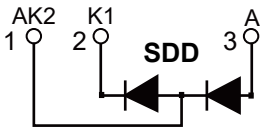


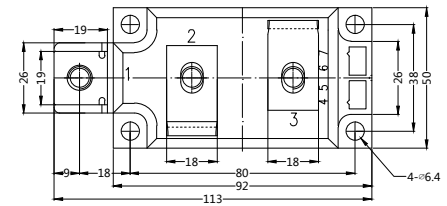
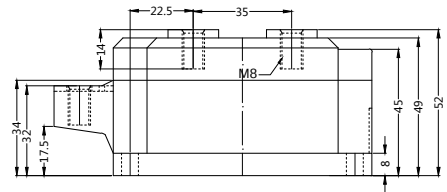
Diode-Diode Modules



Type	V _{RSM} V	V _{RRM} V
SDD320N08BT	900	800
SDD320N12BT	1300	1200
SDD320N14BT	1500	1400
SDD320N16BT	1700	1600
SDD320N18BT	1900	1800

Tolerance:±0.5mm

Dimensions in mm (1mm=0.0394")



Symbol	Test Conditions	Maximum Ratings	Unit
I _{RMS} I _{FAVM}	T _{VJ} =T _{VJM} T _C =100°C; 180° sine	500 320	A
I _{FSM}	T _{VJ} =45°C V _R =0 t=10ms (50Hz), sine t=8.3ms (60Hz), sine	12500 13200	A
	T _{VJ} =T _{VJM} V _R =0 t=10ms(50Hz), sine t=8.3ms(60Hz), sine	10000 10800	
∫i ² dt	T _{VJ} =45°C V _R =0 t=10ms (50Hz), sine t=8.3ms (60Hz), sine	673000 630000	A ² s
	T _{VJ} =T _{VJM} V _R =0 t=10ms(50Hz), sine t=8.3ms(60Hz), sine	500000 450000	
T _{VJ} T _{VJM} T _{stg}		-40...+150 150 -40...+125	°C
V _{ISOL}	50/60Hz, RMS I _{ISOL} ≤1mA t=1min t=1s	3000 3600	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



SDD320NXXBT

Diode-Diode Modules

Symbol	Test Conditions	Characteristic Values	Unit
IRRM	$T_{VJ}=T_{VJM}; V_R=V_{RRM}$	40	mA
V_F	$I_F=960A; T_{VJ}=25^{\circ}C$	1.3	V
V_{TO}	For power-loss calculations only	0.75	V
r_T	$T_{VJ}=T_{VJM}$	0.63	mΩ
Q_s	$T_{VJ}=125^{\circ}C; I_F=400A; -di/dt=50A/us$	760	uC
I_{RM}		275	A
R_{thJC}	per diode; DC current per module	0.110 0.055	K/W
R_{thJK}	per diode; DC current per module	0.150 0.075	K/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 with Copper base plate
- * Isolation voltage 3600 V~
- * UL file NO.310749
- * 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

SDD320NXXBT

Diode-Diode Modules

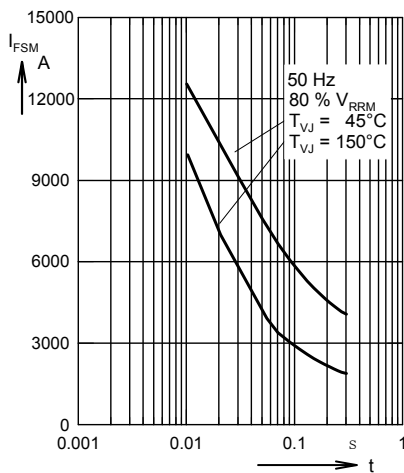


Fig. 1 Surge overload current I_{FSM} : Crest value, t: duration

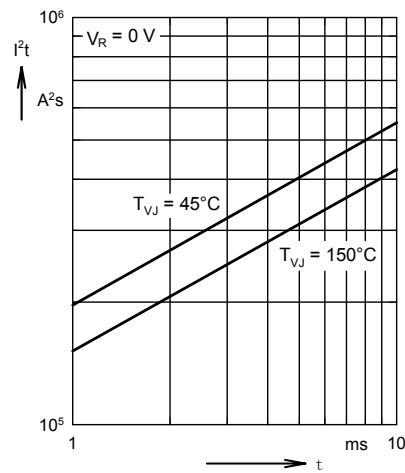


Fig. 2 I^2t versus time (1-10 ms)

