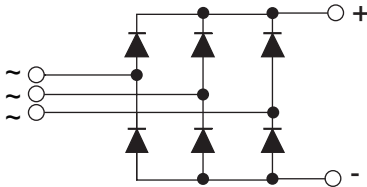


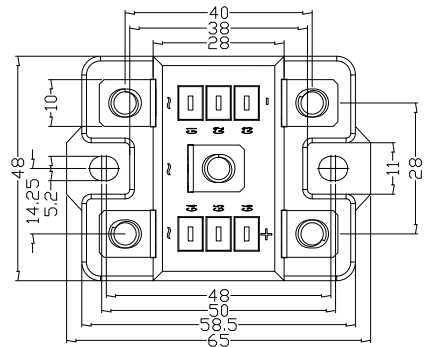
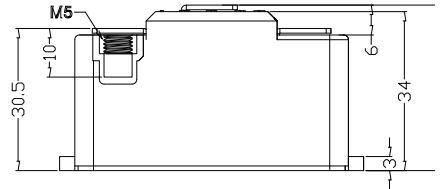
# S3PDB61NXX

## Three Phase Rectifier Modules



Type	V <sub>RSM</sub> V	V <sub>RRM</sub> V
S3PDB61N08	900	800
S3PDB61N12	1300	1200
S3PDB61N14	1500	1400
S3PDB61N16	1700	1600
S3PDB61N18	1900	1800

Dimensions in mm (1mm=0.0394")



Symbol	Test Conditions	Maximum Ratings	Unit
I <sub>dav</sub>	T <sub>C</sub> =100°C, module	61	A
I <sub>dav</sub>	T <sub>A</sub> =45°C (R <sub>thCA</sub> =0.6K/W), module	14	
I <sub>FSM</sub>	T <sub>VJ</sub> =45°C V <sub>R</sub> =0 t=10ms (50Hz), sine t=8.3ms (60Hz), sine	850 900	A
	T <sub>VJ</sub> =T <sub>VJM</sub> V <sub>R</sub> =0 t=10ms(50Hz), sine t=8.3ms(60Hz), sine	750 960	
I <sup>2</sup> t	T <sub>VJ</sub> =45°C V <sub>R</sub> =0 t=10ms (50Hz), sine t=8.3ms (60Hz), sine	3600 3900	A <sup>2</sup> s
	T <sub>VJ</sub> =T <sub>VJM</sub> V <sub>R</sub> =0 t=10ms(50Hz), sine t=8.3ms(60Hz), sine	3000 3600	
T <sub>VJ</sub> T <sub>VJM</sub> T <sub>stg</sub>		-40...+150 150 -40...+150	°C
V <sub>ISOL</sub>	50/60Hz, RMS I <sub>ISOL</sub> ≤1mA t=1min t=1s	2500 3000	V~
M <sub>d</sub>	Mounting torque (M5) Terminal connection torque (M5)	5 ± 15% 5 ± 15%	Nm
Weight	typ.	160	g



# S3PDB61

## Three Phase Rectifier Modules

Symbol	Test Conditions	Characteristic Values	Unit
<b>I<sub>R</sub></b>	V <sub>R</sub> =V <sub>RRM</sub> ; T <sub>VJ</sub> =25°C V <sub>R</sub> =V <sub>RRM</sub> ; T <sub>VJ</sub> =T <sub>VJM</sub>	≤ 0.3 ≤ 5	mA
<b>V<sub>F</sub></b>	I <sub>F</sub> =60A; T <sub>VJ</sub> =25 °C	≤ 1.25	V
<b>V<sub>TO</sub></b>	For power-loss calculations only	0.85	V
<b>r<sub>T</sub></b>	T <sub>VJ</sub> =T <sub>VJM</sub>	5	mΩ
<b>R<sub>thJC</sub></b>	per diode per module	0.96 0.16	K/W
<b>R<sub>thJK</sub></b>	per diode per module	1.60 0.27	K/W
<b>d<sub>s</sub></b>	Creeping distance on surface	10	mm
<b>d<sub>A</sub></b>	Creepage distance in air	9.4	mm
<b>a</b>	Max. allowable acceleration	50	m/s <sup>2</sup>

### FEATURES

- \* Package with screw terminals
- \* Isolation voltage 3000 V~
- \* Blocking voltage up to 1800 V
- \* Low forward voltage drop

