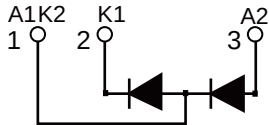
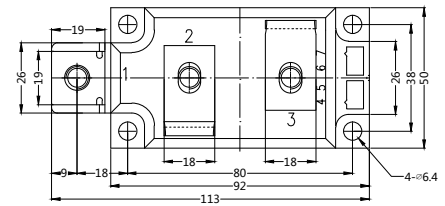
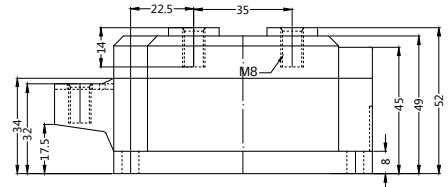


SDD253N22BT

Diode-Diode Modules



Tolerance: $\pm 0.5\text{mm}$
Dimensions in mm (1mm=0.0394")



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

Symbol	Test Conditions	Maximum Ratings	Unit
I_{FRMS} I_{FAVM}	$T_{VJ}=T_{VJM}$ $T_C=100^\circ\text{C}$; 180° sine	400 250	A
I_{FSM}	$T_{VJ}=45^\circ\text{C}$ $V_R=0$ $t=10\text{ms}$ (50Hz), sine $t=8.3\text{ms}$ (60Hz), sine	11000 12150	A
	$T_{VJ}=T_{VJM}$ $V_R=0$ $t=10\text{ms}$ (50Hz), sine $t=8.3\text{ms}$ (60Hz), sine	10000 11071	
$\int i^2 dt$	$T_{VJ}=45^\circ\text{C}$ $V_R=0$ $t=10\text{ms}$ (50Hz), sine $t=8.3\text{ms}$ (60Hz), sine	596787 605000	A^2s
	$T_{VJ}=T_{VJM}$ $V_R=0$ $t=10\text{ms}$ (50Hz), sine $t=8.3\text{ms}$ (60Hz), sine	490625 500000	
T_{VJ} T_{VJM} T_{stg}		-40...+150 150 -40...+125	$^\circ\text{C}$
V_{ISOL}	50/60Hz, RMS $I_{ISOL} \leq 1\text{mA}$ $t=1\text{min}$ $t=1\text{sec}$	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

Sirectifier®

SDD253N22BT

Diode-Diode Modules

Symbol	Test Conditions	Characteristic Values	Unit
I_R	$T_{VJ}=T_{VJM}; V_R=V_{RRM}$	15	mA
V_F	$I_F=750A; T_{VJ}=25^{\circ}C$	1.25	V
V_{TO}	For power-loss calculations only	0.90	V
r_T	$T_{VJ}=T_{VJM}$	0.37	m Ω
Q_S		-	μC
I_{RM}		-	A
R_{thJC}	per diode; DC current per module	0.14 0.07	$^{\circ}C/W$
R_{thCH}	per diode; DC current per module	0.04 0.02	$^{\circ}C/W$
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

SDD253N22BT

Diode-Diode Modules

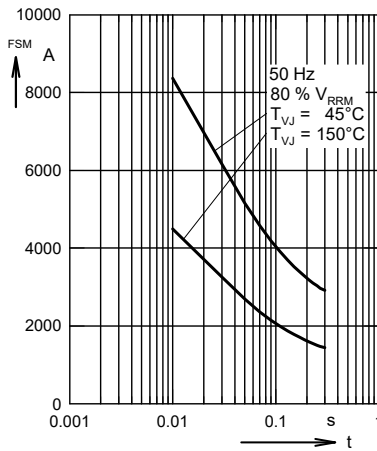


Fig. 1 Surge overload current
 I_{FSM} : Crest value, t : duration

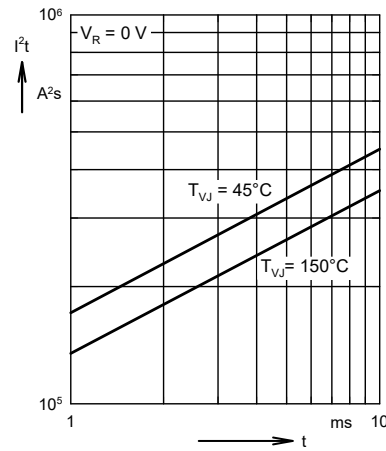


Fig. 2 I^2t versus time (1-10 ms)

