

Silicon Fast Recovery Diode

$V_{RRM} = 800 \text{ V} - 1000 \text{ V}$

$I_F = 12 \text{ A}$

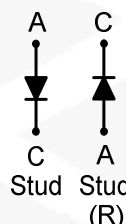
Features

- High Surge Capability
- Types from 800 V to 1000 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 $T_j = 25^\circ\text{C}$, unless otherwise specified ("R" devices have leads reversed)

Parameter	Symbol	Conditions	FR12K(R)05	FR12M(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	$T_C \leq 100^\circ\text{C}$	12	12	A
Surge non-repetitive forward current, Half Sine Wave	$I_{F,SM}$	$T_C = 25^\circ\text{C}$, $t_p = 8.3 \text{ ms}$	180	180	A
Operating temperature	T_j		-55 to 150	-55 to 150	$^\circ\text{C}$
Storage temperature	T_{stg}		-55 to 150	-55 to 150	$^\circ\text{C}$

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

Parameter	Symbol	Conditions	FR12K(R)05	FR12M(R)05	Unit
Diode forward voltage	V_F	$I_F = 12 \text{ A}$, $T_j = 25^\circ\text{C}$	0.8	0.8	V
Reverse current	I_R	$V_R = 100 \text{ V}$, $T_j = 25^\circ\text{C}$	25	25	μA
		$V_R = 100 \text{ V}$, $T_j = 150^\circ\text{C}$	6	6	mA

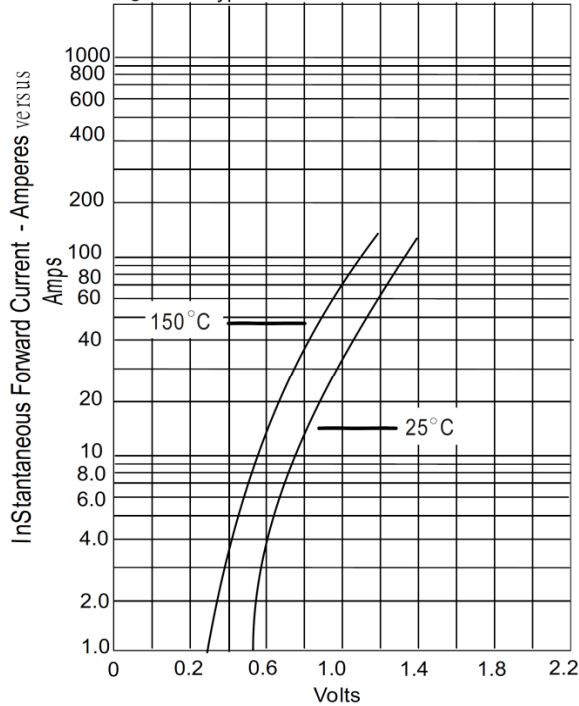
Recovery Time

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

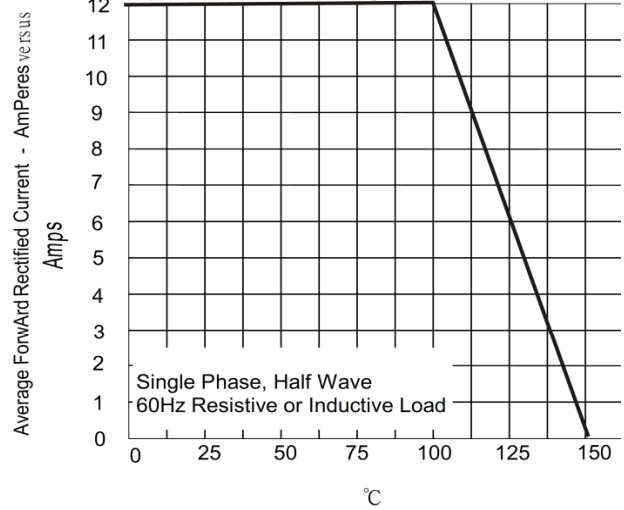
Thermal resistance, junction - case	R_{thJC}		2.0	2.0	$^\circ\text{C/W}$
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Figure .1-Typical Forward Characteristics



