

## Features

- Halogen Free. "Green" Device (Note 1)
- Fast Reverse Recovery Time
- Glass Passivated Chip Junction
- Epoxy Meets UL 94 V-0 Flammability Rating
- Moisture Sensitivity Level 1
- Lead Free Finish/RoHS Compliant (Note 2)("P" Suffix Designates RoHS Compliant. See Ordering Information)



## Maximum Ratings @ 25°C (Unless Otherwise Specified)

Parameter	Symbol	Value							Unit
		FR 3A	FR 3B	FR 3D	FR 3G	FR 3J	FR 3K	FR 3M	
Peak Repetitive Reverse Voltage	V <sub>RRM</sub>	50	100	200	400	600	800	1000	V
Working Peak Reverse Voltage	V <sub>RWM</sub>								
DC Blocking Voltage	V <sub>R</sub>								
RMS Reverse Voltage	V <sub>RMS</sub>	35	70	140	280	420	560	700	V
Average Rectified Forward Current @ T <sub>L</sub> =90°C	I <sub>F(AV)</sub>	3							A
Non-Repetitive Peak Surge Current @ 8.3ms Half Sine Wave	I <sub>FSM</sub>	100							A
Non-Repetitive Peak Surge Current @ 1ms Square Wave		200							
Current Squared Time @1ms≤t≤8.3ms	I <sup>2</sup> t	41.5							A <sup>2</sup> s

## Marking Code

Part Number	Marking Code
FR3A	FR3A
FR3B	FR3B
FR3D	FR3D
FR3G	FR3G
FR3J	FR3J
FR3K	FR3K
FR3M	FR3M

## Internal Structure

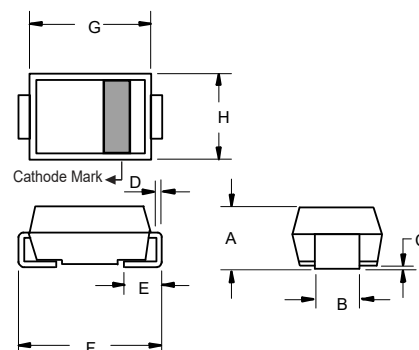
Pin	Description	Simplified Outline	Graphic Symbol
1	Cathode	 XXXX = Marking Code	
2	Anode		

Note: 1. Halogen free "Green" products are defined as those which contain <900ppm bromine, <900ppm chlorine (<1500ppm total Br + Cl) and <1000ppm antimony compounds.

2. High temperature solder exemption applied, see EU directive annex 7a.

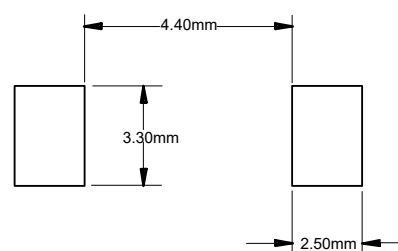
# 3 Amp Fast Recovery Rectifier 50 to 1000 Volts

## SMC (DO-214AB)



DIM	INCHES		MM		NOTE
	MIN	MAX	MIN	MAX	
A	0.079	0.103	2.00	2.62	
B	0.108	0.128	2.75	3.25	
C	0.002	0.008	0.051	0.203	
D	0.006	0.012	0.152	0.305	
E	0.030	0.060	0.76	1.52	
F	0.305	0.320	7.75	8.13	
G	0.260	0.280	6.60	7.11	
H	0.220	0.245	5.59	6.22	

## Suggested Solder Pad Layout



## Thermal characteristics

Symbol	Parameter	Conditions	Min	Typ	Max	Unit
$T_J$	Operating Junction Temperature Range		-55		150	°C
$T_{stg}$	Storage Temperature Range		-55		150	°C
$R_{th(J-L)}$	Thermal Resistance from Junction to Lead	Note 1		15		°C/W
$R_{th(J-A)}$	Thermal Resistance from Junction to Ambient	Note 1		65		°C/W

Note:

