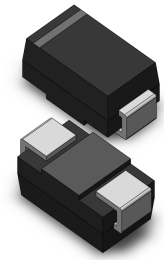
# GF1A - GF1M

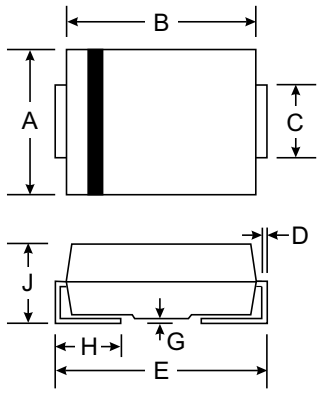
## SURFACE MOUNT SILICON RECTIFIER DIODES

**VOLTAGE RANGE: 50 - 1000V**
**CURRENT: 1.0 A**



## Features

- Plastic package has Underwriters Laboratory Flammability Classification 94V-0
- Ideal for surface mount automotive applications
- High temperature metallurgically bonded construction
- Glass passivated cavity-free junction
- Capable of meeting environmental standards of
- High temperature soldering guaranteed: 450°C/5 seconds at terminals
- Complete device submersible temperature of 265°C for 10 seconds in solder bath




| SMA(DO-214AC) | | |
|---|---|---|
| **Dim** | **Min** | **Max** |
| **A** | 2.29 | 2.92 |
| **B** | 4.00 | 4.60 |
| **C** | 1.27 | 1.63 |
| **D** | 0.15 | 0.31 |
| **E** | 4.80 | 5.59 |
| **G** | 0.10 | 0.20 |
| **H** | 0.76 | 1.52 |
| **J** | 2.01 | 2.62 |
| **All Dimensions in mm** | | |

## Mechanical Data

- Case SMA(DO-214AC) Molded Plastic
- Polarity: Indicated by cathode band
- Weight: 0.002 ounces, 0.053 grams
- Mounting position: Any

RoHS COMPLIANT

## Maximum Ratings and Electrical Characteristics

$T_A$ = 25°C unless otherwise specified

Single phase, half wave, 60Hz, resistive or inductive load. For capacitive load, derate current by 20%.

| Characteristic | Symbol | GF1A | GF1B | GF1D | GF1G | GF1J | GF1K | GF1M | Unit |
|---|---|---|---|---|---|---|---|---|---|
| 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 at $T_L$=125°C | $I_{(AV)}$ | 1.0 | | | | | | | Amp |
| Peak forward surge current 8.3ms single half sine-wave superimposed on rated load (JEDEC Method) | $I_{FSM}$ | 30.0 | | | | | | | Amps |
| Maximum instantaneous forward voltage at 1.0A | $V_F$ | 1.10 | | | | | 1.20 | | Volts |
| Maximum DC reverse current $T_A$=25°C<br>at rated DC blocking voltage $T_A$=125°C | $I_R$ | 5.0<br>50.0 | | | | | | | µA |
| Typical reverse recovery time (NOTE 1) | $t_{rr}$ | 2.0 | | | | | | | µs |
| Typical junction capacitance (NOTE 2) | $C_J$ | 15.0 | | | | | | | pF |
| Typical thermal resistance (NOTE 3) | $R_{\Theta JA}$<br>$R_{\Theta JL}$ | 80.0<br>26.0 | | | | | | | °C/W |
| Operating junction and storage temperature range | $T_J$, $T_{STG}$ | -65 to +175 | | | | | | | °C |

**NOTES**:
(1) Reverse recovery test conditions: $I_F$=0.5A, $I_R$=1.0A, $I_{rr}$=0.25A
(2) Measured at 1.0 MHz and applied $V_R$=4.0 Volts
(3) Thermal resistance from junction to ambient and from junction to lead P.C.B. mounted on 0.2 x 0.2" (5.0 x 5.0mm) copper pad areas