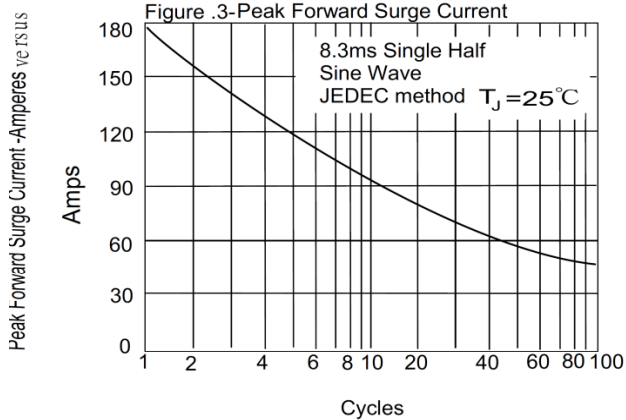
Instantaneous Forward Voltage - Volts

Figure .2-Forward Derating Curve



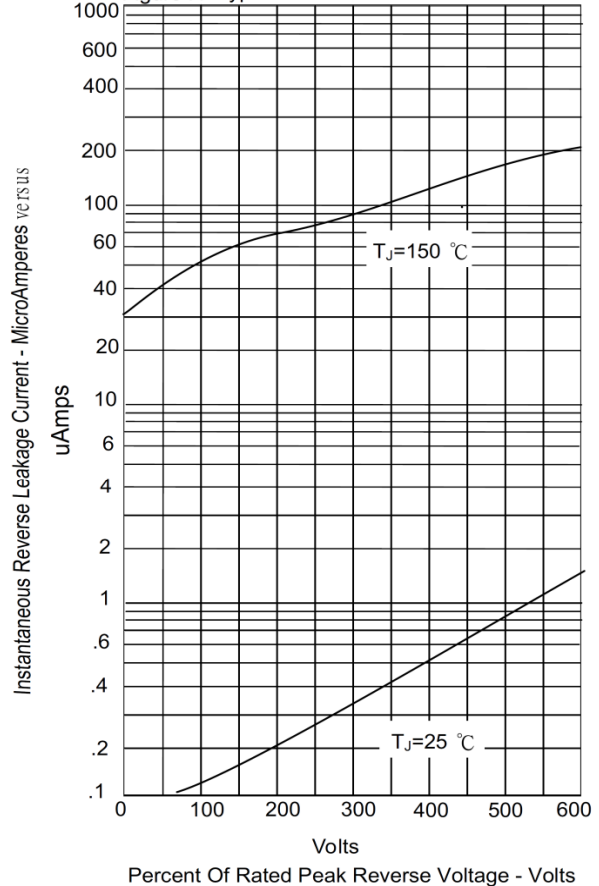
Case Temperature - °C

Figure .3-Peak Forward Surge Current



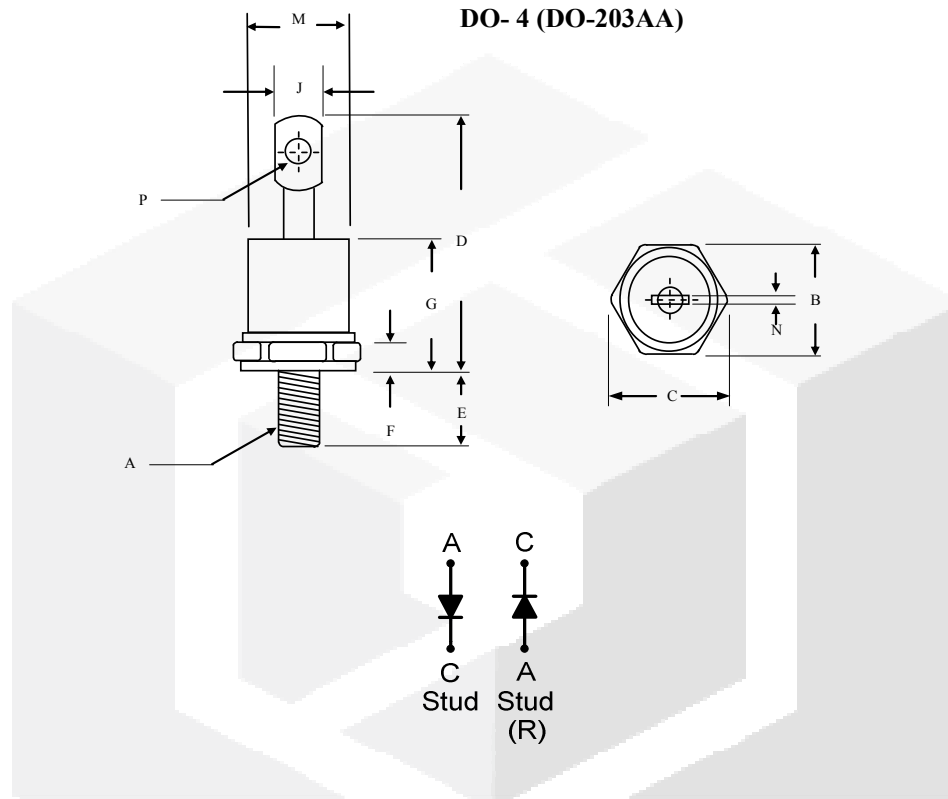
Number Of Cycles At 60Hz - Cycles

Figure .4- Typical Reverse Characteristics



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