



# Silicon Fast Recovery Diode

## FR40K05 thru FR40MR05

$V_{RRM} = 100\text{ V} - 1000\text{ V}$

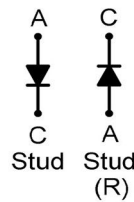
$I_F = 40\text{ A}$

### Features

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

### Note:

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



DO-5 Package



### 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	$V_{RMS}$		560	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	$I_{F,SM}$	$T_C = 25\text{ }^\circ\text{C}$ , $t_p = 8.3\text{ ms}$	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
<b>Recovery Time</b>					
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
<b>Thermal characteristics</b>					
Thermal resistance, junction - case	$R_{thJC}$		0.8	0.8	$^\circ\text{C/W}$

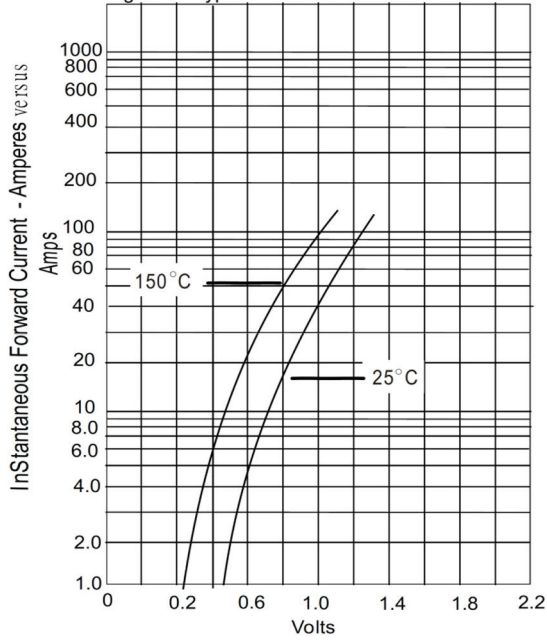




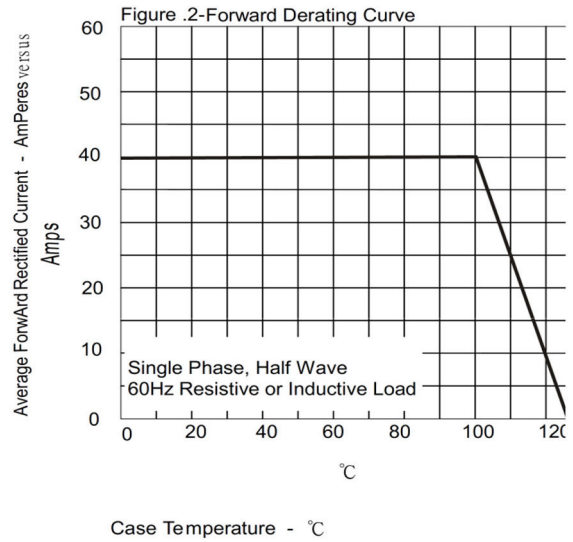
# America Semiconductor

## FR40K05 thru FR40MR05

Figure .1-Typical Forward Characteristics

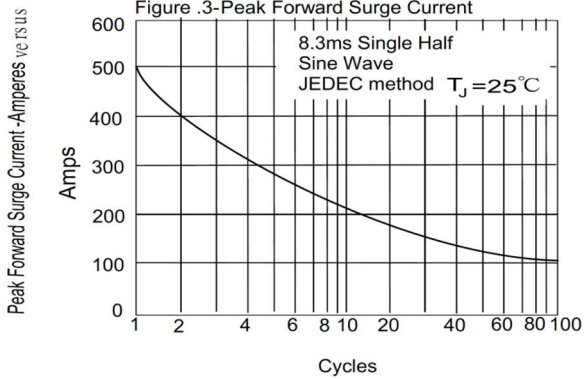


Instantaneous Forward Voltage - Volts



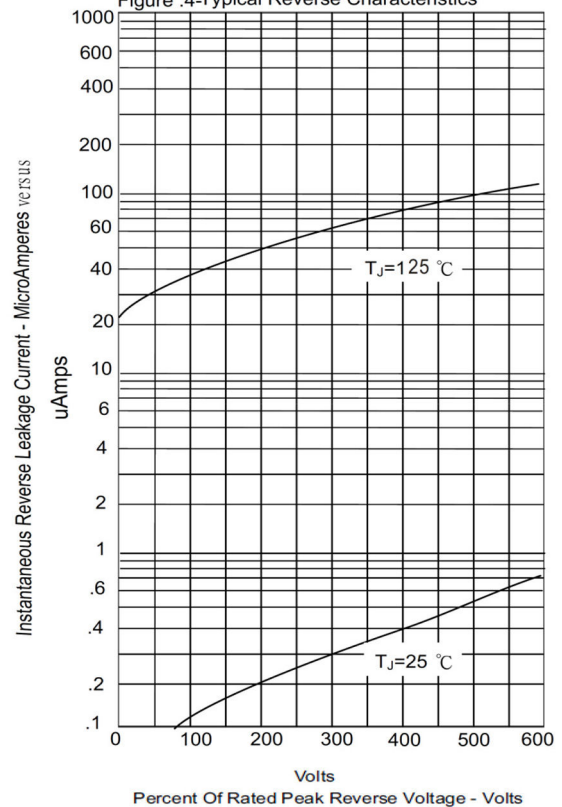
Case Temperature - °C

Figure .3-Peak Forward Surge Current



Number Of Cycles At 60Hz - Cycles

Figure .4-Typical Reverse Characteristics



Percent Of Rated Peak Reverse Voltage - Volts

