

Fast Recovery Epitaxial Diode (FRED) Module

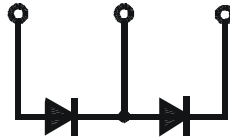
PSKD 150E

I_{FAV} = 272 A
 V_{RRM} = 200-600V

Preliminary Data Sheet



V_{RSM} V	V_{RRM} V	Type
200	200	PSKD 150E/02
400	400	PSKD 150E/04
600	600	PSKD 150E/06



Symbol	Test Conditions	Maximum Ratings
I_{FAV}	$T_C = 70^\circ\text{C}$	272 A
I_{FSM}	$T_{VJ} = 45^\circ\text{C}$ $V_R = 0$ $t = 10\text{ ms}$ (50 Hz), sine	3000 A
	$t = 8.3\text{ ms}$ (60 Hz), sine	3300 A
	$T_{VJ} = T_{VJM}$ $V_R = 0$ $t = 10\text{ ms}$ (50 Hz), sine	2700 A
	$t = 8.3\text{ ms}$ (60 Hz), sine	3000 A
$\int i^2 dt$	$T_{VJ} = 45^\circ\text{C}$ $V_R = 0$ $t = 10\text{ ms}$ (50 Hz), sine	45000 $\text{A}^2\text{ s}$
	$t = 8.3\text{ ms}$ (60 Hz), sine	45200 $\text{A}^2\text{ s}$
	$T_{VJ} = T_{VJM}$ $V_R = 0$ $t = 10\text{ ms}$ (50 Hz), sine	36400 $\text{A}^2\text{ s}$
	$t = 8.3\text{ ms}$ (60 Hz), sine	37300 $\text{A}^2\text{ s}$
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

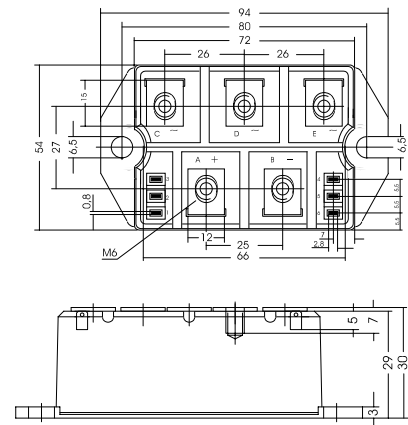
- Inductive heating and melting
- Free wheeling diode in converters and motor control circuits
- Uninterruptible power supplies (UPS)
- Ultrasonic cleaners and welders

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	$V_R = V_{RRM}$ $T_{VJ} = 25^\circ\text{C}$ max.	12 mA
	$V_R = 0.8 \cdot V_{RRM}$ $T_{VJ} = 25^\circ\text{C}$ max.	3 mA
	$V_R = 0.8 \cdot V_{RRM}$ $T_{VJ} = T_{VJM}$ max.	80 mA
V_F	$I_F = 150\text{ A}$ $T_{VJ} = 25^\circ\text{C}$	$\leq 1.25\text{ V}$
t_{rr}	$T_{VJ} = 25^\circ\text{C}$; $I_F = 1\text{ A}$; $-di_F/dt = 400\text{ A}/\mu\text{s}$ $V_R = 30\text{ V}$	typ. 60 ns
I_{RM}	$I_F = 100\text{ A}$; $-di_F/dt = 200\text{ A}/\mu\text{s}$; $V_R = 100\text{ V}$ $L \leq 0.05\text{ mH}$; $T_{VJ} = 100^\circ\text{C}$	typ. 45 A
V_{TO}	For power-loss calculations only	0.3 V
r_T	$T_{VJ} = T_{VJM}$	0.55 $\text{m}\Omega$
R_{thJH}	per diode; DC current	0.57 K/W
R_{thJC}	per diode; DC current	0.42 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

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