

S1PDBF100N12E2

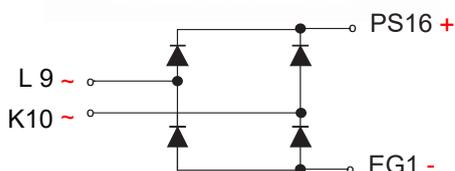
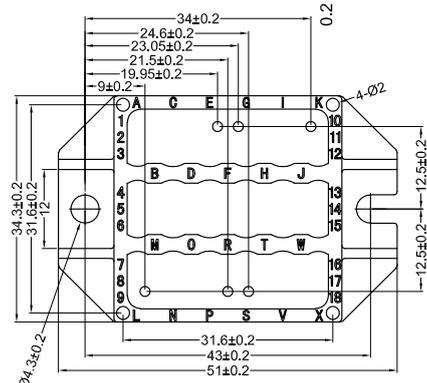
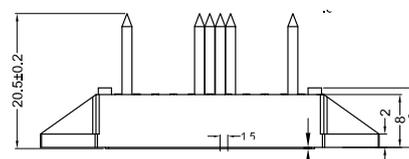
Single Phase Rectifier Bridge With FRED



L9~ PS16+

Type	V _{RSM} V	V _{RRM} V
S1PDBF100N12E2	1200	1200

Dimensions in mm (1mm=0.0394")



Symbol	Test Conditions	Maximum Ratings	Unit
I _{dav} I _{davm}	T _C =70°C, module T _A =45°C (R _{thCA} =0.6K/W), module	100 100	A
I _{FSM}	T _{VJ} =45°C V _R =0 t=10ms (50Hz), sine t=8.3ms (60Hz), sine	500 525	A
	T _{VJ} =T _{VJM} V _R =0 t=10ms(50Hz), sine t=8.3ms(60Hz), sine	415 440	
I ² t	T _{VJ} =45°C V _R =0 t=10ms (50Hz), sine t=8.3ms (60Hz), sine	1250 1160	A ² s
	T _{VJ} =T _{VJM} V _R =0 t=10ms(50Hz), sine t=8.3ms(60Hz), sine	860 820	
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 (M4) Terminal connection torque (M4)	1.5-2.0 1.5-2.0	Nm
Weight	typ.	24	g

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Symbol	Test Conditions	Characteristic Values		Unit
		Typ.	Max	
I_R	$V_R=V_{RRM}; T_{VJ}=25^{\circ}C$ $V_R=V_{RRM}; T_{VJ}=T_{VJM}$		1.00 2.50	mA
V_F	$I_F=60A; T_{VJ}=25^{\circ}C$		2.70	V
V_{FO}	For power-loss calculations only		1.07	V
r_F	$T_{VJ}=T_{VJM}$		8.20	m Ω
R_{thJC}	per diode per module		0.80 0.20	K/W
R_{thCH}	per diode per module		0.20 0.05	K/W
I_{RM}	$I_F = 130 A, -di_F/dt = 100 A/\mu s$ $V_R = 100 V, L = 0.05 mH, T_{VJ} = 100^{\circ}C$	7	15.0	A
t_{tr}	$I_F = 1 A; -di/dt = 100 A/\mu s; V_R = 30 V, T_{VJ} = 25^{\circ}C$	40		ns
d_s	Creeping distance on surface		11.20	mm
d_A	Creepage distance in air		9.7	mm
a	Max. allowable acceleration		50	m/s ²

FEATURES

- Package with DCB ceramic base plate in low profile
- Isolation voltage 3000 V~
- Planar passivated chips
- Low forward voltage drop
- Leads suitable for PC board soldering

APPLICATIONS

- Supplies for DC power equipment
- Input and output rectifiers for high frequency
- Battery DC power supplies
- Field supply for DC motors

ADVANTAGES

- Space and weight savings
- Improved temperature and power cycling capability
- Small and light weight
- Low noise switching

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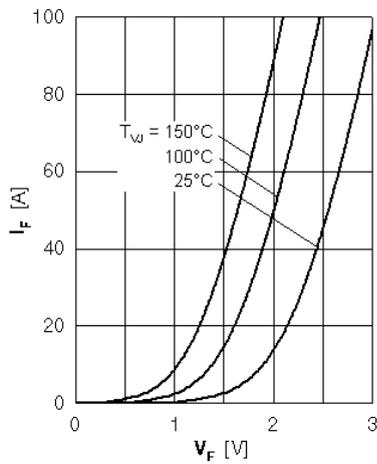


