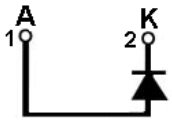
SDO380NxxBT

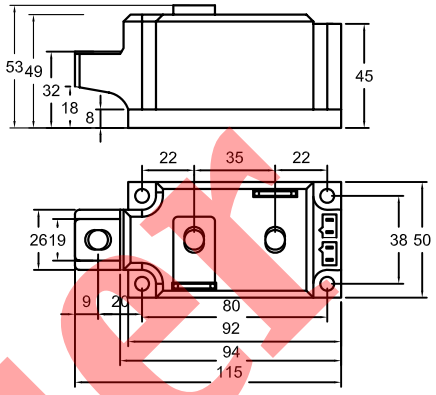
Single Diode Modules





Type	V_{RSM} V	V_{RRM} V
SDO380N08BT	900	800
SDO380N12BT	1300	1200
SDO380N14BT	1500	1400
SDO380N16BT	1700	1600
SDO380N18BT	1900	1800
SDO380N20BT	2100	2000
SDO380N22BT	2300	2200
SDO380N24BT	2500	2400

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



Symbol	Test Conditions		Maximum Ratings	Unit
I_{FRMS} I_{FAVM}	$T_{VJ}=T_{VJM}$ $T_C=100^oC$; 180° sine		596 380	A
I_{FSM}	$T_{VJ}=45^oC$ $V_R=0$	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	
$\int i^2dt$	$T_{VJ}=45^oC$ $V_R=0$	t=10ms (50Hz), sine t=8.3ms (60Hz), sine	673000 630000	A^2s
	$T_{VJ}=T_{VJM}$ $V_R=0$	t=10ms(50Hz), sine t=8.3ms(60Hz), sine	500000 450000	
T_{VJ} T_{VJM} T_{stg}			-40...+150 150 -40...+125	^oC
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

Sirectifier

 © 2009 Sirectifier Electronics Technology Corp.

Sirectifier®

SDO380NxxBT

Single Diode Modules

Symbol	Test Conditions	Characteristic Values	Unit
I_{RRM}	$T_{VJ}=T_{VJM}$; $V_R=V_{RRM}$	40	mA
V_F	I_F=1200A; T_{VJ}=25°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°C; I_F=400A; -di/dt=50A/us	760	uC
I_{RM}		275	A
R_{thJC}	per module DC current	0.110	K/W
R_{thJK}	per module DC current	0.150	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
* 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

Sirectifier

 © 2009 Sirectifier Electronics Technology Corp.

Sirectifier®

SDO380NxxBT

Single Diode Modules

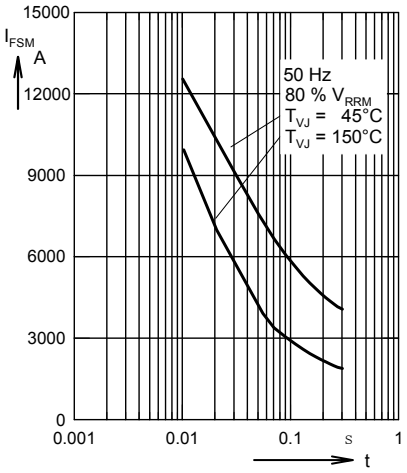


Fig. 1 Surge overload current
I_{FSM}: Crest value, t: duration

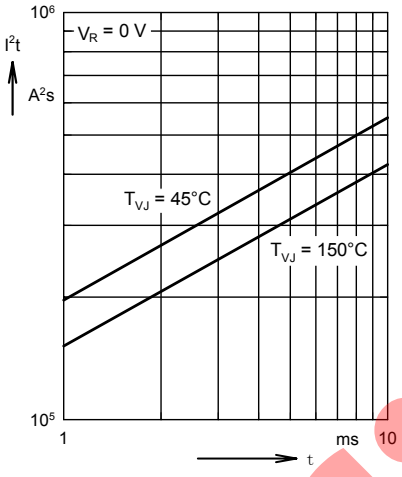


Fig. 2 I^2t versus time (1-10 ms)

