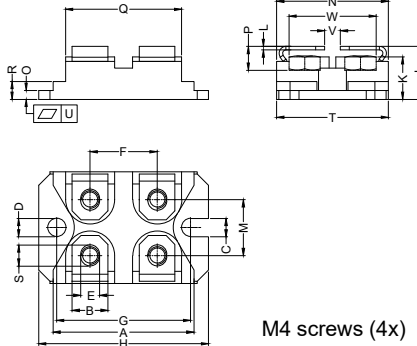
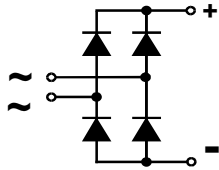


S1PDB40N12S

Single Phase Bridge Rectifier Modules



Dim.	Millimeter		Dim.	Millimeter	
	Min.	Max.		Min.	Max.
A	31.30	31.65	M	12.00	13.00
B	7.80	8.40	N	25.15	25.65
C	4.00	4.30	O	1.95	2.15
D	∅4.00	∅4.30	P	5.60	6.60
E	4.00	4.30	Q	25.30	26.30
F	14.90	15.20	R	3.90	4.30
G	30.10	30.30	S	4.45	4.85
H	38.00	38.50	T	24.50	25.10
J	12.10	12.90	U	0.05	0.10
K	9.00	9.60	V	3.00	4.80
L	0.75	0.85	W	19.30	20.50

Type	V _{RSM} V	V _{RRM} V
S1PDB40N08S	900	800
S1PDB40N10S	1100	1000
S1PDB40N12S	1300	1200
S1PDB40N14S	1500	1400
S1PDB40N16S	1700	1600
S1PDB40N18S	1900	1800

M4 screws (4x) supplied

Symbol	Test Conditions	Maximum Ratings	Unit
I _{dav}	T _C =110°C, diode	20	A
I _{dav}	T _A =45°C (R _{thCA} =0.6K/W), module	40	
I _{FSM}	T _{VJ} =45°C V _R =0	t=10ms(50Hz),sine t=8.3ms(60Hz),sine	A
	T _{VJ} =T _{VJM} V _R =0	t=10ms(50Hz),sine t=8.3ms(60Hz),sine	
I ² t	T _{VJ} =45°C V _R =0	t=10ms(50Hz),sine t=8.3ms(60Hz),sine	A ² s
	T _{VJ} =T _{VJM} V _R =0	t=10ms(50Hz),sine t=8.3ms(60Hz),sine	
T _{vj} T _{vjm} T _{stg}		-40...+150 150 -40...+125	°C
V _{isol}	50/60Hz, RMS I _{isol} ≤1mA	2500	V~
M _d	Mounting torque (M4) Terminal connection torque (M4)	1.5 1.5	Nm
Weight	typ.	30	g

S1PDB40N12S

Single Phase Bridge Rectifier Modules

Symbol	Test Conditions	Characteristic Values	Unit
I_R	$V_R=V_{RRM}; T_{VJ}=25^{\circ}C$ $V_R=V_{RRM}; T_{VJ}=T_{VJM}$	≤ 0.3 ≤ 5	mA
V_F	$I_F=20A; T_{VJ}=25^{\circ}C$	≤ 1.15	V
V_{TO}	For power-loss calculations only	0.8	V
r_T	$T_{VJ}=T_{VJM}$	13	m Ω
R_{thJC}	per diode per module	1.7 0.42	K/W
R_{thCH}	per diode per module	0.3 0.08	K/W
d_s	Creeping distance on surface	8	mm
d_A	Creepage distance in air	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

