

Fast Recovery Epitaxial Diode (FRED) Module

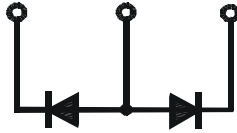
PSND 200E

$I_{FAV} = 312 \text{ A}$
 $V_{RRM} = 800-1200 \text{ V}$

Preliminary Data Sheet



V_{RSM} V	V_{RRM} V	Type
800	800	PSND 200E/08
1000	1000	PSND 200E/10
1200	1200	PSND 200E/12



Symbol	Test Conditions	Maximum Ratings
I_{FAV}	$T_C = 70^\circ\text{C}$	312 A
I_{FSM}	$T_{VJ} = 45^\circ\text{C}$ $t = 10 \text{ ms}$ (50 Hz), sine	3200 A
	$V_R = 0$ $t = 8.3 \text{ ms}$ (60 Hz), sine	3500 A
	$T_{VJ} = T_{VJM}$ $t = 10 \text{ ms}$ (50 Hz), sine	2900 A
	$V_R = 0$ $t = 8.3 \text{ ms}$ (60 Hz), sine	3200 A
$\int i^2 dt$	$T_{VJ} = 45^\circ\text{C}$ $t = 10 \text{ ms}$ (50 Hz), sine	51200 $\text{A}^2 \text{ s}$
	$V_R = 0$ $t = 8.3 \text{ ms}$ (60 Hz), sine	50800 $\text{A}^2 \text{ s}$
	$T_{VJ} = T_{VJM}$ $t = 10 \text{ ms}$ (50 Hz), sine	42000 $\text{A}^2 \text{ s}$
	$V_R = 0$ $t = 8.3 \text{ ms}$ (60 Hz), sine	42500 $\text{A}^2 \text{ s}$
T_{VJ}		-40 ... +150 $^\circ\text{C}$
T_{VJM}		150 $^\circ\text{C}$
T_{stg}		-40 ... +125 $^\circ\text{C}$
V_{ISOL}	50/60 HZ, RMS $t = 1 \text{ min}$	2500 V ~
	$I_{ISOL} \leq 1 \text{ mA}$ $t = 1 \text{ s}$	3000 V ~
M_d	Mounting torque (M6)	5 Nm
	Terminal connection torque (M6)	5 Nm
Weight	typ.	270 g

Features

- Package with screw terminals
- Isolation voltage 3000 V~
- Planar glasspassivated chips
- Short recovery time
- Low forward voltage drop
- Short recovery behaviour
- UL registered, E 148688

Applications

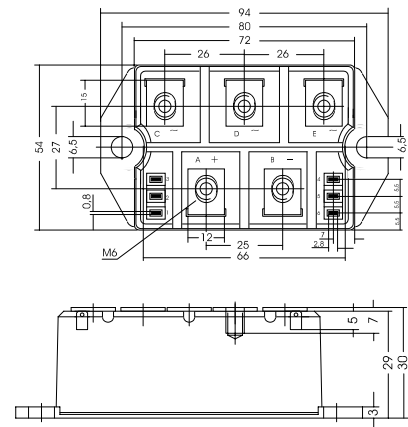
- Inductive heating and melting
- Free wheeling diode in converters and motor control circuits
- Uninterruptible power supplies (UPS)
- Ultrasonic cleaners and welders

Advantages

- High reliability circuit operation
- Low voltage peaks for reduced protection circuits
- Low noise switching
- Low losses

Package, style and outline

Dimensions in mm (1mm = 0.0394")



Symbol	Test Conditions	Characteristic Value
I_R	$V_R = V_{RRM}$ $T_{VJ} = 25^\circ\text{C}$	$\leq 3.4 \text{ mA}$
	$V_R = V_{RRM}$ $T_{VJ} = T_{VJM}$	$\leq 35 \text{ mA}$
V_F	$I_F = 200 \text{ A}$ $T_{VJ} = 25^\circ\text{C}$	$\leq 1.55 \text{ V}$
t_{rr}	$T_{VJ} = 25^\circ\text{C}$	typ. 150 ns
V_{TO}	For power-loss calculations only	0.3 V
r_T	$T_{VJ} = T_{VJM}$	0.75 $\text{m}\Omega$
R_{thJC}	per diode; DC current	0.28 K/W
	per module	0.14 K/W
R_{thJH}	per diode; DC current	0.38 K/W
	per module	0.19 K/W
d_s	Creeping distance on surface	10 mm
d_A	Creeping distance in air	9.4 mm
a	Max. allowable acceleration	50 m/s^2