

## 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 1A-L	FR 1B-L	FR 1D-L	FR 1G-L	FR 1J-L	FR 1K-L	FR 1M-L	
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> =120°C	I <sub>F(AV)</sub>	1							A
Non-Repetitive Peak Surge Current @ 8.3ms Half Sine Wave	I <sub>FSM</sub>	30							A
Non-Repetitive Peak Surge Current @ 1ms Square Wave		60							
Current Squared Time @1ms≤t≤8.3ms	I <sup>2</sup> t	3.735							A <sup>2</sup> s

## Marking Code

Part Number	Marking Code
FR1A-L	FR1A
FR1B-L	FR1B
FR1D-L	FR1D
FR1G-L	FR1G
FR1J-L	FR1J
FR1K-L	FR1K
FR1M-L	FR1M

## Internal Structure

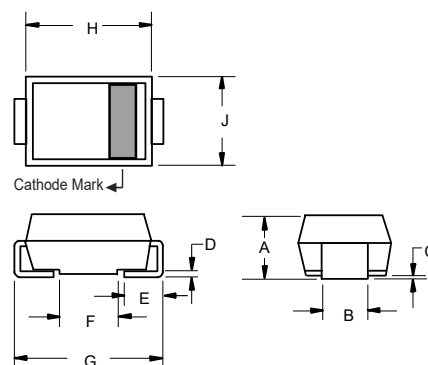
Pin	Description	Simplified Outline	Graphic Symbol
1	Cathode	 XXXX = Marking Code	
2	Anode		

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.

# 1 Amp Fast Recovery Rectifier 50 to 1000 Volts

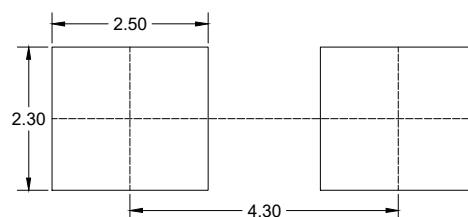
## SMB (DO-214AA)



DIM	INCHES		MM		NOTE
	MIN	MAX	MIN	MAX	
A	0.079	0.103	2.00	2.62	
B	0.075	0.087	1.91	2.21	
C	0.002	0.008	0.05	0.20	
D	0.006	0.012	0.15	0.31	
E	0.030	0.060	0.76	1.52	
F	0.065	0.091	1.65	2.32	
G	0.200	0.220	5.08	5.59	
H	0.160	0.191	4.06	4.85	
J	0.130	0.155	3.30	3.94	

## Suggested Solder Pad Layout

Unit:mm



## 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		20		°C/W
$R_{th(J-A)}$	Thermal Resistance from Junction to Ambient	Note 1		75		°C/W

Note:

1. Mounted on P.C.B. with 8mm\*8mm copper pad areas.

## Electrical Characteristics @ 25°C Unless Otherwise Specified

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Forward Voltage	$V_F$	$I_F=1A; T_J=25^{\circ}C$			1.30	V
Reverse Current	$I_R$	at Rated $V_R; T_J=25^{\circ}C$ at Rated $V_R; T_J=125^{\circ}C$			5 100	$\mu A$
Reverse Recovery Time FR1A-L~FR1G-L FR1J-L FR1K-L~FR1M-L	$t_{rr}$	$I_F=0.5A; I_R=1.0A;$ $I_{rr}=0.25A; T_J=25^{\circ}C$			150 250 500	ns
Junction Capacitance FR1A-L~FR1J-L FR1K-L~FR1M-L	$C_J$	$V_R=4V; f=1MHz; T_J=25^{\circ}C$		11 7		pF

