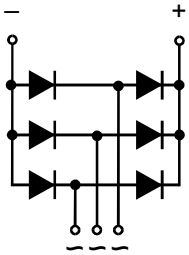
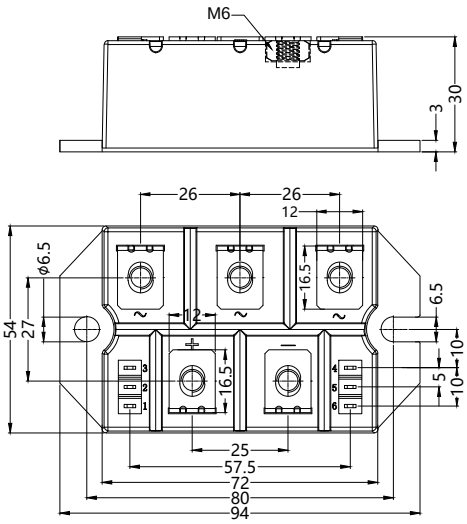
S3PDB180N16

Three Phase Rectifier Modules



Type	V_{RSM} V	V_{RRM} V
S3PDB180N08	900	800
S3PDB180N12	1300	1200
S3PDB180N14	1500	1400
S3PDB180N16	1700	1600
S3PDB180N18	1900	1800

Dimensions in mm (1mm=0.0394")



Symbol	Test Conditions		Maximum Ratings	Unit
I_{dav} I_{dav}	T_C=100°C, module T_A=35°C (R_{thCA}=0.2K/W), module		180 139	A
I_{FSM}	T_{VJ}=45°C V_R=0	t=10ms (50Hz), sine t=8.3ms (60Hz), sine	1800 1950	A
	T_{VJ}=T_{VJM} V_R=0	t=10ms(50Hz), sine t=8.3ms(60Hz), sine	1600 1800	
I^2t	T_{VJ}=45°C V_R=0	t=10ms (50Hz), sine t=8.3ms (60Hz), sine	16200 16200	A^2s
	T_{VJ}=T_{VJM} V_R=0	t=10ms(50Hz), sine t=8.3ms(60Hz), sine	12800 13400	
T_{VJ} T_{VJM} T_{stg}			-40...+150 150 -40...+125	°C
V_{ISOL}	50/60Hz, RMS I_{ISOL}≤1mA	t=1min t=1s	2500 3000	V~
M_d	Mounting torque (M6) Terminal connection torque (M6)		5 ± 15% 5 ± 15%	Nm
Weight	typical		262	g

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Symbol	Test Conditions	Characteristic Values	Unit
I_R	$V_R=V_{RRM}$; $T_{VJ}=25^oC$ $V_R=V_{RRM}$; $T_{VJ}=T_{VJM}$	≤ 0.3 ≤ 5	mA
V_F	I_F=300A; $T_{VJ}=25^oC$	≤ 1.65	V
V_{TO}	For power-loss calculations only	0.8	V
r_T	$T_{VJ}=T_{VJM}$	3	mΩ
R_{thJC}	per diode per module	0.65 0.108	K/W
R_{thJK}	per diode per module	0.83 0.138	K/W
d_S	Creeping distance on surface	10	mm
d_A	Creepage distance in air	9.4	mm
a	Max. allowable acceleration	50	m/s^2

FEATURES

* Package with screw terminals
* Isolation voltage 3000 V~
* Glass passivated chips
* Blocking voltage up to 1800 V
* Low forward voltage drop
* UL File NO.E310749
* RoHS compliant

APPLICATIONS

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

ADVANTAGES

* Easy to mount with two screws
* Space and weight savings
* Improved temperature and power cycling

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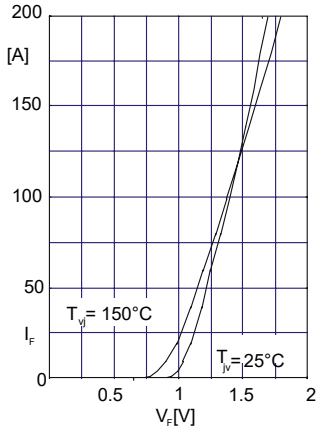

