SEMICONDUCTOR

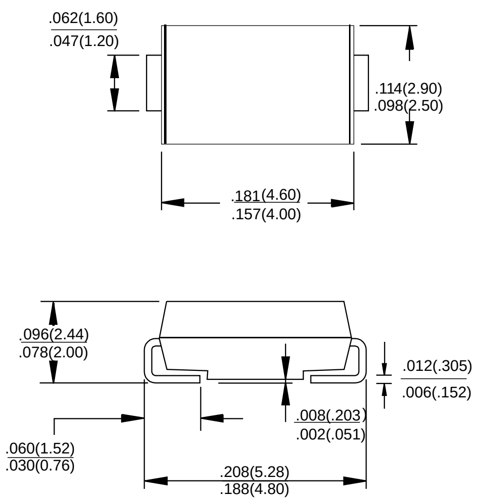
# DATA SHEET

# GS1A-A THRU GS1M-A

## SURFACE MOUNT RECTIFIER

## VOLTAGE- 50 to 1000 Volts CURRENT - 1.0 Amperes

SMA/DO-214AC Unit:inch(mm)



### FEATURES

- For surface mounted applications
- Low profile package
- Built-in strain relief
- Easy pick and place
- Plastic package has Underwriters Laboratory Flammability Classification 94V-0
- Low Forward Drop
- Glass passivated dip Junction
- High temperature soldering : 260°C / 10 seconds at terminals
- Pb free product at available: 99% Sn above meet RoHS environment substance directive request
- AEC-Q101 qualified

### MECHANICAL DATA

- Case : JEDEC DO-214AC molded plastic
  Base P/N - RoHS compliant, commercial grade
  Base P/N-A - RoHS compliant, AEC-Q101 qualified
- Terminals: Solder plated, solderable per MIL-STD-750, Method 2026
- Polarity: Indicated by cathode band
- Standard packaging: 12mm tape (EIA-481)

### MAXIMUM RATINGS AND ELECTRICAL CHARACTERISTICS

Ratings at 25°C ambient temperature unless otherwise specified. Single phase, half wave, 60 Hz, resistive or inductive load. For capacitive load, derate current by 20%.

| | SYMBOLS | GS1A | GS1B | GS1D | GS1G | GS1J | GS1K | GS1M | UNITS |
|---|---|---|---|---|---|---|---|---|---|
| Maximum Recurrent Peak Reverse Voltage | VRRM | 50 | 100 | 200 | 400 | 600 | 800 | 1000 | V |
| Maximum RMS Voltage | VRMS | 35 | 70 | 140 | 280 | 420 | 560 | 700 | V |
| Maximum DC Blocking Voltage | VDC | 50 | 100 | 200 | 400 | 600 | 800 | 1000 | V |
| Maximum Average Forward Rectified Current, at TL=75°C | I(AV) | 1.0 | | | | | | | A |
| Peak Forward Surge Current 8.3ms single half sine-wave superimposed on rated load (JEDEC method) | IFSM | 30.0 | | | | | | | A |
| Maximum Instantaneous Forward Voltage at 1.0A | VF | 1.1 | | | | | | | V |
| Maximum DC Reverse Current TA=25°C<br>at Rated DC Blocking Voltage TA=125°C | IR | 5.0<br>100 | | | | | | | μA<br>μA |
| Maximum Reverse Recovery Time(Note 1) TJ=25°C | TRR | 2.5 | | | | | | | μs |
| Typical Junction Capacitance (Note 2) | CJ | 2.5 | | | | | | | PF |
| Maximum Thermal Resistance(Note 3) | RθJA | 15.0 | | | | | | | °C/W |
| Operating and Storage Temperature Range | TJ, TSTG | -55 to +150 | | | | | | | °C |

**NOTES:**

1. Reverse Recovery Test Conditions: IF=0.5A, IR=1.0A, Irr=0.25A
2. Measured at 1 MHz and applied Vr = 4.0 volts.
3. 8.0 mm2 ( .013mm thick ) land areas.