# RATINGS AND CHARACTERISTIC CURVES GF1A THRU GF1M

**FIG. 1 - FORWARD CURRENT DERATING CURVE**

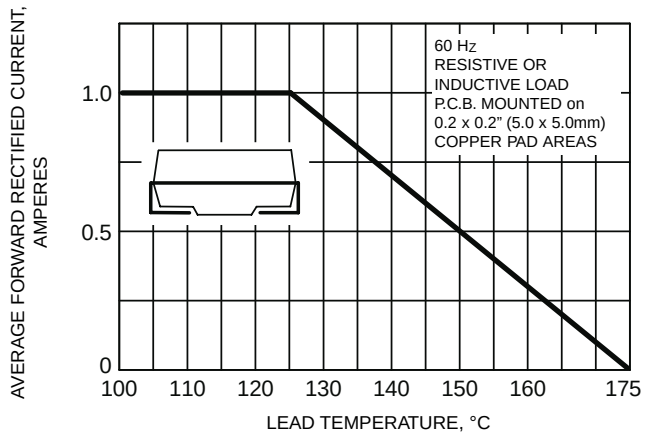



**FIG. 2 - MAXIMUM NON-REPETITIVE PEAK FORWARD SURGE CURRENT**

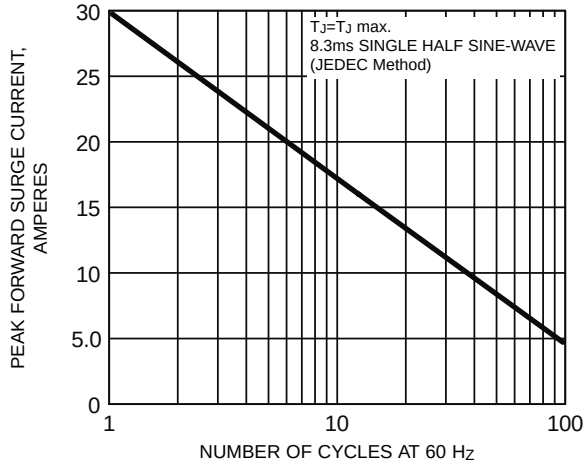



**FIG. 3 - TYPICAL INSTANTANEOUS FORWARD CHARACTERISTICS**

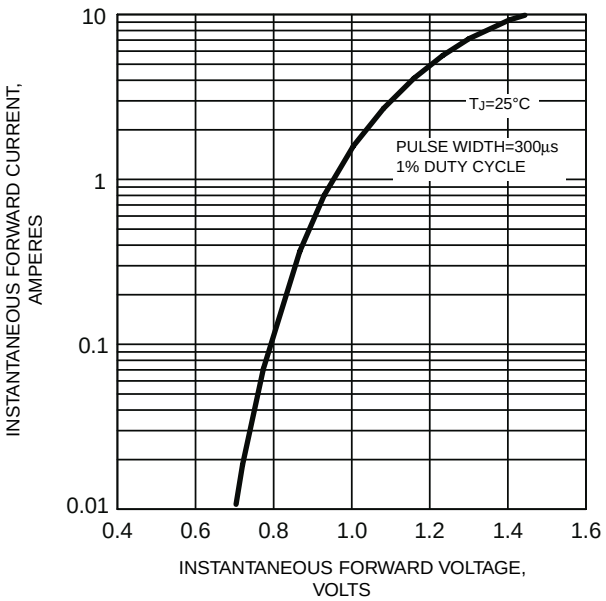



**FIG. 4 - TYPICAL REVERSE CHARACTERISTICS**

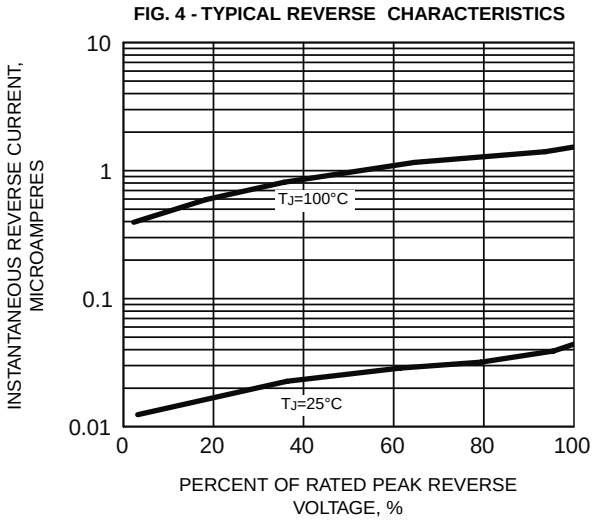



**FIG. 5 - TYPICAL JUNCTION CAPACITANCE**

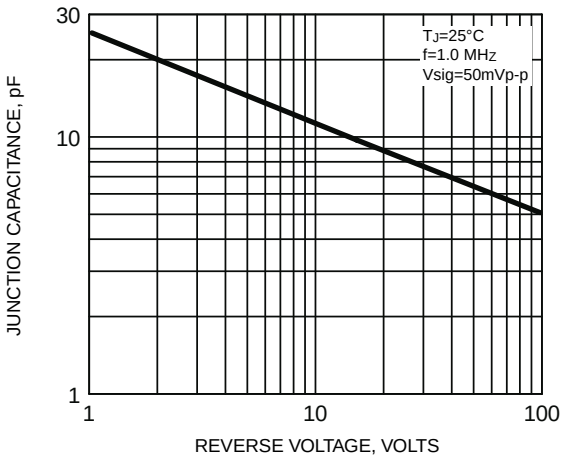



**FIG. 6 - TYPICAL TRANSIENT THERMAL IMPEDANCE**