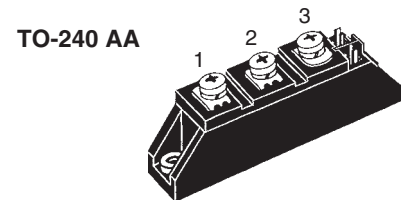
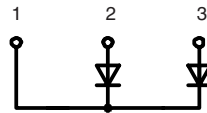


# Fast Recovery Epitaxial Diode (FRED) Module

$V_{RRM} = 600 \text{ V}$   
 $I_{FAV} = 95 \text{ A}$   
 $t_{rr} = 35 \text{ ns}$

$V_{RSM}$	$V_{RRM}$	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 ms (50 Hz), sine	1200	A
	t = 8.3 ms (60 Hz), sine	1280	A
	$T_{VJ} = 150^\circ\text{C}$ ; t = 10 ms (50 Hz), sine	1070	A
	t = 8.3 ms (60 Hz), sine	1140	A
$I^2t$	$T_{VJ} = 45^\circ\text{C}$ ; t = 10 ms (50 Hz), sine	7200	A <sup>2</sup> s
	t = 8.3 ms (60 Hz), sine	6900	A <sup>2</sup> s
	$T_{VJ} = 150^\circ\text{C}$ ; t = 10 ms (50 Hz), sine	5700	A <sup>2</sup> s
	t = 8.3 ms (60 Hz), sine	5500	A <sup>2</sup> s
$T_{VJ}$		-40...+150	°C
$T_{stg}$		-40...+125	°C
$P_{tot}$	$T_C = 25^\circ\text{C}$	215	W
$V_{ISOL}$	50/60 Hz, RMS; t = 1 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 <sup>2</sup>
<b>Weight</b>		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
$V_F$	$I_F = 50 \text{ A}$ ; $I_F = 100 \text{ A}$ ;	$T_{VJ} = 125^\circ\text{C}$	1.22 V
		$T_{VJ} = 25^\circ\text{C}$	1.73 V
		$T_{VJ} = 125^\circ\text{C}$	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 mΩ
$R_{thJC}$	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
		$T_{VJ} = 100^\circ\text{C}$	5.5 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")

