



# THE DATASHEET OF GR1M



## Features

- Glass passivated Fast Recovery rectifiers
- For surface mounted application
- Low forward voltage drop
- High temperature soldering: 260°C/10 seconds at terminals
- Plastic material used carries underwriters laboratory classification 94V-0
- Halogen free



DO-214AC (SMA)

## Typical Applications

- For use of fast switching rectification in lighting, cellular phone, portable device, power supplies and other consumer applications.

## Maximum Ratings & Electrical Characteristics (T<sub>A</sub>=25°C unless otherwise specified)

Parameter	Symbol	GR1A	GR1B	GR1D	GR1G	GR1J	GR1K	GR1M	Unit
Maximum Repetitive Peak Reverse Voltage	V <sub>RRM</sub>	50	100	200	400	600	800	1000	V
Maximum RMS Voltage	V <sub>RMS</sub>	35	70	140	280	420	560	700	V
Maximum DC Blocking Voltage	V <sub>DC</sub>	50	100	200	400	600	800	1000	V
Maximum Average Forward Rectified Current See Fig.1	I <sub>(AV)</sub>	1.0							A
Peak Forward Surge Current, 8.3ms Single Half Sine-Wave Superimposed on Rated Load	I <sub>FSM</sub>	30							A
Maximum Instantaneous Forward Voltage @ 1.0A	V <sub>F</sub>	1.3							V
Maximum DC Reverse Current at Rated DC Blocking Voltage	T <sub>A</sub> =25°C	5.0							uA
	T <sub>A</sub> =125°C	50							
Maximum Reverse Recovery Time <sup>1</sup>	t <sub>rr</sub>	150				250	500	nS	
Typical Junction Capacitance <sup>2</sup>	C <sub>J</sub>	7.6							pF
Operating Junction Temperature Range	T <sub>J</sub>	-55 to +150							°C
Storage Temperature Range	T <sub>STG</sub>	-55 to +150							°C

Notes:

1. Reverse recovery test conditions: I<sub>F</sub>=0.5A, I<sub>R</sub>=1.0A, I<sub>RR</sub>=0.25A
2. Measured at 1MHz and applied reverse voltage of 4.0V

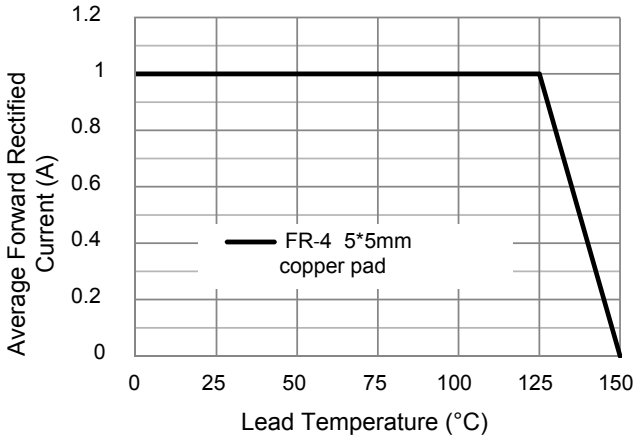
## Thermal Characteristics

Parameter	Symbol	GR1A thru GR1M	Unit
Typical Thermal Resistance <sup>3</sup>	R <sub>θJA</sub>	61	°C/W
	R <sub>θJC</sub>	30	
	R <sub>θJL</sub>	6	

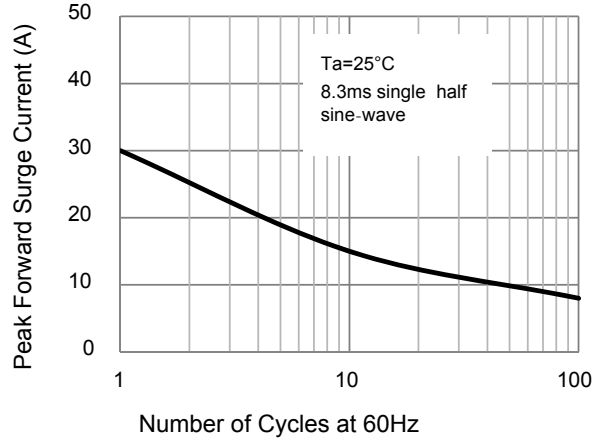
Notes:

