

## Silicon Fast Recovery Diode

$V_{RRM} = 100\text{ V} - 600\text{ V}$

$I_F = 12\text{ A}$

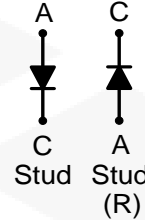
### Features

- High Surge Capability
- Types from 100 V to 600 V  $V_{RRM}$
- Not ESD Sensitive

### Note:

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

DO-4 Package



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

Parameter	Symbol	Conditions	FR12B(R)02	FR12D(R)02	FR12G(R)02	FR12J(R)02	Unit
Repetitive peak reverse voltage	$V_{RRM}$		100	200	400	600	V
RMS reverse voltage	$V_{RMS}$		70	140	280	420	V
DC blocking voltage	$V_{DC}$		100	200	400	600	V
Continuous forward current	$I_F$	$T_C \leq 100\text{ }^\circ\text{C}$	12	12	12	12	A
Surge non-repetitive forward current, Half Sine Wave	$I_{F,SM}$	$T_C = 25\text{ }^\circ\text{C}$ , $t_p = 8.3\text{ ms}$	180	180	180	180	A
Operating temperature	$T_j$		-55 to 150	-55 to 150	-55 to 150	-55 to 150	$^\circ\text{C}$
Storage temperature	$T_{stg}$		-55 to 150	-55 to 150	-55 to 150	-55 to 150	$^\circ\text{C}$

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

Parameter	Symbol	Conditions	FR12B(R)02	FR12D(R)02	FR12G(R)02	FR12J(R)02	Unit
Diode forward voltage	$V_F$	$I_F = 12\text{ A}$ , $T_j = 25\text{ }^\circ\text{C}$	0.8	0.8	0.8	0.8	V
Reverse current	$I_R$	$V_R = 100\text{ V}$ , $T_j = 25\text{ }^\circ\text{C}$	25	25	25	25	$\mu\text{A}$
		$V_R = 100\text{ V}$ , $T_j = 150\text{ }^\circ\text{C}$	6	6	6	6	mA

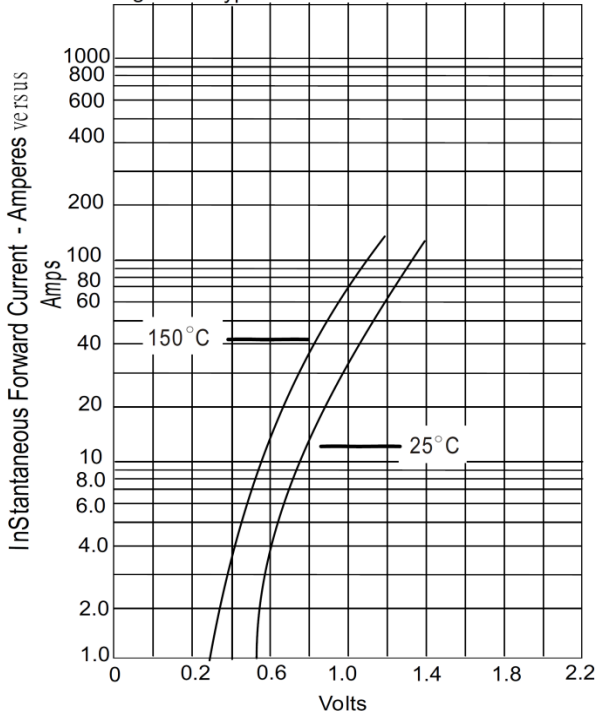
### Recovery Time

Parameter	Symbol	Conditions	FR12B(R)02	FR12D(R)02	FR12G(R)02	FR12J(R)02	Unit
Maximum reverse recovery time	$T_{RR}$	$I_F = 0.5\text{ A}$ , $I_R = 1.0\text{ A}$ , $I_{RR} = 0.25\text{ A}$	200	200	200	250	nS

