

Fast Recovery Epitaxial Diode (FRED) Module

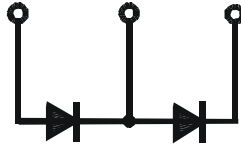
PSKD 50E

$$I_{FAV} = 50 \text{ A}$$

$$V_{RRM} = 800-1200 \text{ V}$$

Preliminary Data Sheet

V_{RSM} V	V_{RRM} V	Type
800	800	PSKD 50E/08
1000	1000	PSKD 50E/10
1200	1200	PSKD 50E/12



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

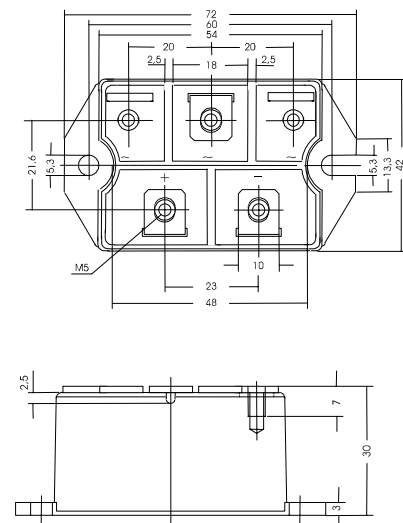
- Inductive heating and melting
- Free wheeling diode in converters and motor control circuits
- Uninterruptible power supplies (UPS)
- Ultrasonic cleaners and welders

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			Maximum Ratings	
I_{FAV}	$T_C = 85^\circ\text{C}$			50	A
I_{FSM}	$T_{VJ} = 45^\circ\text{C}$	$t = 10 \text{ ms}$	(50 Hz), sine	600	A
		$t = 8.3 \text{ ms}$	(60 Hz), sine	660	A
	$T_{VJ} = T_{VJM}$	$t = 10 \text{ ms}$	(50 Hz), sine	540	A
		$t = 8.3 \text{ ms}$	(60 Hz), sine	590	A
$\int i^2 dt$	$T_{VJ} = 45^\circ\text{C}$	$t = 10 \text{ ms}$	(50 Hz), sine	1800	$\text{A}^2 \text{ s}$
		$t = 8.3 \text{ ms}$	(60 Hz), sine	1800	$\text{A}^2 \text{ s}$
	$T_{VJ} = T_{VJM}$	$t = 10 \text{ ms}$	(50 Hz), sine	1450	$\text{A}^2 \text{ s}$
		$t = 8.3 \text{ ms}$	(60 Hz), sine	1440	$\text{A}^2 \text{ s}$
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	(M5)		5	Nm
	Terminal connection torque	(M5)		5	Nm
Weight	typ.			160	g

Symbol	Test Conditions			Characteristic Value	
I_R	$V_R = V_{RRM}$	$T_{VJ} = 25^\circ\text{C}$	$\leq$	150	μA
	$V_R = V_{RRM}$	$T_{VJ} = T_{VJM}$	$\leq$	15	mA
V_F	$I_F = 50 \text{ A}$	$T_{VJ} = 25^\circ\text{C}$	$\leq$	2.0	V
t_{rr}	$T_{VJ} = 25^\circ\text{C}$, $I_F = 1 \text{ A}$; $-di/dt = 100 \text{ A}/\mu\text{s}$; $V_R = 30 \text{ V}$			typ. 100	ns
V_{TO}	For power-loss calculations only			1.1	V
r_T	$T_{VJ} = T_{VJM}$			2.6	$\text{m}\Omega$
R_{thJC}	per diode; DC current			0.9	K/W
	per module			0.45	K/W
R_{thJK}	per diode; DC current			1.1	K/W
	per module			0.55	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