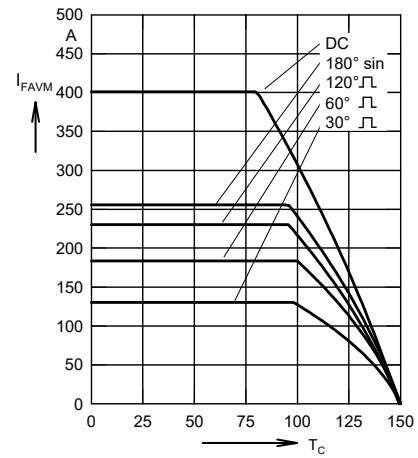


Fig. 3 Maximum forward current
at case temperature

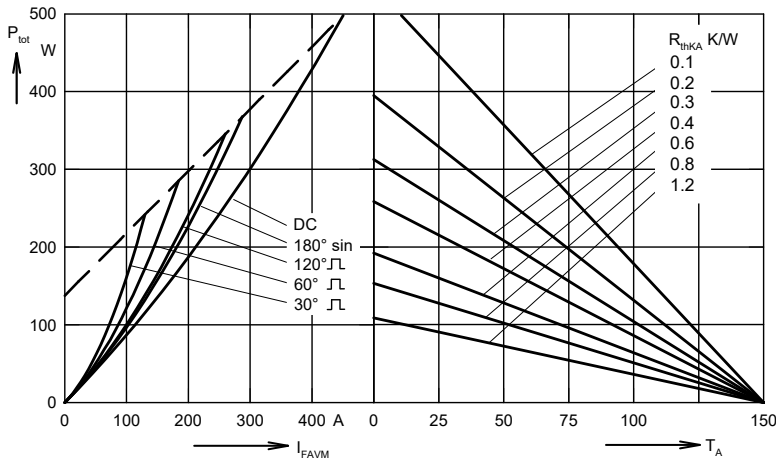


Fig. 4 Power dissipation vs. forward current and ambient temperature (per diode)

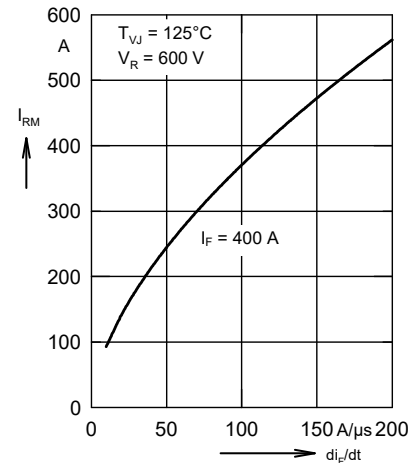


Fig. 5 Typ. peak reverse current
 I_{RM} versus $-di_F/dt$

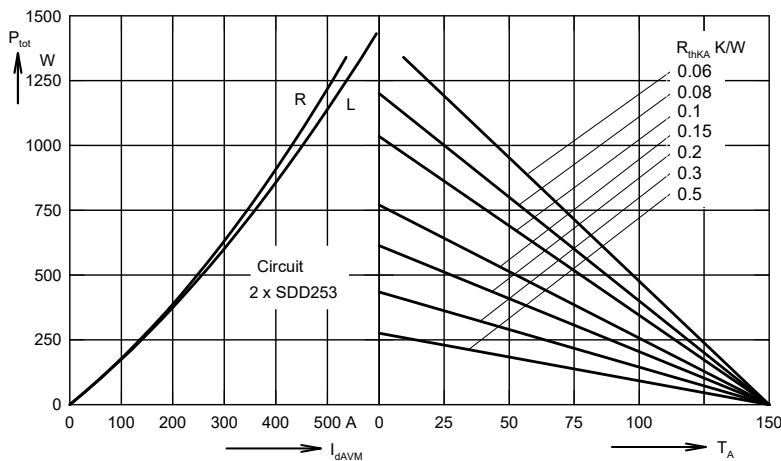


Fig. 6 Single phase rectifier bridge: Power dissipation vs. direct output current and ambient temperature
R = resistive load, L = inductive load