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

S1PDB40N12S

Single Phase Bridge Rectifier Modules

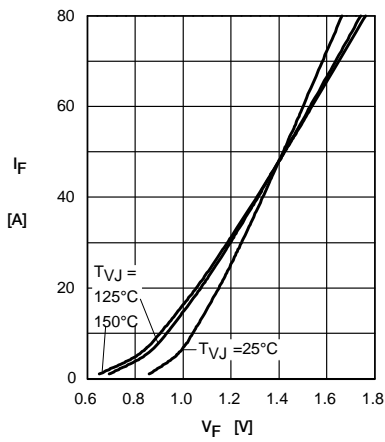


Fig. 1 Forward current vs. voltage drop per diode

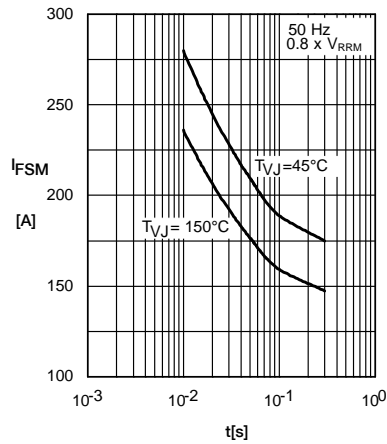


Fig. 2 Surge overload current vs. time per diode

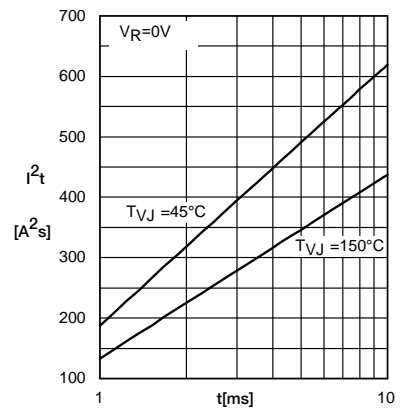


Fig. 3 I^2t vs. time per diode

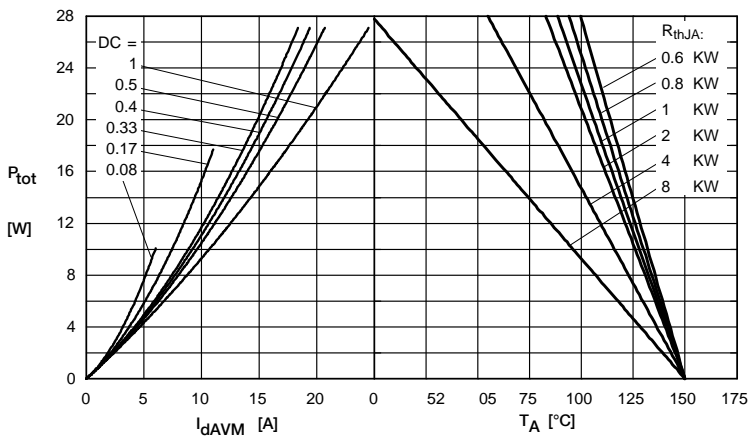


Fig. 4 Power dissipation vs. forward current and ambient temperature per diode

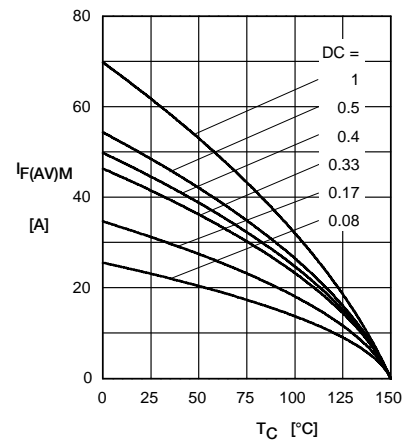


Fig. 5 Max. forward current vs. case temperature per diode

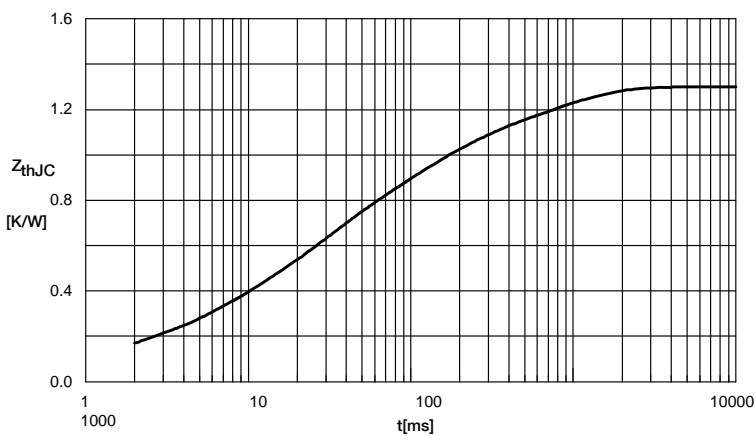


Fig. 6 Transient thermal impedance junction to case vs. time per diode

Constants for Z_{thJC} calculation:

i	$R_{th}(K/W)$	$t_i(s)$
1	0.061	0.0002
2	0.145	0.0036
3	0.398	0.0200
4	0.405	0.1000
5	0.291	0.7000