



SYNSEMI SEMICONDUCTOR

GR1A thru GR1M

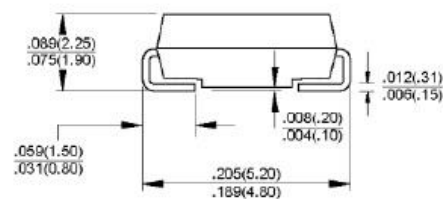
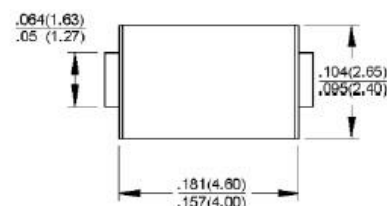
1.0 Amp. Fast Recovery Surface Mount Rectifiers
Voltage Range 50 to 1000 Volts Forward Current 1.0 Ampere

Features

- ◆ For surface mounted application
- ◆ Glass passivated junction chip
- ◆ Built-in strain relief, ideal for automated placement
- ◆ Plastic material used carries Underwriters Laboratory Classification 94V-0
- ◆ Fast switching for high efficiency
- ◆ High temperature soldering:
250°C/10 seconds at terminals



DO-214AC (SMA)



Dimensions in inches and (millimeters)

Mechanical Data

- ◆ Cases: Molded plastic
- ◆ Terminals: Solder plated
- ◆ Polarity: Indicated by cathode band
- ◆ Weight: 0.002 ounce, 0.064 gram

Maximum Ratings and Electrical Characteristics

Ratings at 25°C ambient temperature unless otherwise specified.

Single phase, half wave, 60Hz, resistive or inductive load.

For capacitive load, derate current by 20%

Parameter	Symbols	GR1A	GR1B	GR1D	GR1G	GR1J	GR1K	GR1M	Units
Maximum repetitive peak reverse voltage	V_{RRM}	50	100	200	400	600	800	1000	Volts
Maximum RMS voltage	V_{RMS}	35	70	140	280	420	560	700	Volts
Maximum DC blocking voltage	V_{DC}	50	100	200	400	600	800	1000	Volts
Maximum average forward rectified current See Fig. 1 @ $T_A = 90^\circ\text{C}$	$I_{(AV)}$	1.0							Amp
Peak forward surge current, 8.3 ms single half sine-wave superimposed on rated load (JEDEC Method)	I_{FSM}	30.0							Amps
Maximum instantaneous forward voltage @ 1.0A	V_F	1.3							Volts
Maximum DC reverse current at rated DC blocking voltage @ $T_A = 25^\circ\text{C}$ @ $T_A = 125^\circ\text{C}$	I_R	5.0 50							μA
Maximum reverse recovery time (Note 1)	t_r	150				250	500		nS
Typical junction capacitance (Note 2)	C_j	10							pF
Typical thermal resistance (Note 3)	R_{JA} R_{JL}	105.0 32.0							$^\circ\text{C/W}$
Operating temperature range	T_J	-55 to +150							$^\circ\text{C}$
Storage temperature range	T_{STG}	-55 to +150							$^\circ\text{C}$

Notes: 1. Reverse Recovery Test Conditions: $I_F = 0.5\text{A}$, $I_R = 1.0\text{A}$, $I_{RR} = 0.25\text{A}$

2. Measured at 1 MHz and Applied $V_R = 4.0$ Volts

3. Thermal Resistance from Junction to Ambient and from Junction to Lead Mounted on P.C.B. with 0.2"x 0.2" (5.0 x 5.0 mm) Copper Pad Areas

GR1A thru GR1M

RATINGS AND CHARACTERISTIC CURVES

FIG.1- MAXIMUM FORWARD CURRENT DERATING CURVE

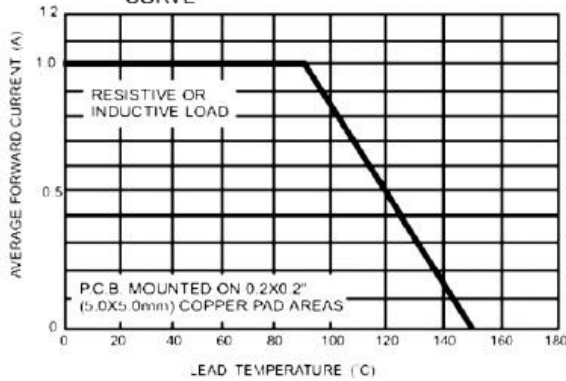


FIG.2- MAXIMUM NON-REPETITIVE FORWARD SURGE CURRENT

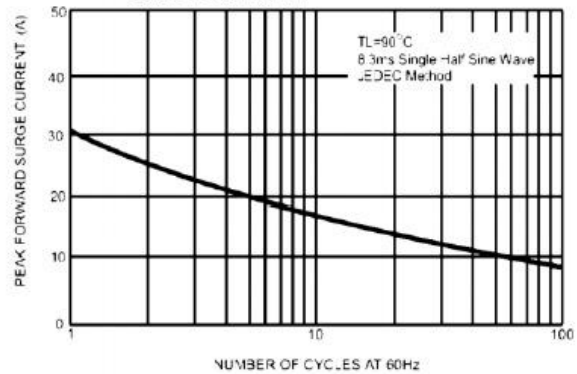


FIG.3- TYPICAL INSTANTANEOUS FORWARD CHARACTERISTICS PER LEG

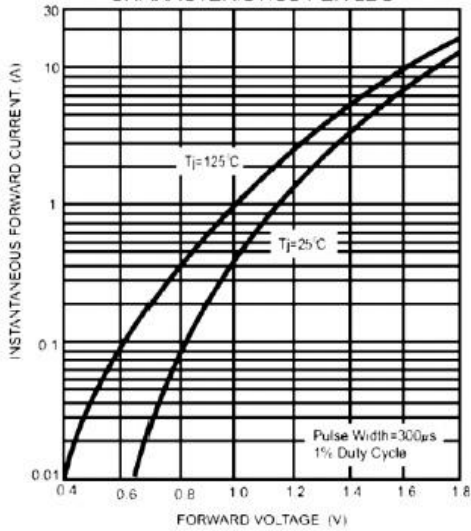


FIG.4- TYPICAL REVERSE CHARACTERISTICS

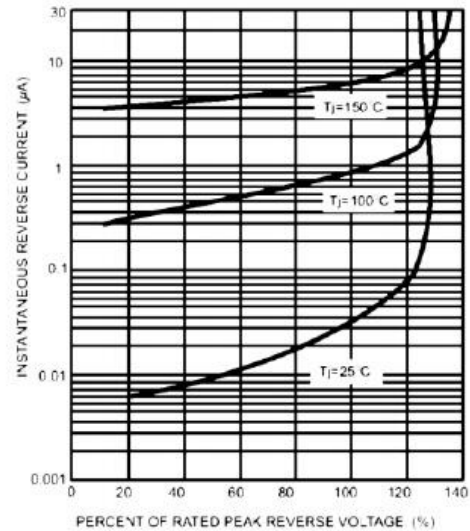


FIG.5- TYPICAL JUNCTION CAPACITANCE

