GOOD-ARK SEMICONDUCTOR

GR1A thru GR1M

Fast Recovery Rectifiers

Reverse Voltage 50V to 1000V Forward Current 1.0 A

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

RoHS COMPLIANT



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_A=25°C unless otherwise specified)

Parameter		Symbol	GR1A	GR1B	GR1D	GR1G	GR1J	GR1K	GR1M	Unit
Maximum Repetitive Peak Reverse Voltage		V_{RRM}	50	100	200	400	600	800	1000	V
Maximum RMS Voltage		V_{RMS}	35	70	140	280	420	560	700	V
Maximum DC Blocking Voltage		V_{DC}	50	100	200	400	600	800	1000	V
Maximum Average Forward Rectified Current See Fig.1		$I_{(AV)}$	1.0							A
Peak Forward Surge Current, 8.3mS Single Half Sine-Wave Superimposed on Rated Load		I_{FSM}	30							A
Maximum Instantaneous Forward Voltage @ 1.0A		V_F	1.3							V
Maximum DC Reverse Current	T_A =25°C	I_R	5.0							uA
at Rated DC Blocking Voltage	T_A =125°C		50							
Maximum Reverse Recovery Time [1]		t_{rr}	150				250	500		nS
Typical Junction Capacitance [2]		C_J	7.6							pF
Operating Junction Temperature Range		T_J	-55 to +150							°C
Storage Temperature Range		T_{STG}	-55 to +150							°C

Notes:
1. Reverse recovery test conditions: I_F=0.5A, I_R=1.0A, I_{RR}=0.25A
2. Measured at 1MHz and applied reverse voltage of 4.0V

Thermal Characteristics

Parameter	Symbol	GR1A thru GR1M	Unit
Typical Thermal Resistance [3]	$R_{\theta JA}$	61	°C/W
	$R_{\theta JC}$	30	
	$R_{\theta JL}$	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°C unless otherwise noted)

