

Fast Recovery Epitaxial Diode (FRED) Module

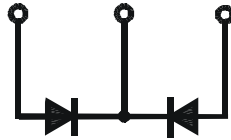
PSMD 200E

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

Preliminary Data Sheet



V_{RSM} V	V_{RRM} V	Type
800	800	PSMD 200E/08
1000	1000	PSMD 200E/10
1200	1200	PSMD 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
		$t = 8.3 \text{ ms}$ (60 Hz), sine	3500	A
	$T_{VJ} = T_{VJM}$	$t = 10 \text{ ms}$ (50 Hz), sine	2900	A
		$t = 8.3 \text{ ms}$ (60 Hz), sine	3200	A
$\int i^2 dt$	$T_{VJ} = 45^\circ\text{C}$	$t = 10 \text{ ms}$ (50 Hz), sine	51200	$\text{A}^2 \text{ s}$
		$t = 8.3 \text{ ms}$ (60 Hz), sine	50800	$\text{A}^2 \text{ s}$
	$T_{VJ} = T_{VJM}$	$t = 10 \text{ ms}$ (50 Hz), sine	42000	$\text{A}^2 \text{ s}$
		$t = 8.3 \text{ ms}$ (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	$\text{V} \sim$
	$I_{ISOL} \leq 1 \text{ mA}$	$t = 1 \text{ s}$	3000	$\text{V} \sim$
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

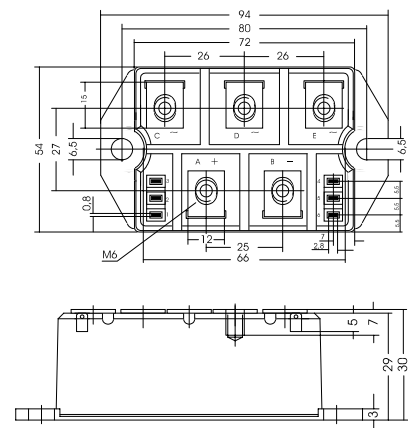
- Inductive heating and melting
- Free wheeling diode in converters and motor control circuits
- Uninterruptible power supplies (UPS)
- Ultrasonic cleaners and welders

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 mA
	$V_R = V_{RRM}$	$T_{VJ} = T_{VJM}$	$\leq$	35 mA
V_F	$I_F = 200 \text{ A}$	$T_{VJ} = 25^\circ\text{C}$	$\leq$	1.55 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 m Ω
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