant

APPLICATIONS

* Supplies for DC power equipment
* DC supply for PWM inverter
* Field supply for DC motors
* Battery DC power supplies

ADVANTAGES

* Space and weight savings
* Simple mounting
* Improved temperature and power cycling
* Reduced protection circuits

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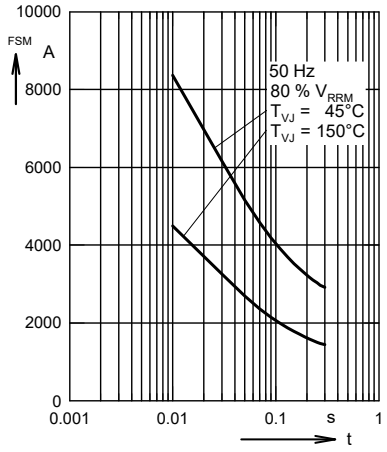

Fig. 1 Surge overload current
I_{FSM}: Crest value, t: duration

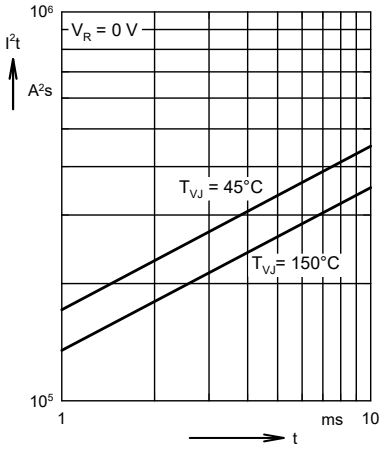

Fig. 2 I^2t versus time (1-10 ms)

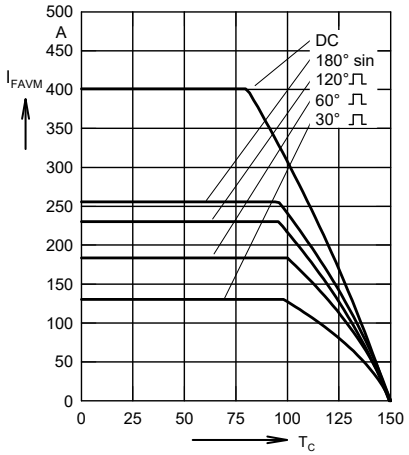

Fig. 3 Maximum forward current at case temperature

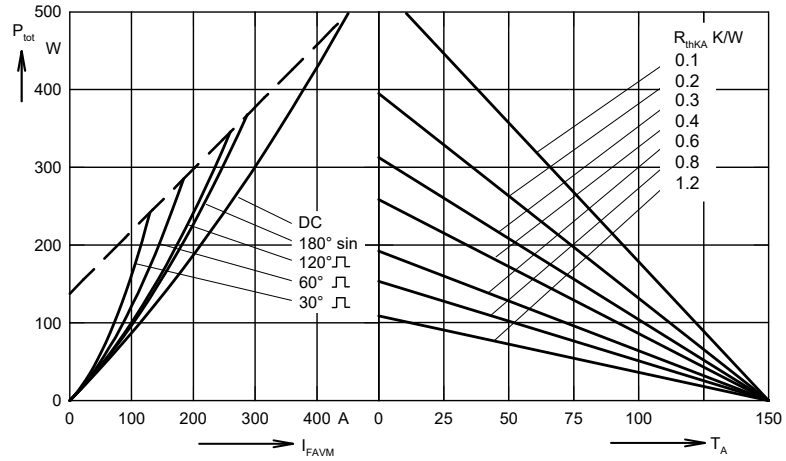

Fig. 4 Power dissipation vs. forward current and ambient temperature (per diode)

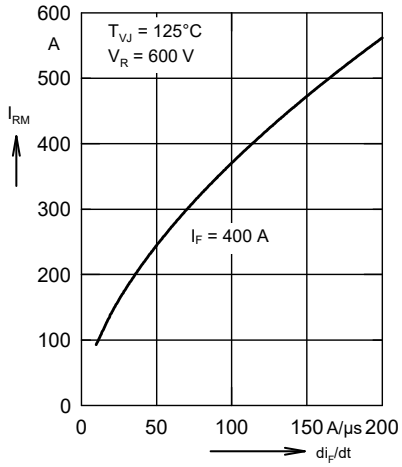

Fig. 5 Typ. peak reverse current I_{RM} versus $-di_F/dt$

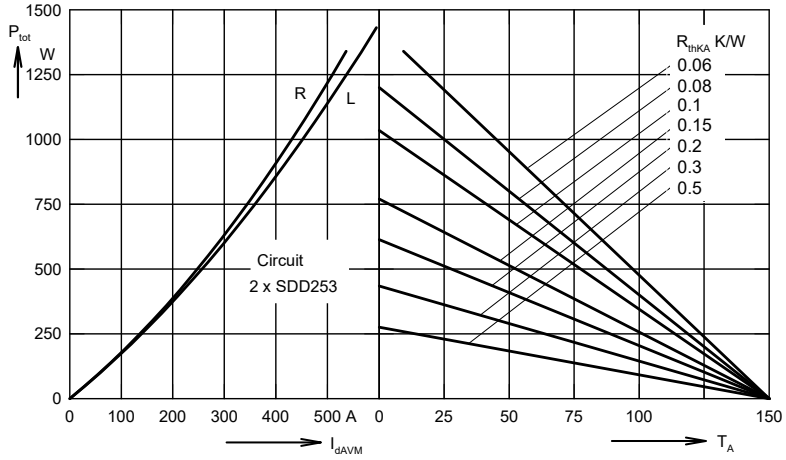

Fig. 6 Single phase rectifier bridge:Power dissipation vs. direct output current and ambient temperature R = resistive load, L = inductive load