### 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



# S3PDB61

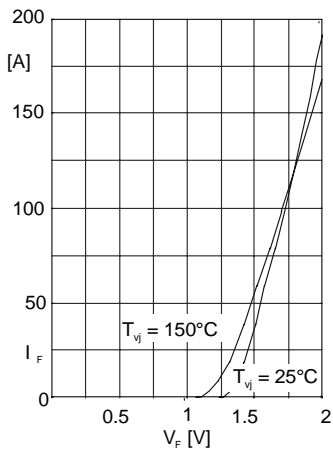


Fig. 1 Forward current versus voltage drop per diode

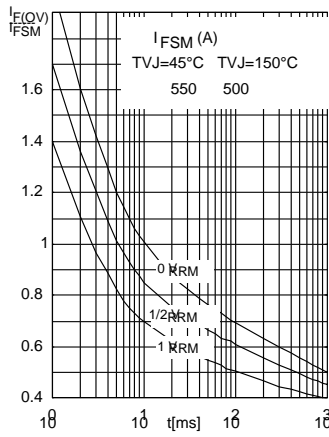


Fig. 2 Surge overload current per diode  $I_{FSM}$ : Crest value. t: duration

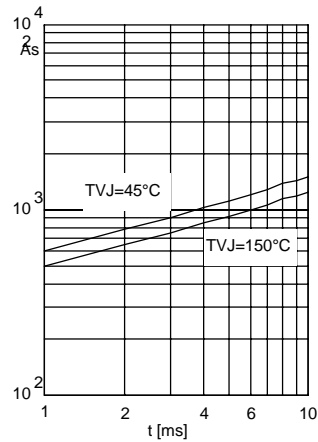


Fig. 3  $\int i^2 dt$  versus time (1-10ms) per diode (or thyristor)

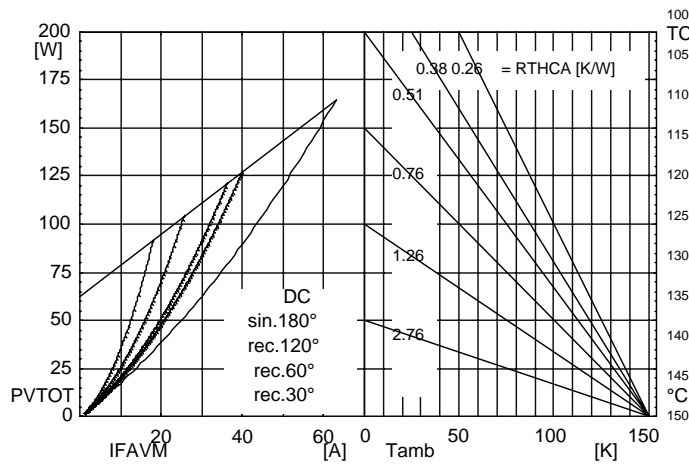


Fig. 4 Power dissipation versus direct output current and ambient temperature

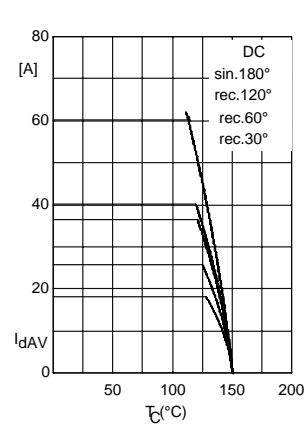


Fig. 5 Maximum forward current at case temperature

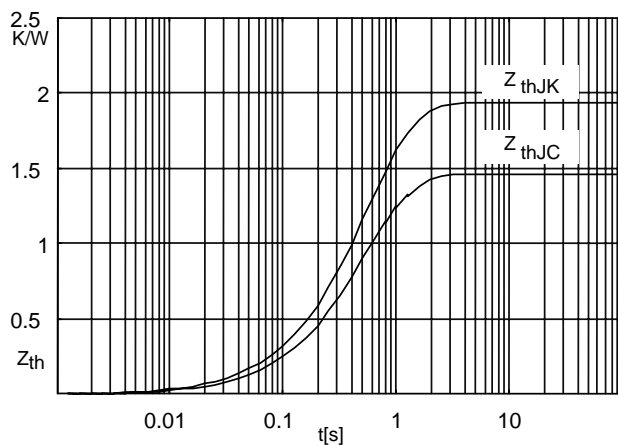


Fig. 6 Transient thermal impedance per diode calculated