1. Mounted on P.C.B. with 16mm\*16mm copper pad areas.

## Electrical Characteristics @ 25°C Unless Otherwise Specified

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Forward Voltage	$V_F$	$I_F=3A; T_J=25^{\circ}C$			1.30	V
Reverse Current	$I_R$	at Rated $V_R; T_J=25^{\circ}C$ at Rated $V_R; T_J=125^{\circ}C$			10 150	$\mu A$
Reverse Recovery Time  FR3A~FR3G FR3J FR3K~FR3M	$t_{rr}$	$I_F=0.5A; I_R=1.0A;$ $I_{rr}=0.25A; T_J=25^{\circ}C$			150 250 500	ns
Junction Capacitance  FR3A~FR3G FR3J~FR3M	$C_J$	$V_R=4V; f=1MHz; T_J=25^{\circ}C$		40 30		pF

## Curve Characteristics

Fig. 1 - Forward Current Derating Curve

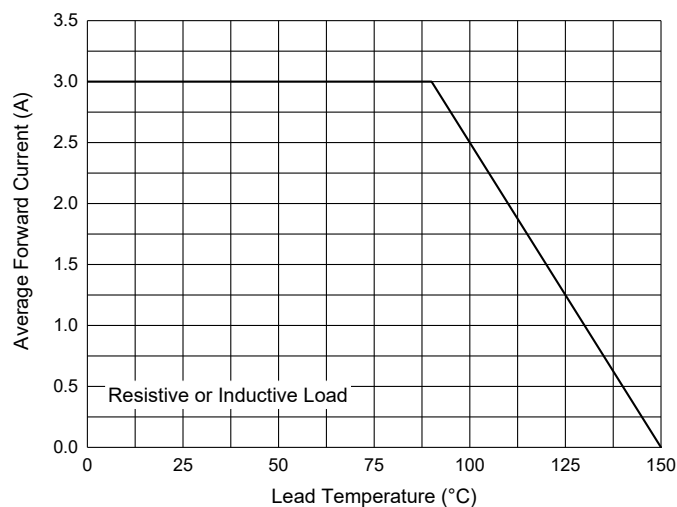


Fig. 2 - Maximum Non-Repetitive Peak Forward Surge Current

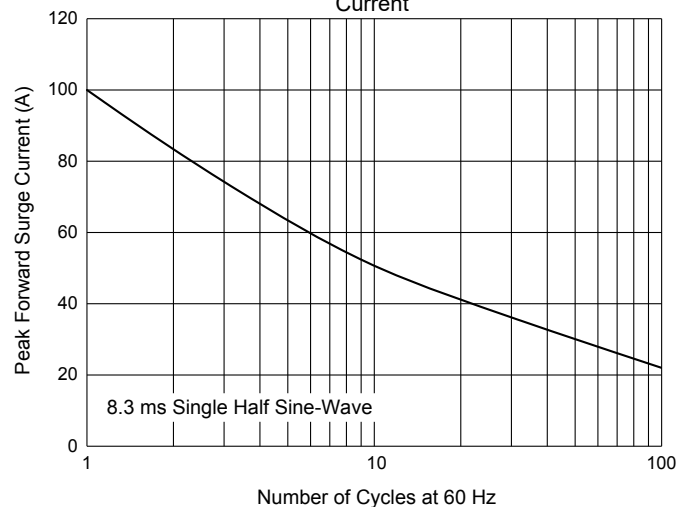


Fig. 3 - Typical Forward Characteristics

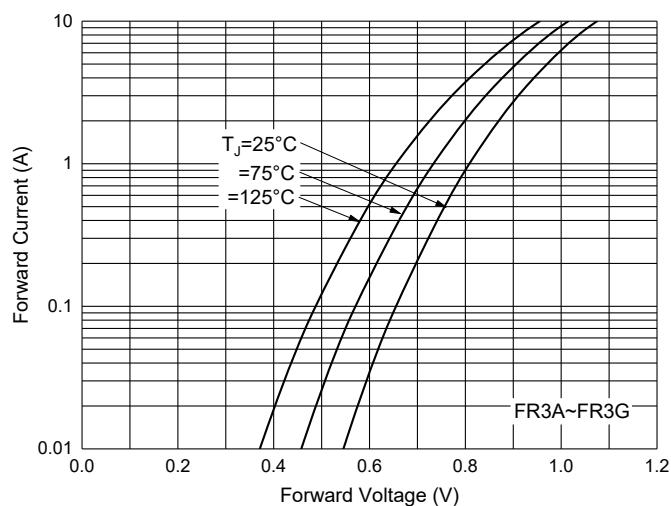


Fig. 4 - Typical Forward Characteristics

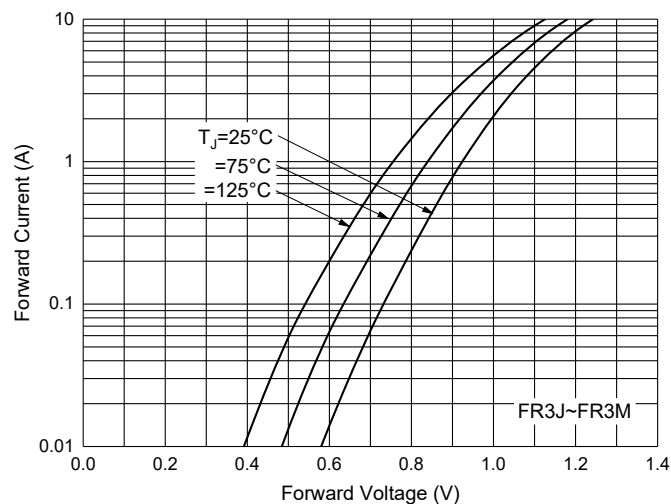


Fig. 5 - Typical Reverse Leakage Characteristics

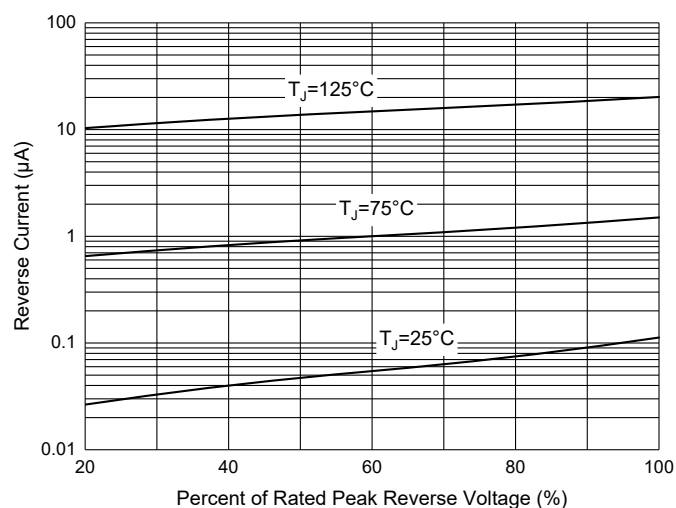
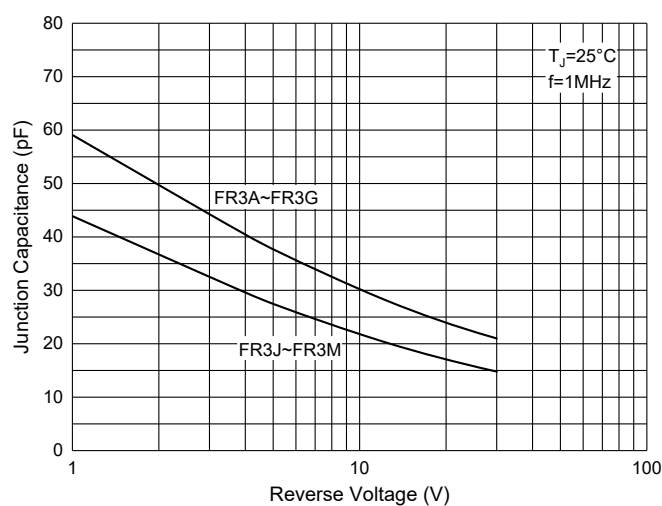


Fig. 6 - Typical Capacitance Characteristics



## Ordering Information

Device	Packing
Part Number -TP	Tape&Reel:3Kpcs/Reel

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