### Thermal characteristics

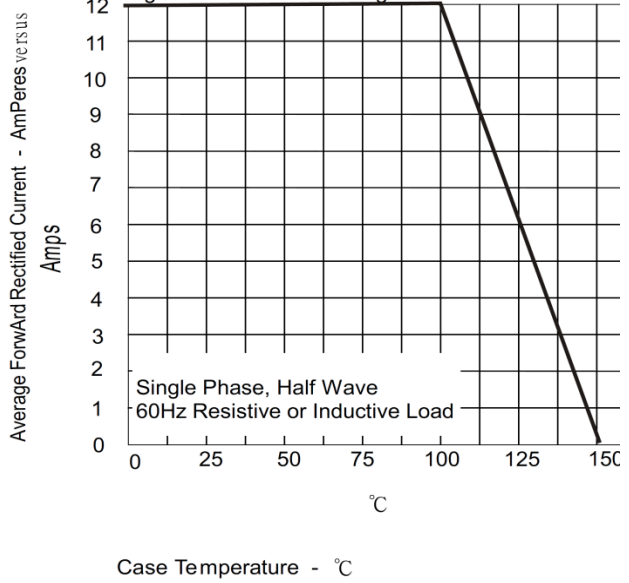
Parameter	Symbol	Conditions	FR12B(R)02	FR12D(R)02	FR12G(R)02	FR12J(R)02	Unit
Thermal resistance, junction - case	$R_{thJC}$		2.5	2.5	2.5	2.5	$^\circ\text{C/W}$