## Curve Characteristics

Fig. 1 - Forward Current Derating Curve

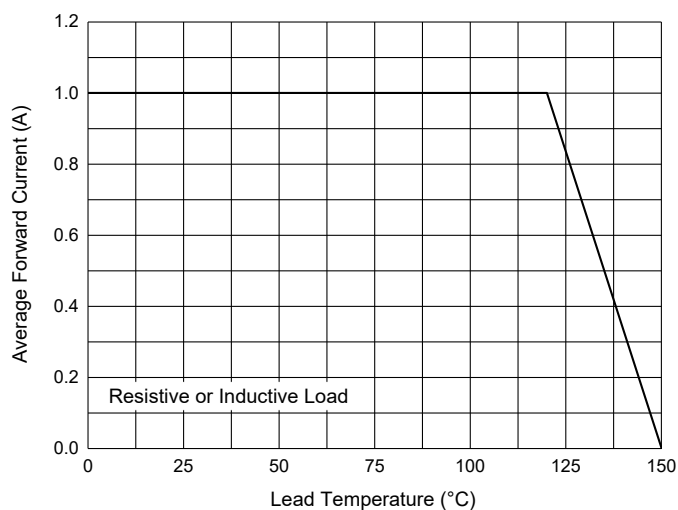


Fig. 2 - Maximum Non-Repetitive Peak Forward Surge Current

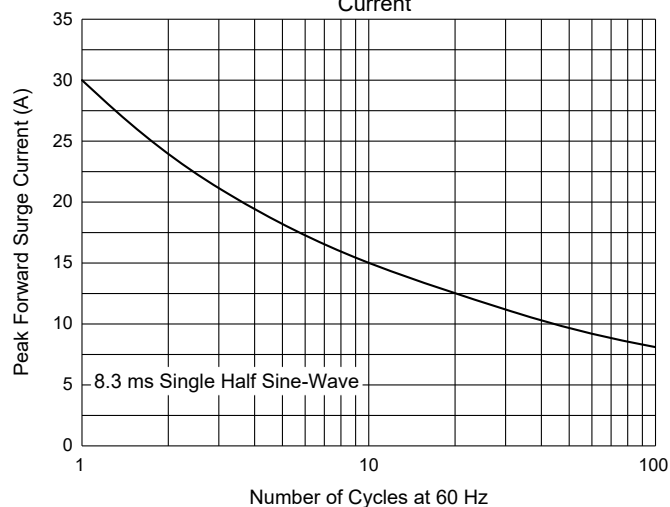


Fig. 3 - Typical Forward Characteristics

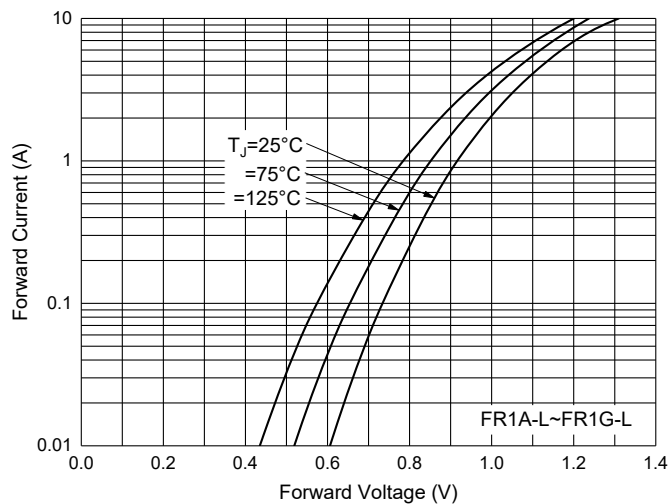


Fig. 4 - Typical Forward Characteristics

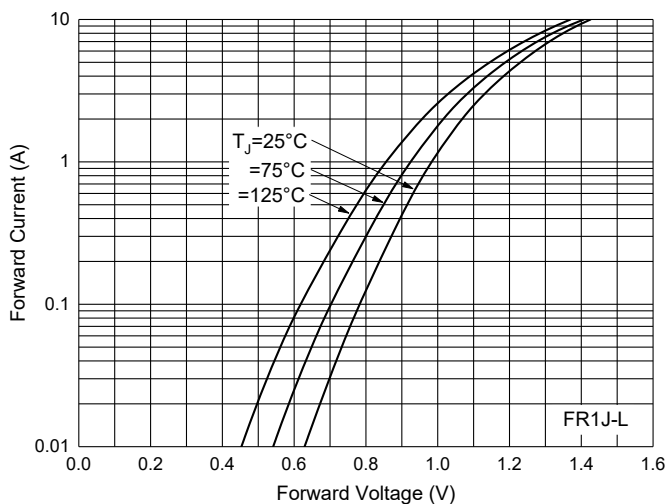


Fig. 5 - Typical Forward Characteristics