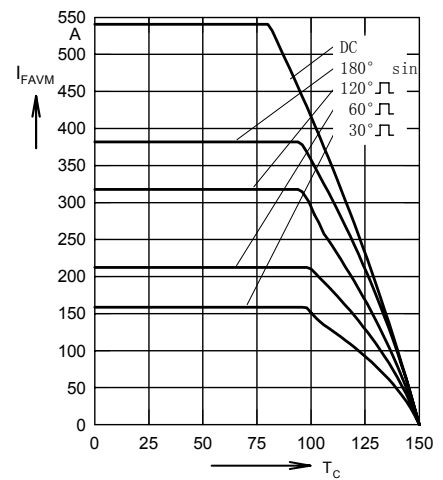


Fig. 3 Maximum forward current at case temperature

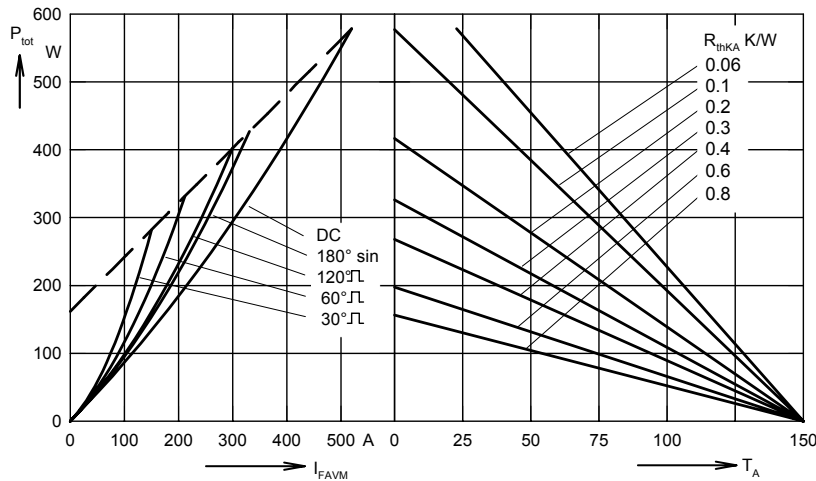


Fig. 4 Power dissipation vs. forward current and ambient temperature (per diode)

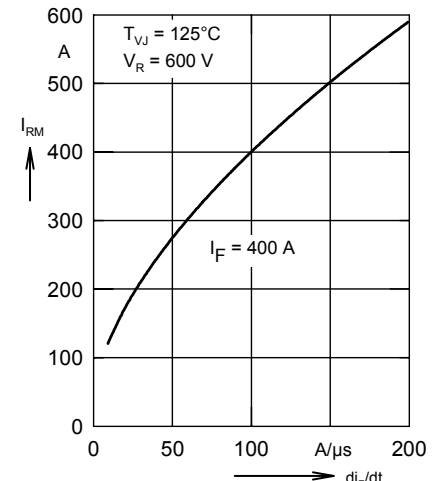


Fig. 5 Typ. peak reverse current I_{RM} versus $-di_F/dt$

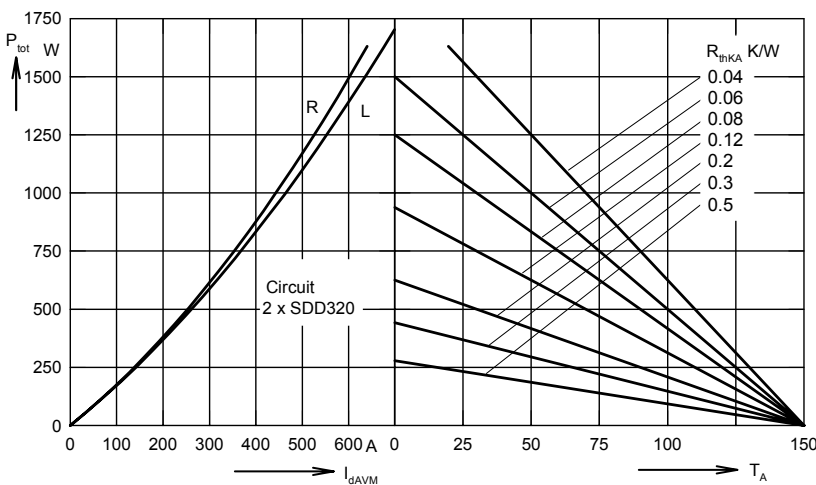


Fig. 6 Single phase rectifier bridge: Power dissipation vs. direct output current and ambient temperature R = resistive load, L = inductive load

