

Single Phase Rectifier Bridge

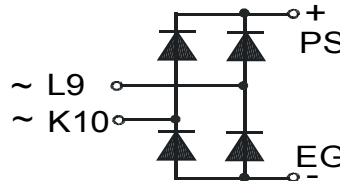
PSB 100F

with fast Recovery Epitaxial Diode (FRED)

$$\begin{aligned} I_{dAV} &= 100 \text{ A} \\ V_{RRM} &= 400 - 600 \text{ V} \\ t_{rr} &= 35 \text{ ns} \end{aligned}$$

Preliminary Data Sheet

V_{RSM} V_{DSM} (V)	V_{RRM} V_{DRM} (V)	Type
400	400	PSB 100F/04
600	600	PSB 100F/06



Symbol	Test Conditions	Maximum Ratings
I_{dAV}^*	$T_C = 85^\circ\text{C}$, (per module)	100 A
I_{FSM}	$T_{VJ} = 45^\circ\text{C}$ $t = 10 \text{ ms}$ (50 Hz), sine	600 A
	$V_R = 0$ $t = 8.3 \text{ ms}$ (60 Hz), sine	660 A
	$T_{VJ} = T_{VJM}$ $t = 10 \text{ ms}$ (50 Hz), sine	540 A
	$V_R = 0$ $t = 8.3 \text{ ms}$ (60 Hz), sine	590 A
$\int i^2 dt$	$T_{VJ} = 45^\circ\text{C}$ $t = 10 \text{ ms}$ (50 Hz), sine	1800 A ² s
	$V_R = 0$ $t = 8.3 \text{ ms}$ (60 Hz), sine	1810 A ² s
	$T_{VJ} = T_{VJM}$ $t = 10 \text{ ms}$ (50 Hz), sine	1450 A ² s
	$V_R = 0$ $t = 8.3 \text{ ms}$ (60 Hz), sine	1440 A ² s
T_{VJ}		-40... + 150 °C
T_{VJM}		150 °C
T_{stg}		-40... + 125 °C
V_{ISOL}	50/60 Hz, RMS $t = 1 \text{ min}$	3000 V~
	$I_{ISOL} \leq 1 \text{ mA}$ $t = 1 \text{ s}$	3600 V~
M_d	Mounting torque (M4)	1.5 - 2.0 Nm
		14 - 18 lb.in.
Weight	typ.	22 g

Features

- Package with DCB ceramic base plate
- Isolation voltage 3000 V~
- Planar glass passivated chips
- Low forward voltage drop
- Leads suitable for PC board soldering
- UL registered, E 148688

Applications

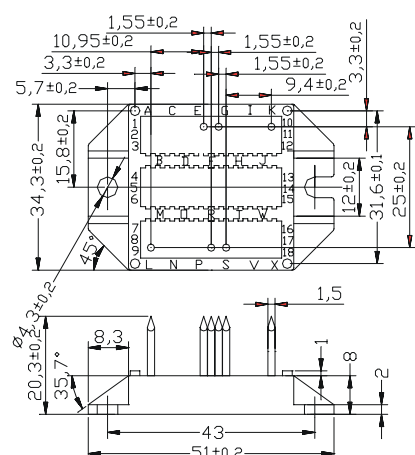
- Supplies for DC power equipment
- Input and output rectifier for high frequency
- Battery DC power supplies
- Field supply for DC motors

Advantages

- Easy to mount with two screws
- Space and weight savings
- Improved temperature and power cycling capability
- Low noise switching
- Small and light weight

Package style and outline

Dimensions in mm (1mm = 0.0394")



Symbol	Test Conditions	Characteristic Value
I_R	$V_R = V_{RRM}$, $T_{VJ} = T_{VJM}$	$\leq 2.5 \text{ mA}$
	$V_R = V_{RRM}$, $T_{VJ} = 25^\circ\text{C}$	$\leq 0.65 \text{ mA}$
V_F	$I_F = 60 \text{ A}$, $T_{VJ} = 25^\circ\text{C}$	$\leq 1.35 \text{ V}$
V_{TO}	For power-loss calculations only	1.09 V
r_T		4.3 mΩ
R_{thJC}	per diode; DC	0.85 K/W
	per module	0.21 K/W
R_{thJK}	per diode; DC	1.0 K/W
	per module	0.25 K/W
I_{RM}	$I_F = 130 \text{ A}$; $-di_F/dt = 100 \text{ A}/\mu\text{s}$; $V_R = 100 \text{ V}$ $L = 0.05 \text{ mH}$; $T_{VJ} = 100^\circ\text{C}$	typ. 4.0 A
t_{rr}	$I_F = 1 \text{ A}$; $-di_F/dt = 200 \text{ A}/\mu\text{s}$; $V_R = 30 \text{ V}$; $T_{VJ} = 25^\circ\text{C}$	typ. 35 ns
d_s	Creeping distance on surface	11.2 mm
d_A	Creeping distance in air	9.45 mm
a	Max. allowable acceleration	50 m/s ²

Data according to IEC 60747 refer to a single diode unless otherwise stated
*- for resistive load at bridge output