Fig. 1 Forward current I_F vs. V_F

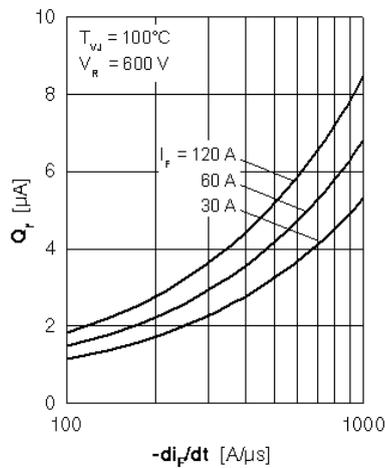


Fig. 2 Reverse recovery charge Q_r versus $-di_F/dt$

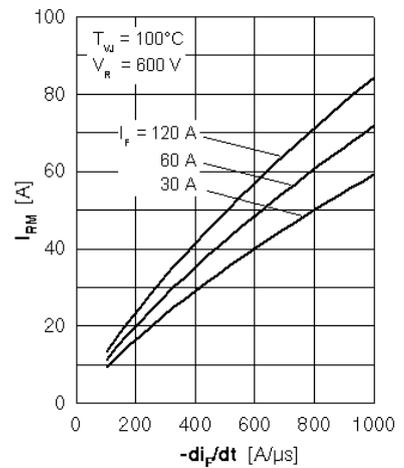


Fig. 3 Peak reverse current I_{RM} versus $-di_F/dt$

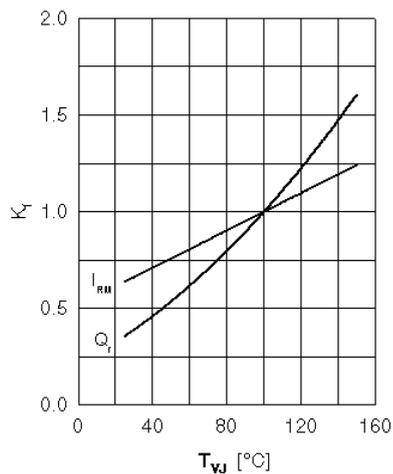


Fig. 4 Dynamic parameters Q_r , I_{RM} versus T_{WJ}

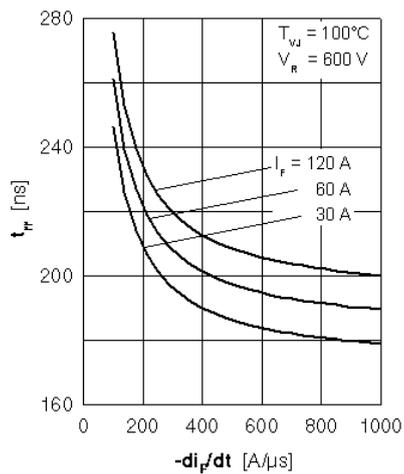


Fig. 5 Recovery time t_{tr} versus $-di_F/dt$

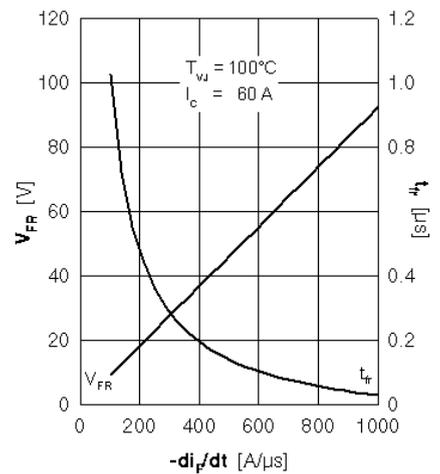


Fig. 6 Peak forward voltage V_{FR} and t_{tr} versus di_F/dt

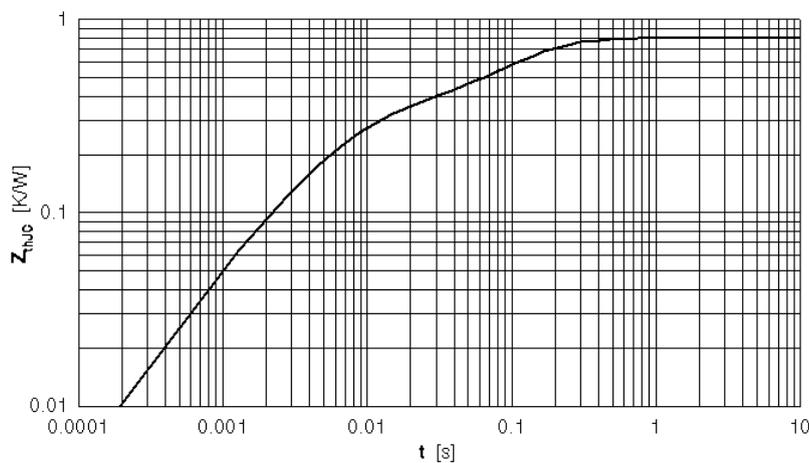


Fig. 7 Typical transient thermal resistance junction to case