

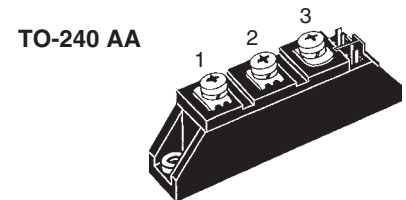
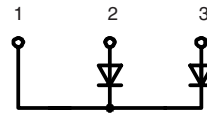
Fast Recovery Epitaxial Diode (FRED) Module

$$V_{RRM} = 600 \text{ V}$$

$$I_{FAV} = 95 \text{ A}$$

$$t_{rr} = 35 \text{ ns}$$

V_{RSM}	V_{RRM}	Type
V	V	
600	600	MPK 95-06 DA



Symbol	Conditions	Maximum Ratings	
I_{FRMS}		200	A
I_{FAV} ①	$T_C = 110^\circ\text{C}$; sine 180°	95	A
I_{FSM}	$T_{VJ} = 45^\circ\text{C}$; $t = 10 \text{ ms}$ (50 Hz), sine	1200	A
	$t = 8.3 \text{ ms}$ (60 Hz), sine	1280	A
	$T_{VJ} = 150^\circ\text{C}$; $t = 10 \text{ ms}$ (50 Hz), sine	1070	A
	$t = 8.3 \text{ ms}$ (60 Hz), sine	1140	A
I^2t	$T_{VJ} = 45^\circ\text{C}$; $t = 10 \text{ ms}$ (50 Hz), sine	7200	A^2s
	$t = 8.3 \text{ ms}$ (60 Hz), sine	6900	A^2s
	$T_{VJ} = 150^\circ\text{C}$; $t = 10 \text{ ms}$ (50 Hz), sine	5700	A^2s
	$t = 8.3 \text{ ms}$ (60 Hz), sine	5500	A^2s
T_{VJ}		-40...+150	$^\circ\text{C}$
T_{stg}		-40...+125	$^\circ\text{C}$
P_{tot}	$T_C = 25^\circ\text{C}$	215	W
V_{ISOL}	50/60 Hz, RMS; $t = 1 \text{ s}$	3600	V~
M_d	Mounting/Terminal torque (M5)	2.5-4	Nm
d_s	Creep distance on surface	12.7	mm
d_A	Strike distance through air	9.6	mm
a	Maximum allowable acceleration	50	m/s^2
Weight		90	g

Features

- International standard package with DCB ceramic base plate
- Planar passivated chips
- Short recovery time
- Low switching losses
- Soft recovery behaviour
- Isolation voltage 3600 V~

Applications

- Antiparallel diode for high frequency switching devices
- Free wheeling diode in converters and motor control circuits
- Inductive heating and melting
- 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

Symbol	Conditions	Characteristic Values (per diode)	
		typ.	max.
I_R	$V_R = V_{RRM}$	$T_{VJ} = 25^\circ\text{C}$ $T_{VJ} = 125^\circ\text{C}$	1.3 5 mA
V_F	$I_F = 50 \text{ A}$;	$T_{VJ} = 125^\circ\text{C}$	1.22 V
		$T_{VJ} = 25^\circ\text{C}$	1.73 V
	$I_F = 100 \text{ A}$;	$T_{VJ} = 125^\circ\text{C}$	1.40 V
		$T_{VJ} = 25^\circ\text{C}$	1.89 V
V_{T0}	For power-loss calculations only		0.98 V
r_T	$T_{VJ} = 150^\circ\text{C}$		2.3 $\text{m}\Omega$
R_{thJC}	DC current		0.575 K/W
R_{thCH}	DC current	0.1	K/W
t_{rr}	$I_F = 1 \text{ A}$; $V_R = 30 \text{ V}$; $-di/dt = 300\text{A}/\mu\text{s}$	$T_{VJ} = 25^\circ\text{C}$	35 ns
I_{RM}	$I_F = 130 \text{ A}$; $V_R = 100 \text{ V}$; $-di/dt = 100\text{A}/\mu\text{s}$	$T_{VJ} = 25^\circ\text{C}$	4 A
		$T_{VJ} = 100^\circ\text{C}$	6.8 A

① I_{FAV} rating includes reverse blocking losses at T_{VJM} , $V_R = 0.6 V_{RRM}$, duty cycle $d = 0.5$
Data according to IEC 60747 and per diode unless otherwise specified

Dimensions in mm (1 mm = 0.0394")