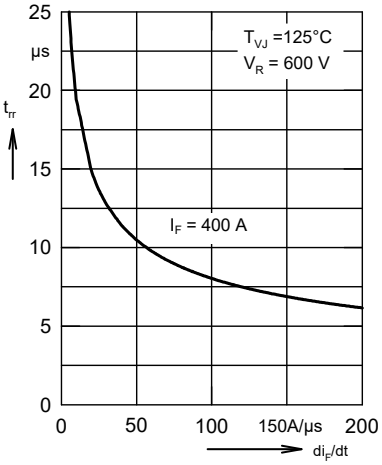

Fig. 7 Typ. recovery time t_{rr} versus $-di_F/dt$

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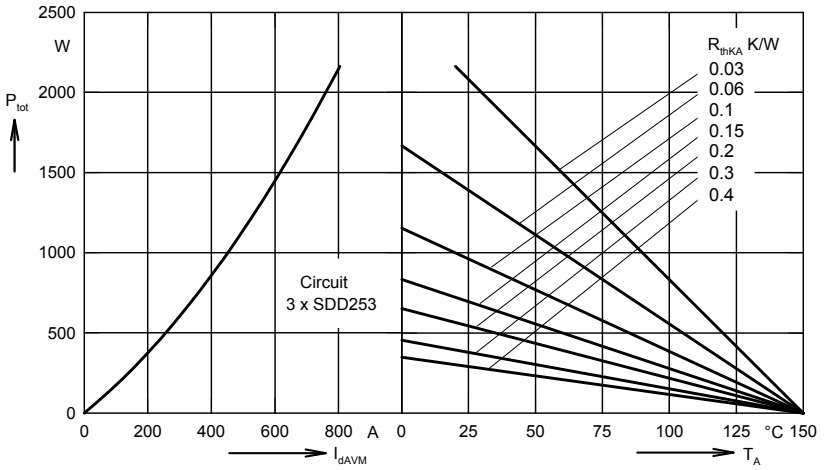

Fig. 8 Three phase rectifier bridge: Power dissipation vs. direct output current and ambient temperature

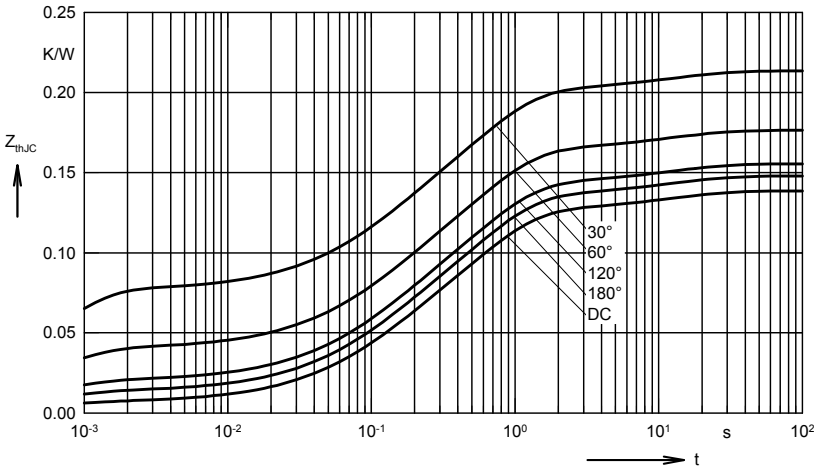

Fig. 9 Transient thermal impedance junction to case (per diode)

R_{thJC} for various conduction angles d:

d	R_{thJC} (K/W)
DC	0.139
180°	0.148
120°	0.156
60°	0.176
30°	0.214

Constants for Z_{thJC} calculation:

i	R_{thi} (K/W)	t_i (s)
1	0.0066	0.00054
2	0.0358	0.098
3	0.0831	0.54
4	0.0129	12

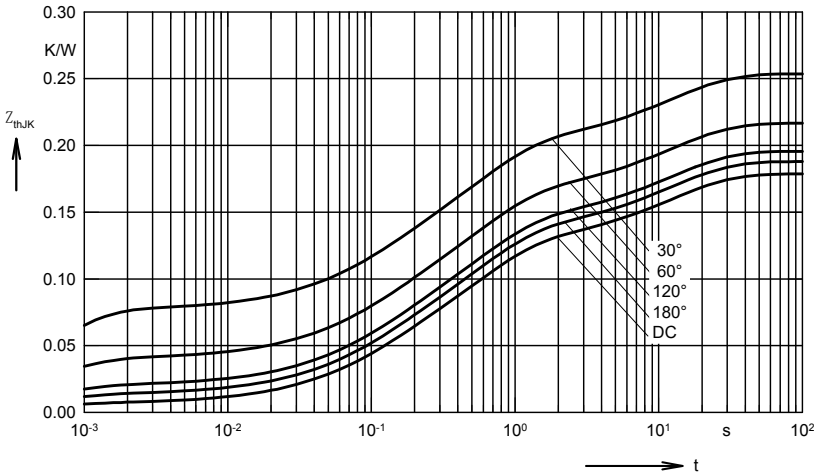

Fig. 10Transient thermal impedance junction toheatsink (per diode)

R_{thJK} for various conduction angles d:

d	R_{thJK} (K/W)
DC	0.179
180°	0.188
120°	0.196
60°	0.216
30°	0.254

Constants for Z_{thJK} calculation:

i	R_{thi} (K/W)	t_i (s)
1	0.0066	0.00054
2	0.0358	0.098
3	0.0831	0.54
4	0.0129	12
5	0.04	12

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