Figure .1-Typical Forward Characteristics



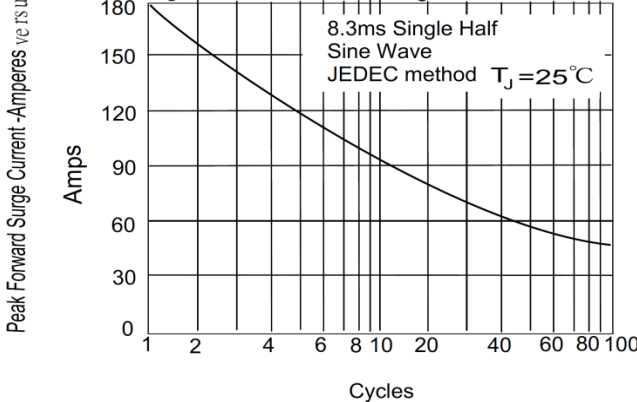
Instantaneous Forward Voltage - Volts

Figure .2-Forward Derating Curve



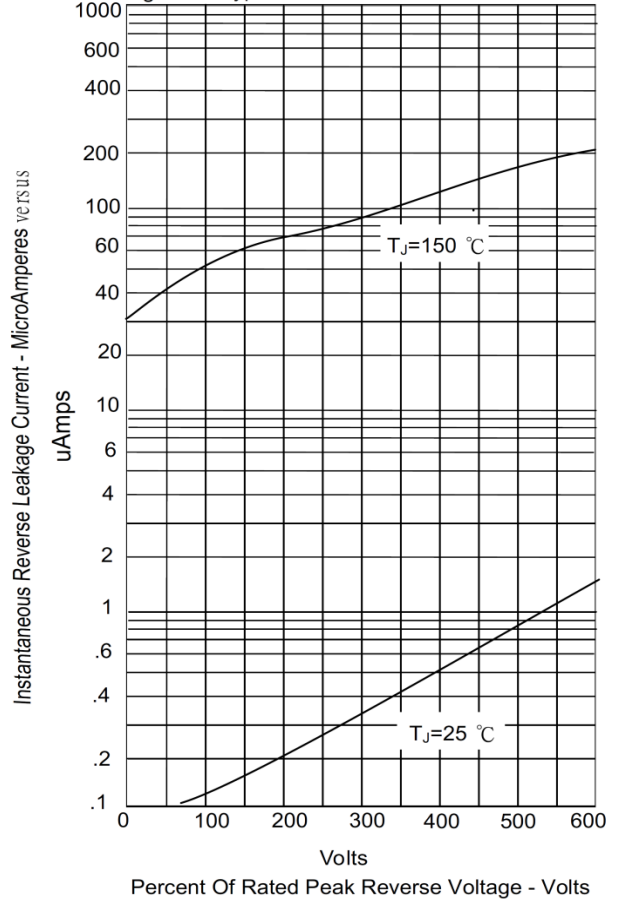
Case Temperature - °C

Figure .3-Peak Forward Surge Current



Number Of Cycles At 60Hz - Cycles

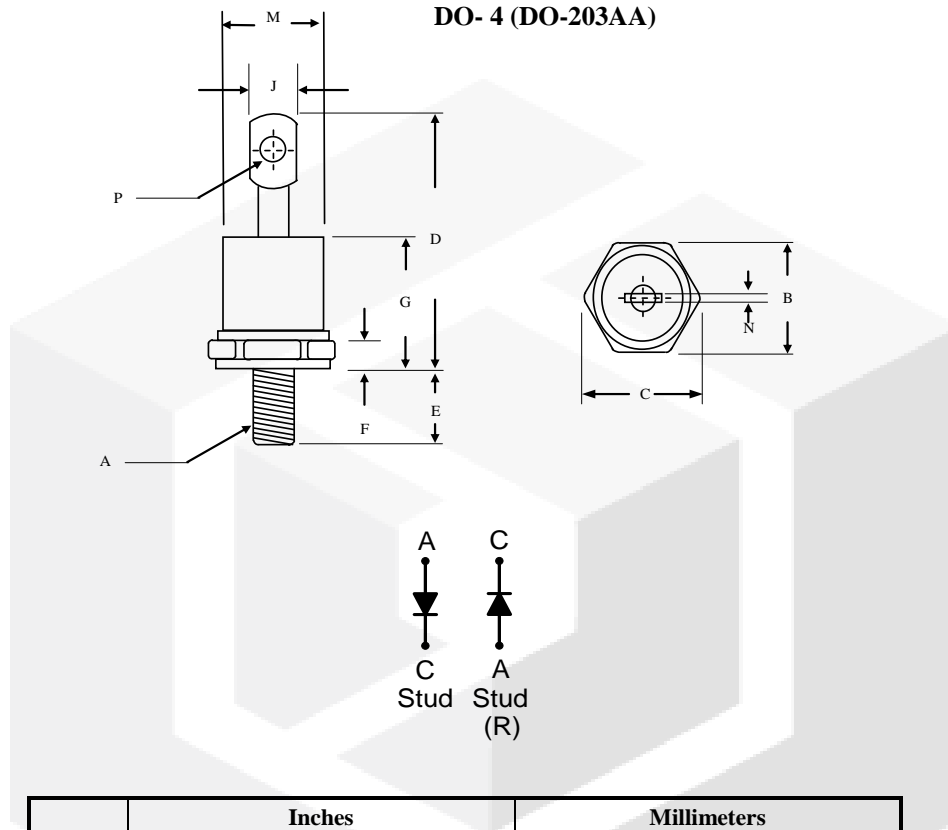
Figure .4-Typical Reverse Characteristics



Percent Of Rated Peak Reverse Voltage - Volts

**Package dimensions and terminal configuration**

Product is marked with part number and terminal configuration.



	Inches		Millimeters	
	Min	Max	Min	Max
A	10-32 UNF			
B	0.424	0.437	10.77	11.10
C	-----	0.505	-----	12.82
D	-----	0.800	-----	20.30
E	0.453	0.492	11.50	12.50
F	0.114	0.140	2.90	3.50
G	-----	0.405	-----	10.29
J	-----	0.216	-----	5.50
M	-----	φ0.302	-----	φ7.68
N	0.031	0.045	0.80	1.15
P	0.070	0.79	1.80	2.00