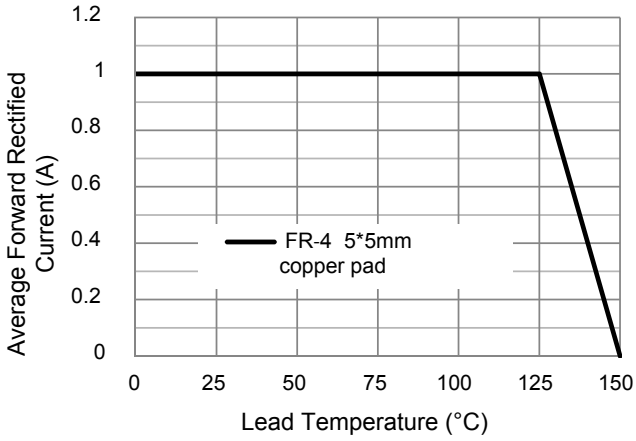


Figure 1. Forward Current Derating Curve

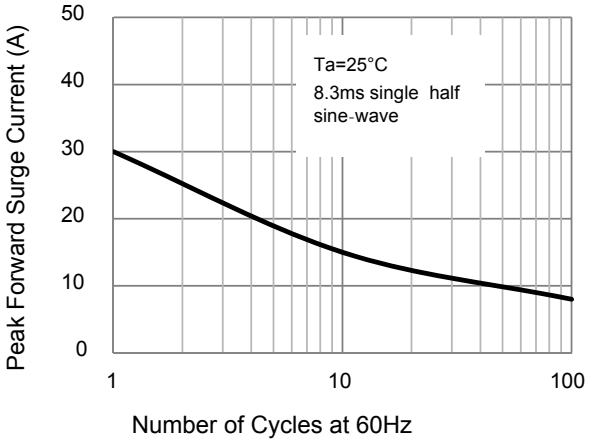


Figure 2. Maximum Non-Repetitive Peak Forward Surge Current

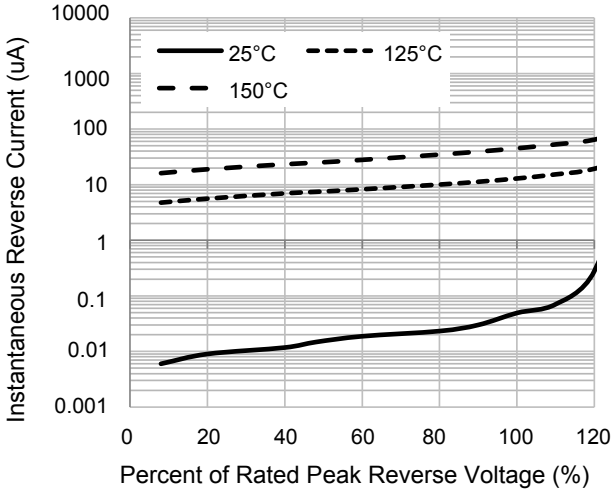


Figure 3. Typical Reverse Characteristics

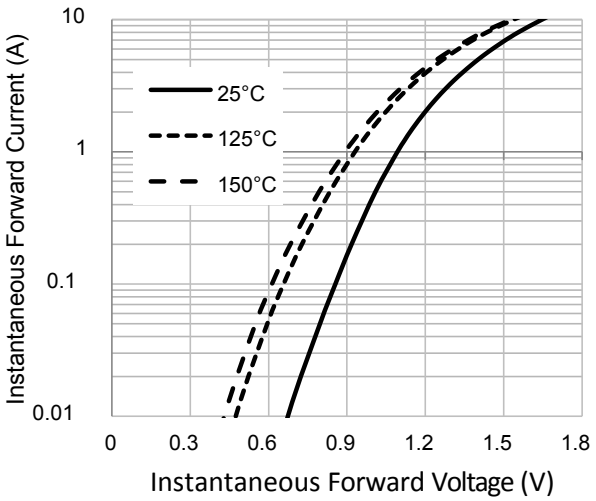


Figure 4. Typical Forward Characteristics

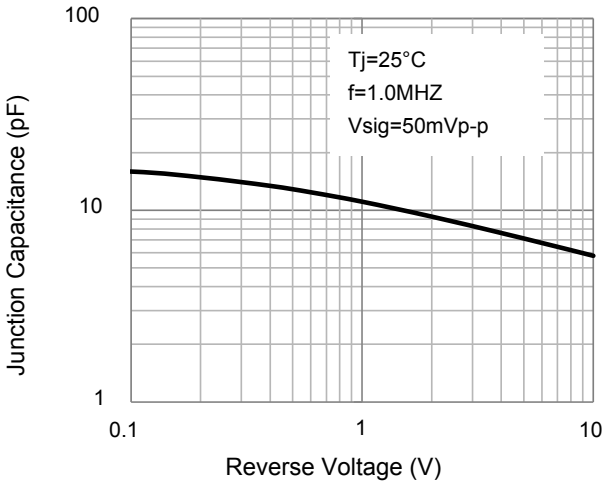
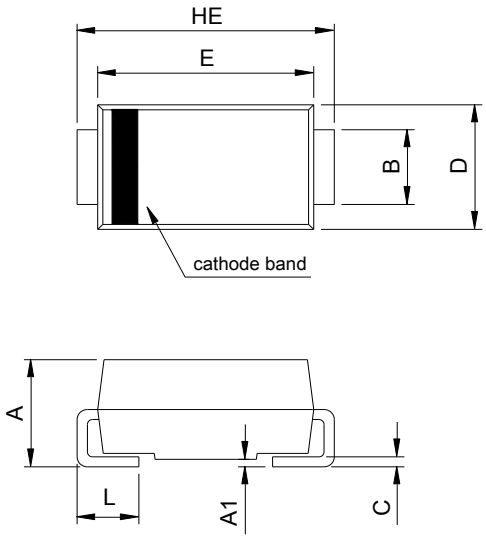


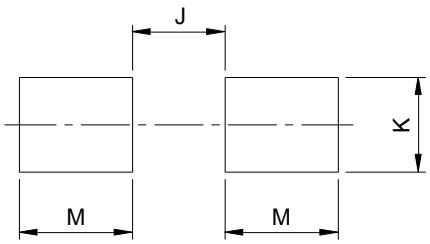
Figure 5. Typical Junction Capacitance

Package Outline Dimensions DO-214AC (SMA)



SMA (DO-214AC)				
DIM	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



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