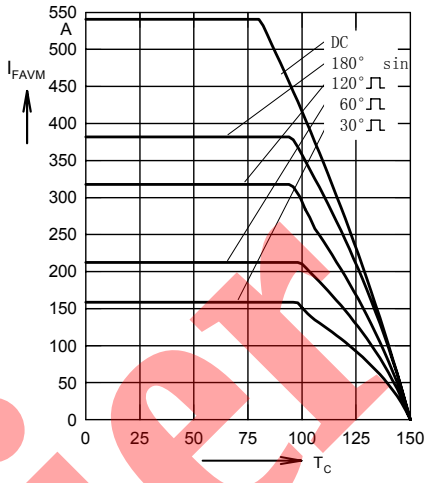


Fig. 3 Maximum forward current at case temperature

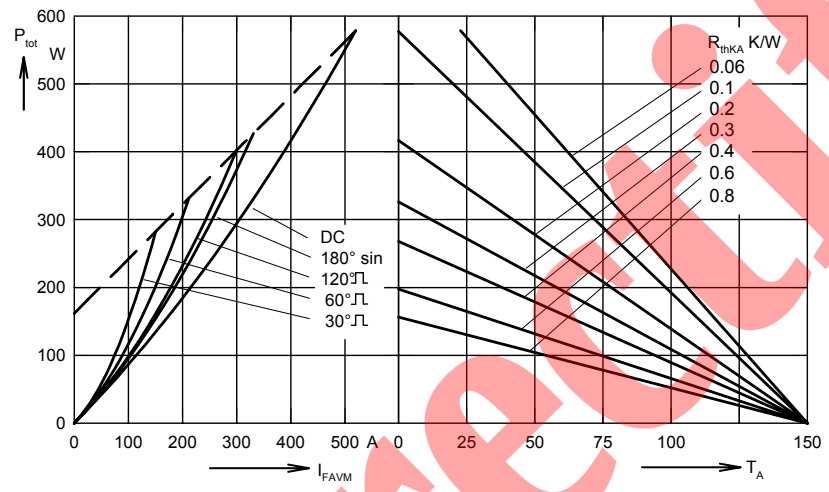


Fig. 4 Power dissipation vs. forward current and ambient temperature (per diode)

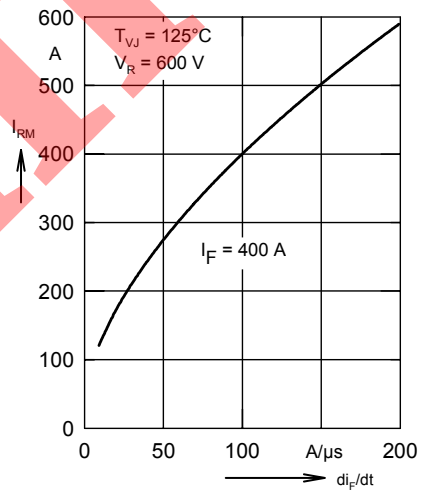


Fig. 5 Typ. peak reverse current I_{RM} versus $-di_F/dt$

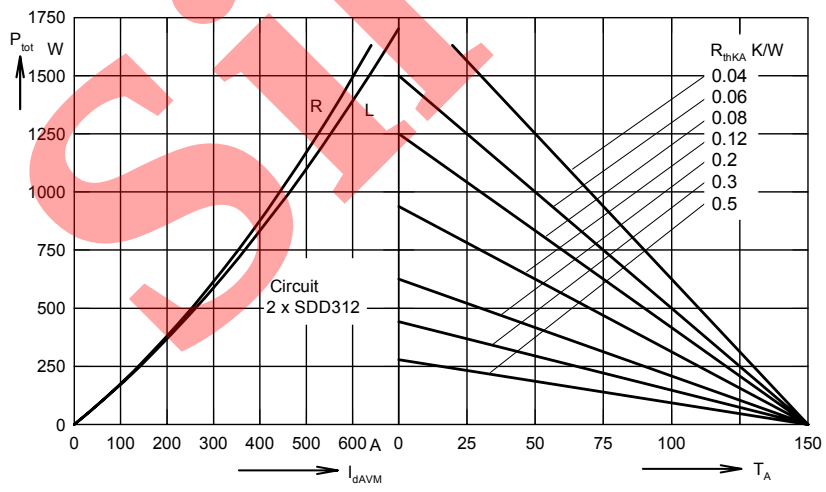


Fig. 6 Single phase rectifier bridge: Power dissipation vs. direct output current and ambient temperature R = resistive load, L = inductive load

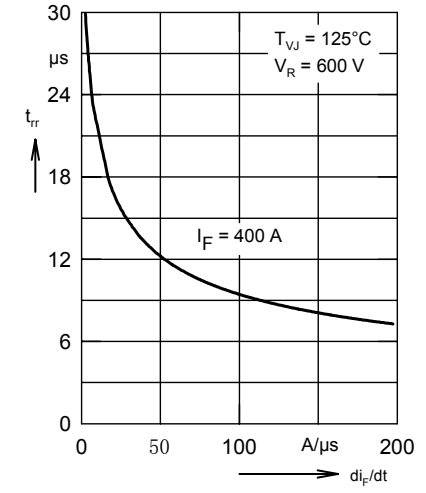


Fig. 7 Typ. recovery time t_{rr} versus $-di_F/dt$

Sirectifier

 © 2009 Sirectifier Electronics Technology Corp.