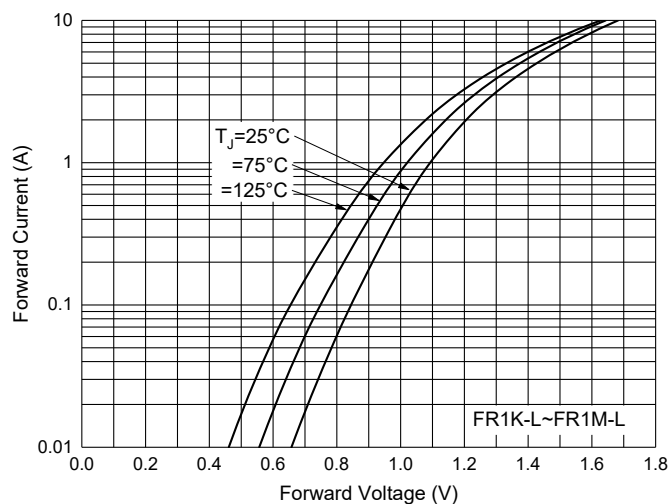
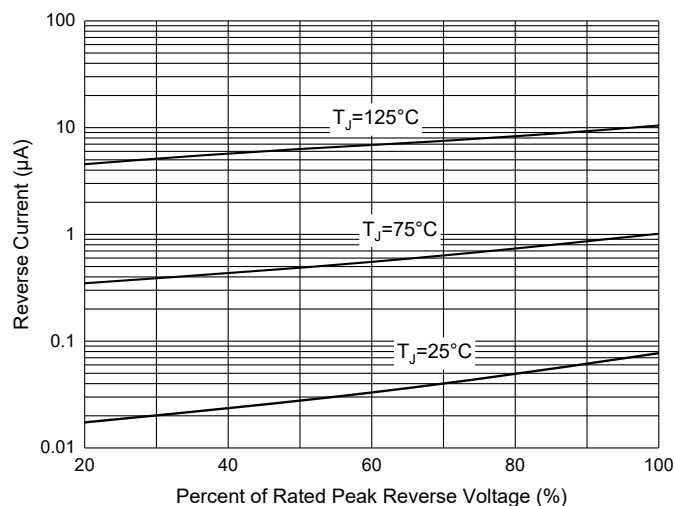
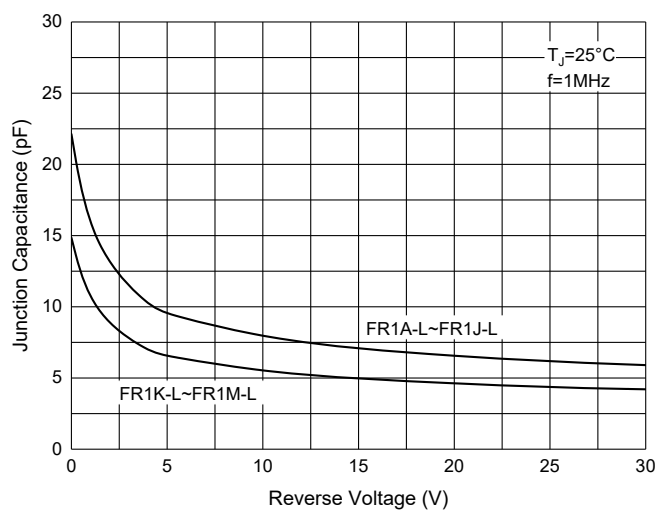


Fig. 6 - Typical Reverse Leakage Characteristics



## Curve Characteristics

Fig. 7 - Typical Capacitance Characteristics



## Ordering Information

Device	Packing
FR1A-LTP ~ FR1M-LTP	Tape&Reel:3Kpcs/Reel

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