3. The thermal resistance from junction to ambient, case and lead, mounted on FR-4 P.C.B with 5×5mm copper pads.

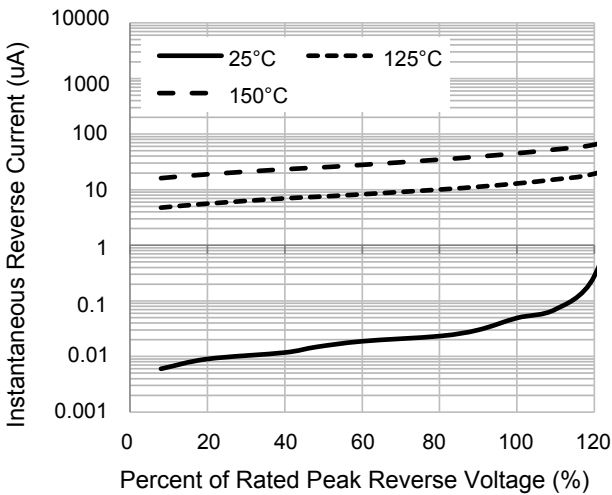
## Ratings and Characteristics Curves ( $T_A=25^\circ\text{C}$ unless otherwise noted)



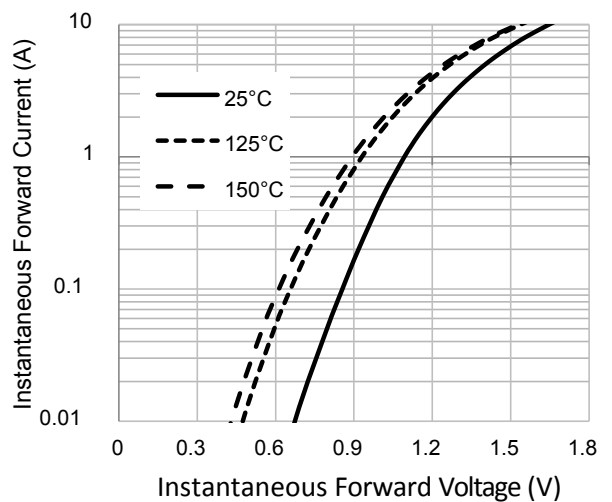
**Figure 1. Forward Current Derating Curve**



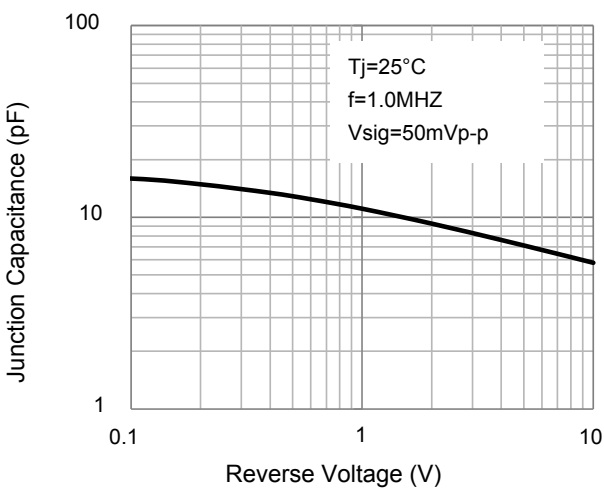
**Figure 2. Maximum Non-Repetitive Peak Forward Surge Current**



**Figure 3. Typical Reverse Characteristics**



**Figure 4. Typical Forward Characteristics**



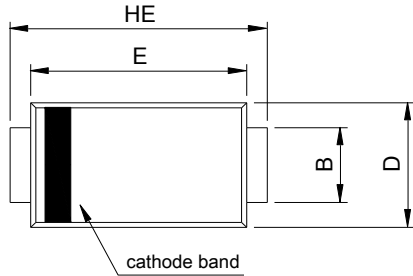
**Figure 5. Typical Junction Capacitance**

# GR1A thru GR1M

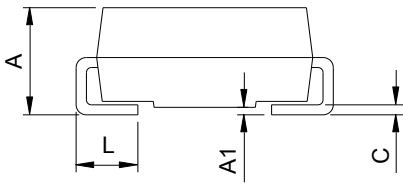
Fast Recovery Rectifiers

Reverse Voltage 50V to 1000V Forward Current 1.0 A

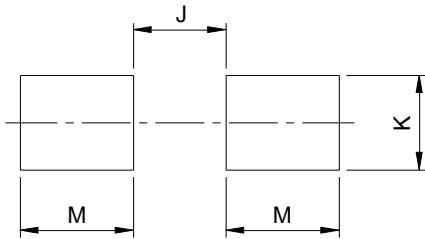
## Package Outline Dimensions DO-214AC (SMA)



DIM	SMA (DO-214AC)			
	Millimeters		Inches	
	Min.	Max.	Min.	Max.
A	1.90	2.30	0.075	0.091
A1	0.00	0.20	0.000	0.008
B	1.25	1.65	0.049	0.065
C	0.15	0.31	0.006	0.012
D	2.35	2.90	0.093	0.114
E	3.99	4.60	0.157	0.181
HE	4.80	5.30	0.189	0.209
L	0.76	1.52	0.030	0.060





## Recommended Pad Layout



DIM	Recommended Pad Layout (Reference ONLY)			
	Millimeters		Inches	
	Min.	Max.	Min.	Max.
J	-	2.20	-	0.087
K	1.72	-	0.068	-
M	2.00	-	0.079	-

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