Sirectifier®

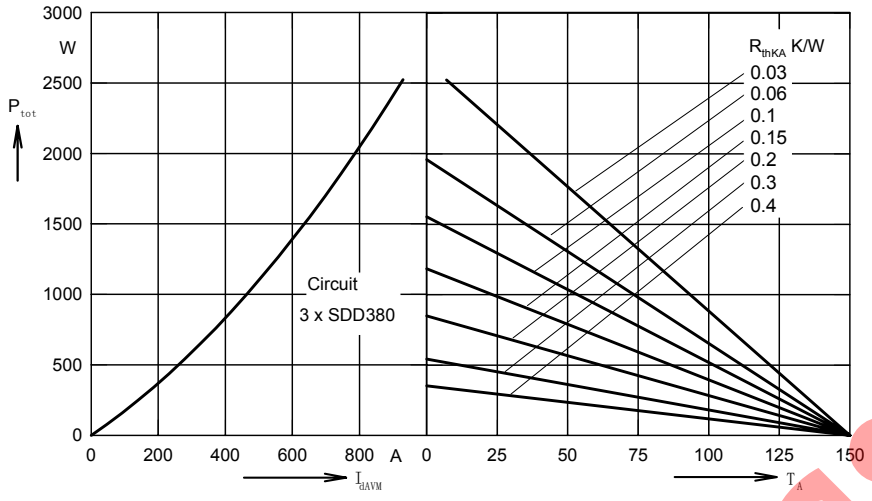


Fig. 8 Three phase rectifier bridge: Power dissipation versus direct output current and ambient temperature

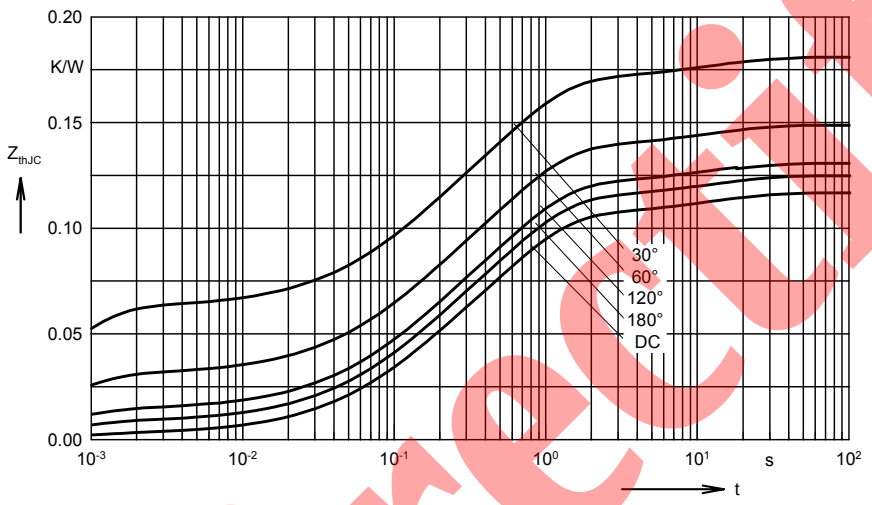


Fig. 9 Transient thermal impedance junction to case (per diode)

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

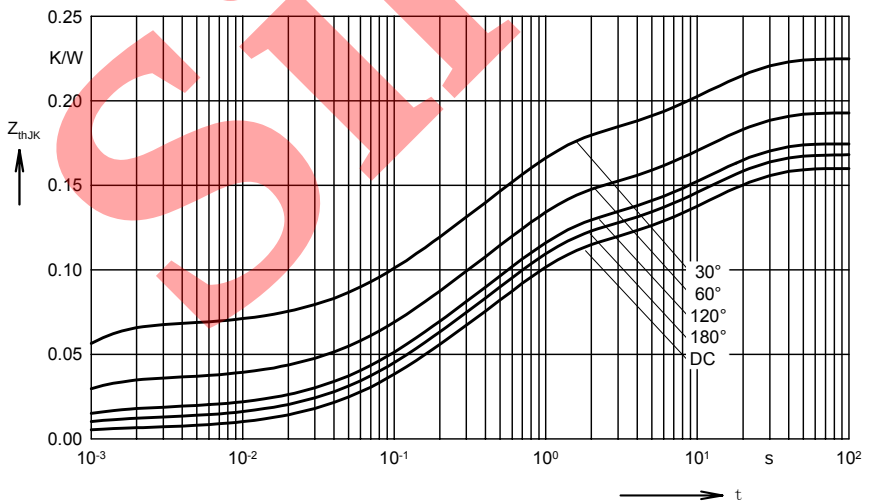


Fig. 10 Transient thermal impedance junction to heatsink (per diode)

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

Sirectifier

 © 2009 Sirectifier Electronics Technology Corp.