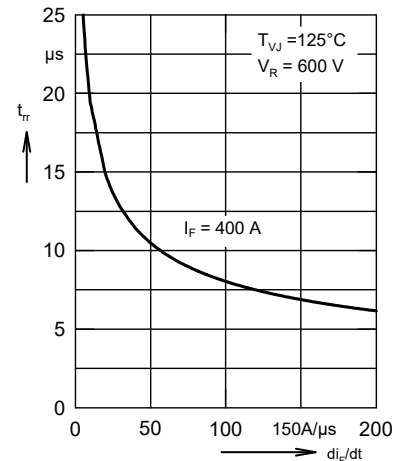


Fig. 7 Typ. recovery time t_{tr}
versus $-di_F/dt$

SDD253N22BT

Diode-Diode Modules

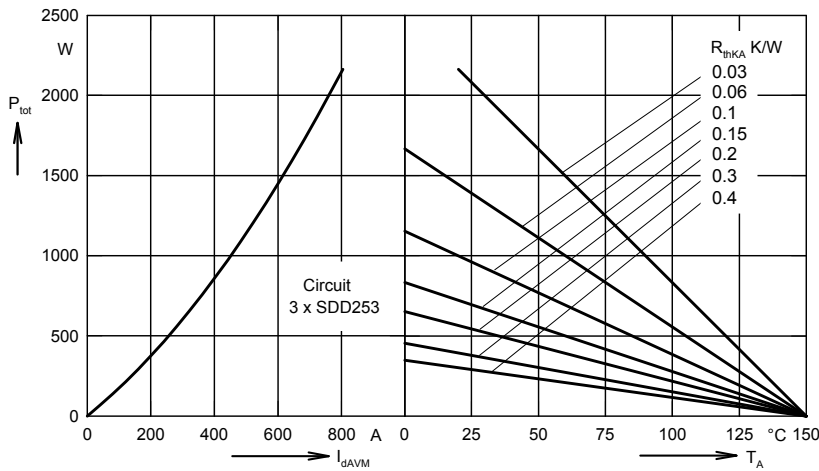


Fig. 8 Three phase rectifier bridge: Power dissipation vs. direct output current and ambient temperature

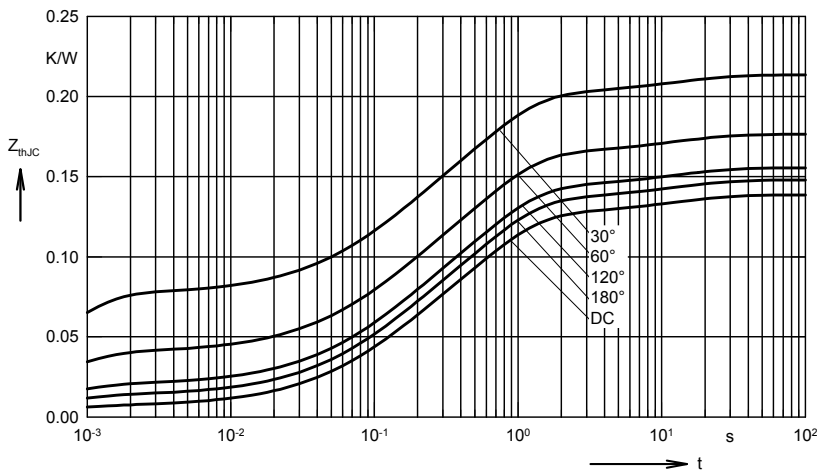


Fig. 9 Transient thermal impedance junction to case (per diode)

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

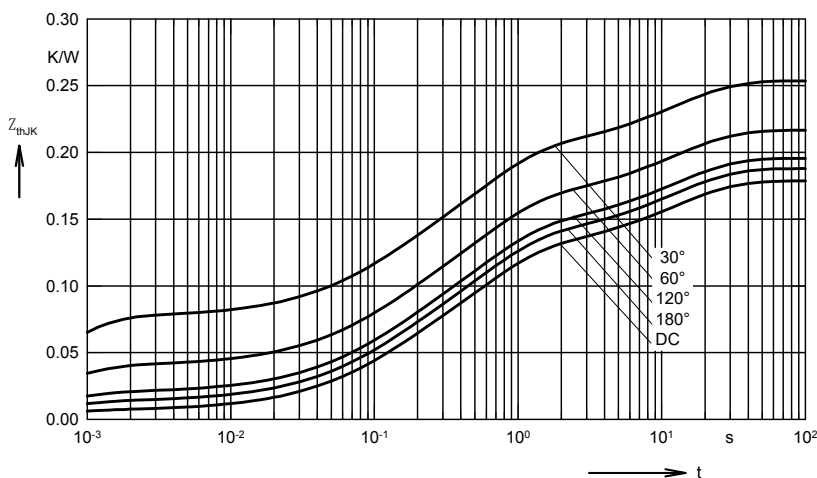


Fig. 10 Transient thermal impedance junction to heatsink (per diode)

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