Fig. 1 Forward current versus voltage drop per diode

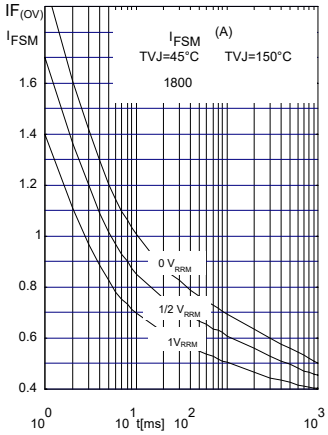

Fig. 2 Surge overload current per diode I_{FSM}: Crest value. t: duration

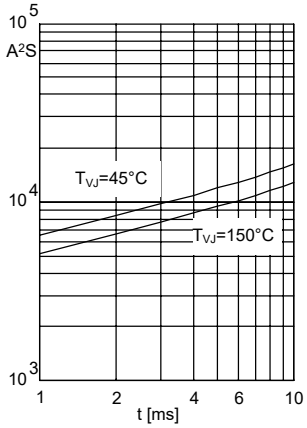

Fig. 3 $\int i^2dt$ versus time (1-10ms) per diode (or thyristor)

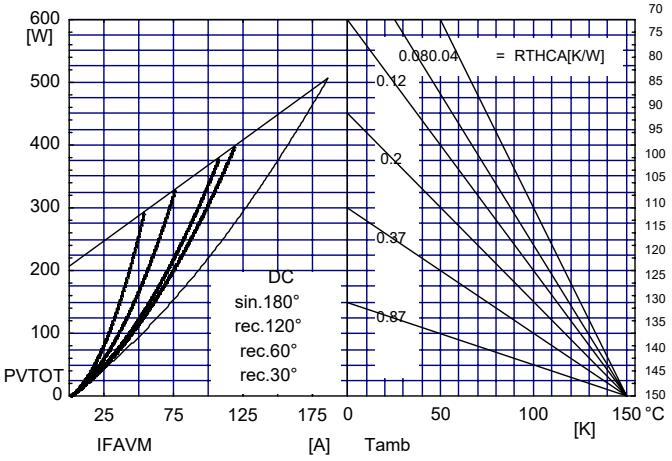

Fig. 4 Power dissipation versus direct output current and ambient temperature

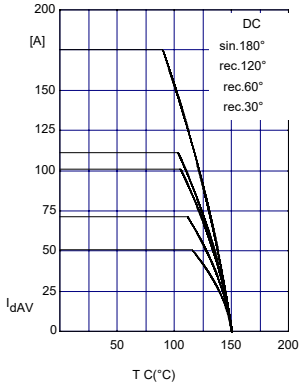

Fig.5 Maximum forward current at case temperature

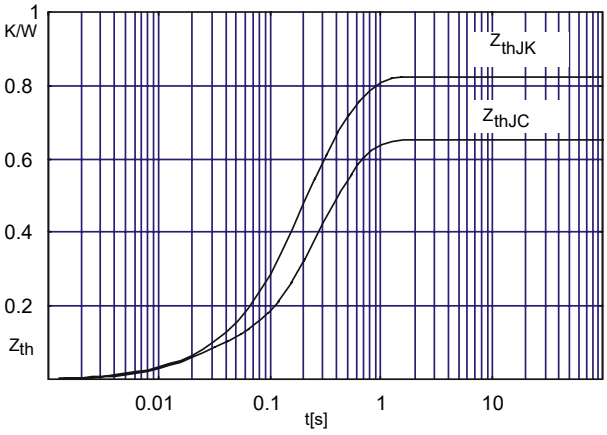

Fig. 6 Transient thermal impedance per diode (or thyristor), calculated

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