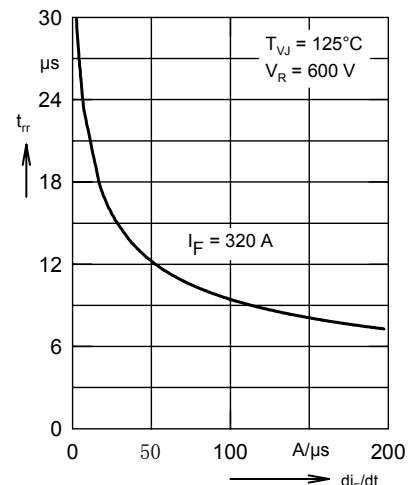


Fig. 7 Typ. recovery time t_{rr} versus $-di_F/dt$

Sirectifier®

SDD320NXXBT

Diode-Diode Modules

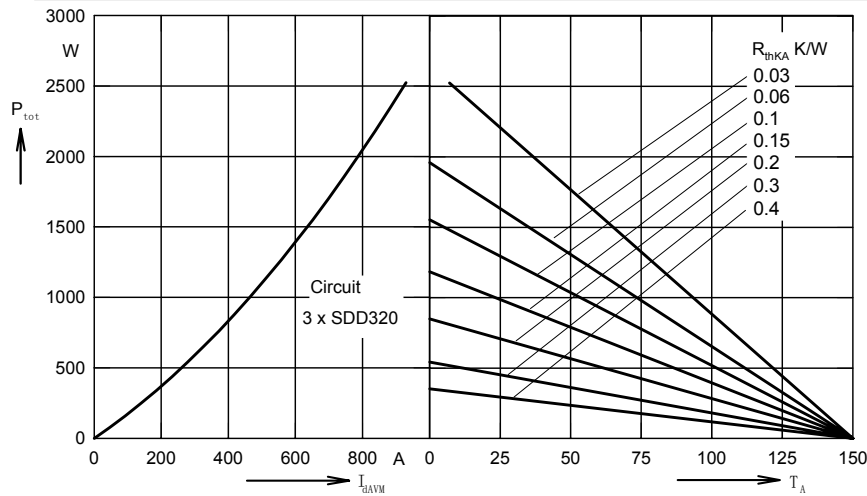


Fig. 8 Three phase rectifier bridge: Power dissipation versus direct output current and ambient temperature

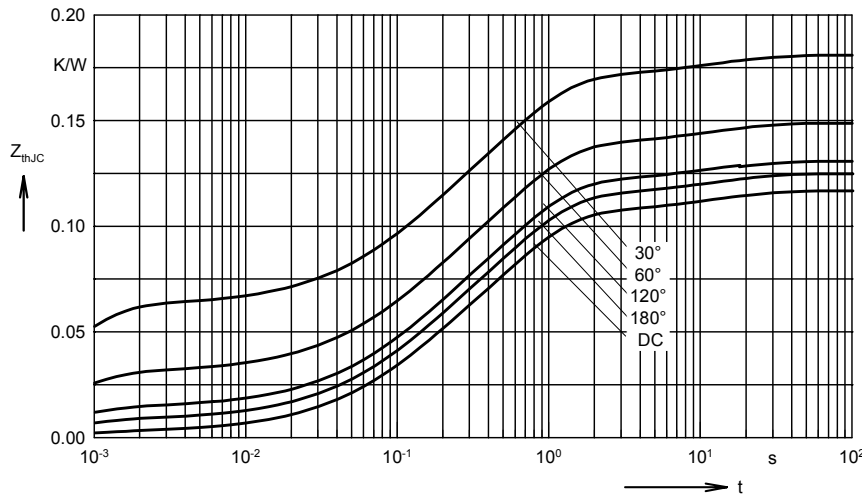


Fig. 9 Transient thermal impedance junction to case (per diode)

R_{thJC} for various conduction angles d:

d	R_{thJC} (K/W)
DC	0.110
180°C	0.128
120°C	0.135
60°C	0.153
30°C	0.185

Constants for Z_{thJC} calculation:

i	R_{thi} (K/W)	t_i (s)
1	0.0058	0.00054
2	0.031	0.098
3	0.072	0.54
4	0.0112	12

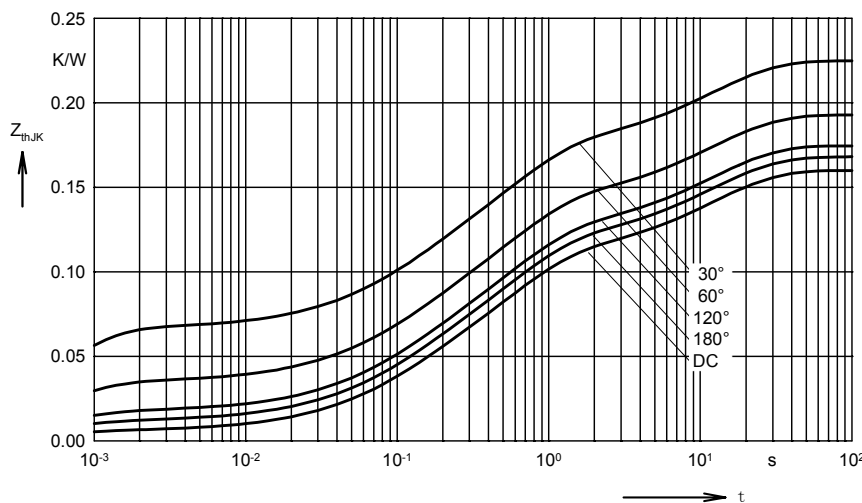


Fig. 10 Transient thermal impedance junction to heatsink (per diode)

R_{thJK} for various conduction angles d:

d	R_{thJK} (K/W)
DC	0.150
180°C	0.165
120°C	0.175
60°C	0.193
30°C	0.225

Constants for Z_{thJK} calculation:

i	R_{thi} (K/W)	t_i (s)
1	0.0058	0.00054
2	0.031	0.098
3	0.072	0.54
4	0.0112	12
5	0.04	12