

**Silicon Fast  
Recovery Diode**
**FR40K05 thru  
FR40MR05**
 $V_{RRM} = 100\text{ V} - 1000\text{ V}$ 
 $I_F = 40\text{ A}$ 
**Features**

- High Surge Capability
- Types up to 1000 V  $V_{RRM}$

**DO-5 Package**
**Note:**

1. Standard polarity: Stud is cathode.
2. Reverse polarity (R): Stud is anode.
3. Stud is base.


**Maximum ratings, at  $T_J = 25\text{ }^\circ\text{C}$ , unless otherwise specified ("R" devices have leads reversed)**

Parameter	Symbol	Conditions	FR40K(R)05	FR40M(R)05	Unit
Repetitive peak reverse voltage	$V_{RRM}$		800	1000	V
RMS reverse voltage	$V_{RRMS}$		580	700	V
DC blocking voltage	$V_{DC}$		800	1000	V
Continuous forward current	$I_F$	$T_C \leq 100\text{ }^\circ\text{C}$	40	40	A
Surge non-repetitive forward current, Half Sine Wave	$I_{F,SH}$	$T_C = 25\text{ }^\circ\text{C}$ , $t_b = 8.3\text{ ms}$	500	500	A
Operating temperature	$T_J$		-40 to 125	-40 to 125	$^\circ\text{C}$
Storage temperature	$T_{stg}$		-40 to 150	-40 to 150	$^\circ\text{C}$

**Electrical characteristics, at  $T_J = 25\text{ }^\circ\text{C}$ , unless otherwise specified**

Parameter	Symbol	Conditions	FR40K(R)05	FR40M(R)05	Unit
Diode forward voltage	$V_F$	$I_F = 40\text{ A}$ , $T_J = 25\text{ }^\circ\text{C}$	1.4	1.4	V
Reverse current	$I_R$	$V_R = 100\text{ V}$ , $T_J = 25\text{ }^\circ\text{C}$	25	25	$\mu\text{A}$
		$V_R = 100\text{ V}$ , $T_J = 125\text{ }^\circ\text{C}$	10	10	mA

**Recovery Time**

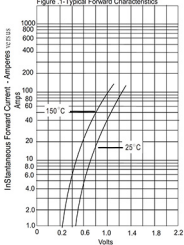
Maximum reverse recovery time	$T_{RR}$	$I_F = 0.5\text{ A}$ , $I_R = 1.0\text{ A}$ , $I_{RR} = 0.25\text{ A}$	500	500	nS
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**Thermal characteristics**

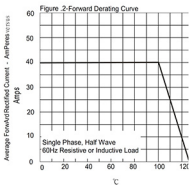
Thermal resistance, junction - case	$R_{\theta JC}$		0.8	0.8	$^\circ\text{C/W}$
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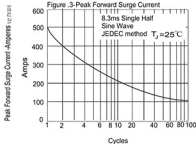
Figure 1-Typical Forward Characteristics



Instantaneous Forward Voltage - Volts



Case Temperature - °C



Number Of Cycles At 60Hz - Cycles

