



SYNSEMI SEMICONDUCTOR

# GR3A thru GR3M

3.0 Amps. Fast Recovery Surface Mount Rectifiers  
Voltage Range 50 to 1000 Volts Forward Current 3.0 Amperes

## Features

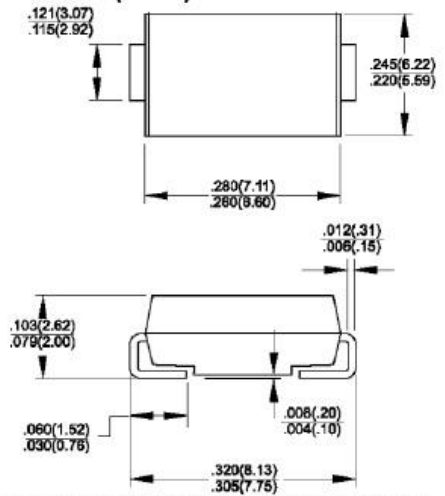
- ◆ For surface mounted application
- ◆ Glass passivated junction chip
- ◆ Built-in strain relief, ideal for automated placement
- ◆ Plastic material used carries Underwriters Laboratory Classification 94V-0
- ◆ Fast switching for high efficiency
- ◆ High temperature soldering: 250°C/10 seconds at terminals

## Mechanical Data

- ◆ Cases: Molded plastic
- ◆ Terminals: Solder plated
- ◆ Polarity: Indicated by cathode band
- ◆ Weight: 0.007 ounce, 0.21 gram



DO-214AB (SMC)



Dimensions in inches and (millimeters)

## 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	GR3A	GR3B	GR3D	GR3G	GR3J	GR3K	GR3M	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 @ $T_c=75^\circ\text{C}$	$I_{(AV)}$	3.0							Amps
Peak forward surge current, 8.3 ms single half sine-wave superimposed on rated load (JEDEC method)	$I_{FSM}$	100.0							Amps
Maximum instantaneous forward voltage @ 3.0A	$V_F$	1.3							Volts
Maximum DC reverse current @ $T_A=25^\circ\text{C}$ at rated DC blocking voltage @ $T_A=125^\circ\text{C}$	$I_R$	10.0 250							$\mu\text{A}$
Maximum reverse recovery time (Note 1)	$t_r$	150				250	500		nS
Typical junction capacitance (Note 2)	$C_j$	75							pF
Typical thermal resistance (Note 3)	$R_{JA}$ $R_{JL}$	50.0 15.0							$^\circ\text{C/W}$
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 0.3" x 0.3" ( 8.0 x 8.0 mm ) Copper Pad Areas.

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## RATINGS AND CHARACTERISTIC CURVES

FIG.1- MAXIMUM FORWARD CURRENT DERATING CURVE

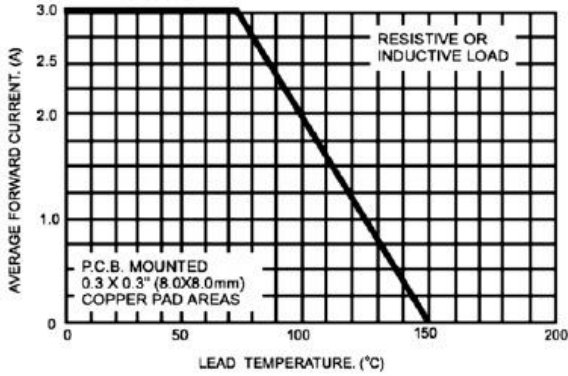


FIG.2- MAXIMUM NON-REPETITIVE PEAK FORWARD SURGE CURRENT

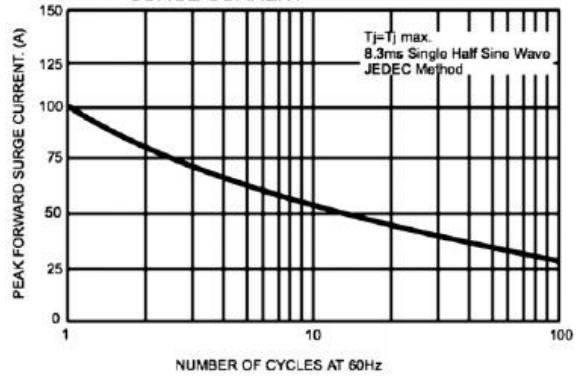


FIG.3- TYPICAL INSTANTANEOUS FORWARD CHARACTERISTICS

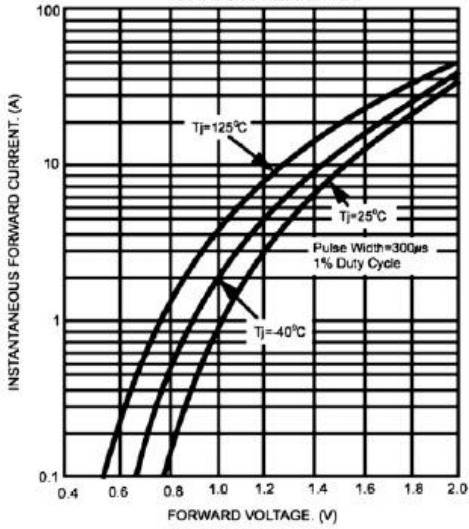


FIG.4- TYPICAL REVERSE CHARACTERISTICS

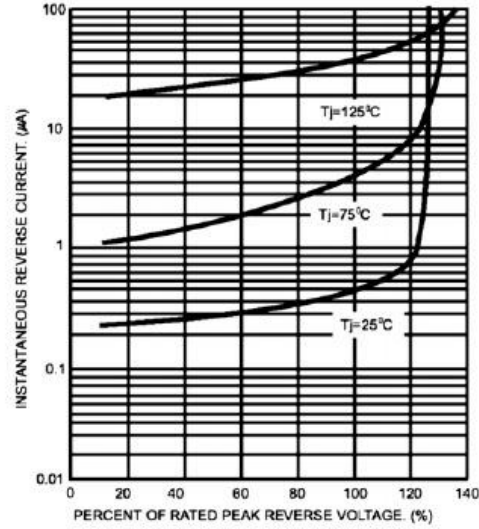


FIG.5- TYPICAL JUNCTION CAPACITANCE