# RATING AND CHARACTERISTIC CURVES

# GS1A-A THRU GS1M-A

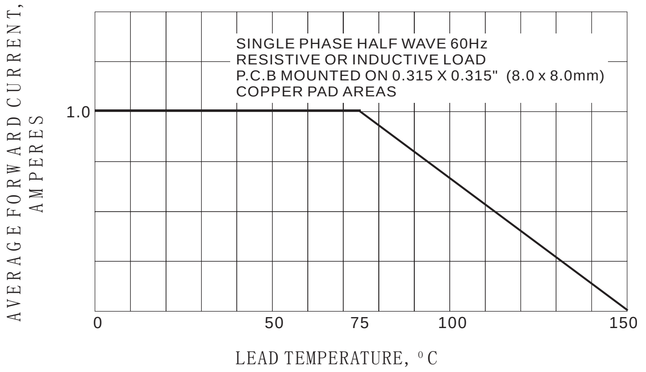


Fig. 1-FORWARD CURRENT DERATING CURVE

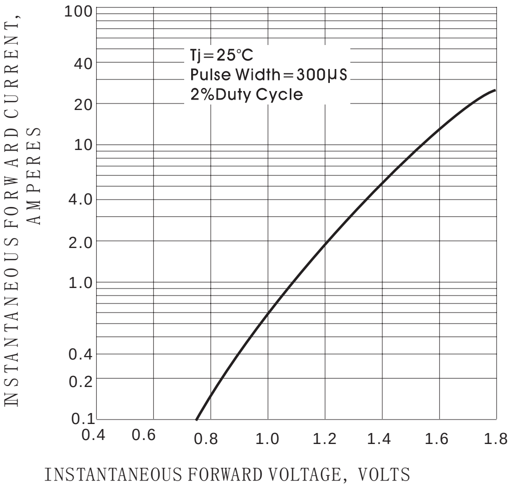


Fig. 2-TYPICAL INSTANTANEOUS FORWARD CHARACTERISTICS

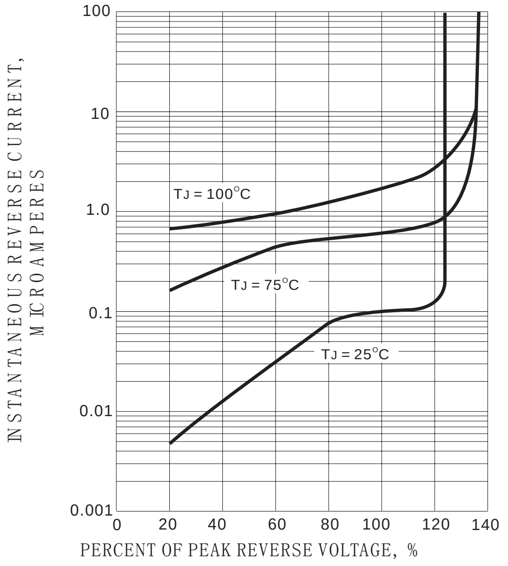


Fig. 3-TYPICAL REVERSE CHARACTERISTICS

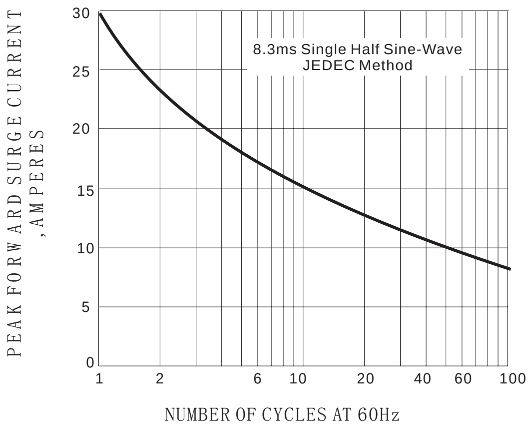


Fig. 4-MAXIMUM NON-REPETITIVE PEAK FORWARD SURGE CURRENT

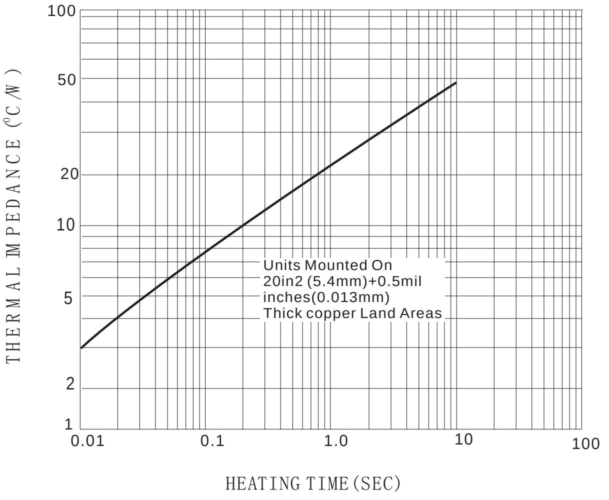


Fig. 5-TRANSIENT THERMAL IMPEDANCE

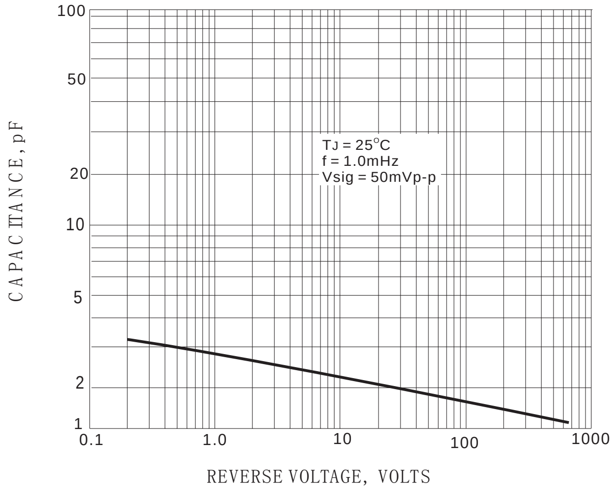


Fig. 6-TYPICAL JUNCTION CAPACITANCE