# GRL1A THRU GRL1M

## SURFACE MOUNT FAST SWITCHING RECTIFIER

**VOLTAGE：50 TO 1000V　　CURRENT： 1.0A**

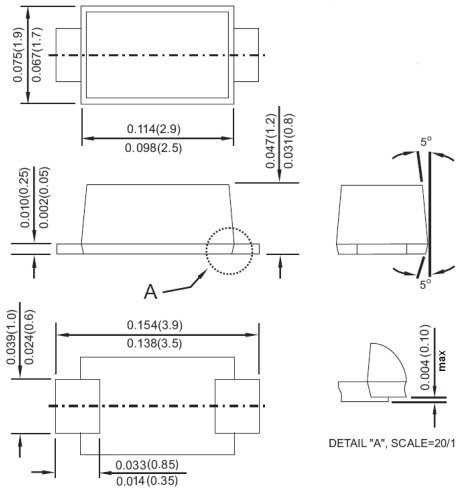
## FEATURE

Ideal for surface mount pick and place applications
Low profile package
Built-in strain relief
High surge capability
High temperature soldering guaranteed
260℃/10sec/at terminals
Glass passivated chip
Fast recovery time for high efficiency

## MECHANICAL DATA

Terminal：Plated leads solderable per MIL-STD 750, method 2026
Case：Molded with UL-94 class V-0 recognized Flame Retardant Epoxy
Polarity：color band denotes cathode
Marking：R1A～R1M

**SMF**




Dimensions in inches and (millimeters)

## MAXIMUM RATINGS AND ELECTRICAL CHARACTERISTICS

(single-phase, half-wave, 60HZ, resistive or inductive load rating at 25℃, unless otherwise stated)

| | SYMBOL | GRL 1A | GRL 1B | GRL 1D | GRL 1G | GRL 1J | GRL 1K | GRL 1M | 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 3/8″lead length at TL=110℃ | If(av) | 1.0 | | | | | | | A |
| Peak Forward Surge Current 8.3ms single half sine-wave superimposed on rated load | Ifsm | 30 | | | | | | | A |
| Maximum Forward Voltage at rated forward current | Vf | 1.3 | | | | | | | V |
| Maximum DC Reverse Current Ta =25℃<br>at rated DC blocking voltage Ta =125℃ | Ir | 5.0<br>300.0 | | | | | | | μA |
| Maximum Reverse Recovery Time (Note1 ) | Trr | 150 | | | | 250 | 500 | | nS |
| Typical Junction Capacitance (Note 2) | Cj | 9.0 | | | | | | | pF |
| Typical Thermal Resistance (Note 3) | Rth(jl) | 30 | | | | | | | ℃/ W |
| Storage and Operating Junction Temperature | Tstg, Tj | -50 to +150 | | | | | | | ℃ |

Note：
1. Reverse Recovery Condition If =0.5A, Ir =1.0A, Irr =0.25A
2. Measured at 1.0 MHz and applied reverse voltage of 4.0Vdc
3. Thermal Resistance from Junction to terminal mounted on 5×5mm copper pad area

**Fig. 1 – Forward Current Derating Curve**

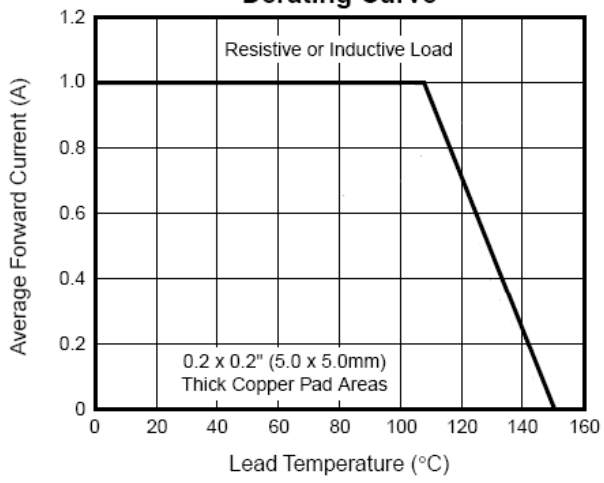



**FIG. 2 - MAXIMUM NON-REPETITIVE PEAK FORWARD SURGE CURRENT**

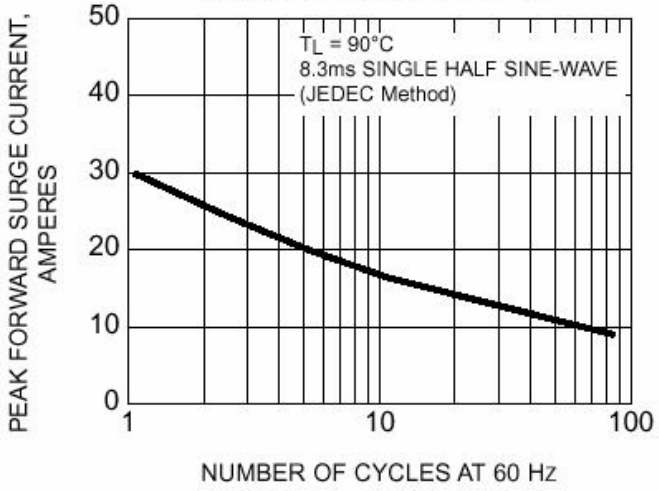



**FIG. 3 - TYPICAL INSTANTANEOUS FORWARD CHARACTERISTICS**

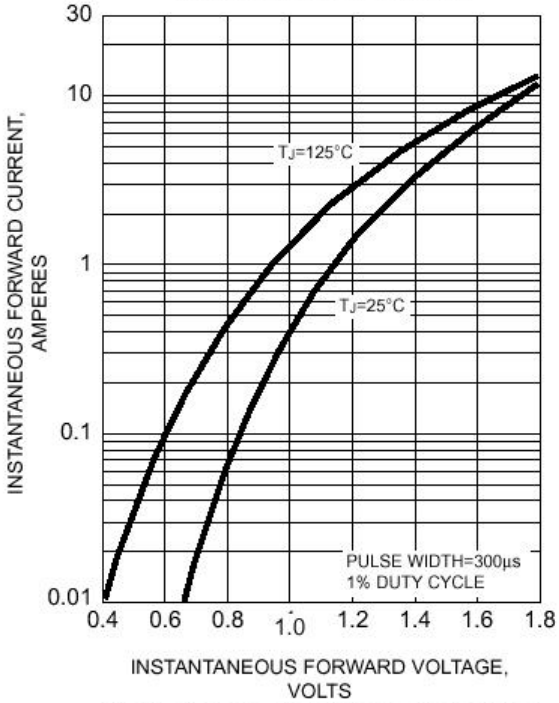



**FIG. 4 - TYPICAL REVERSE CHARACTERISTICS**

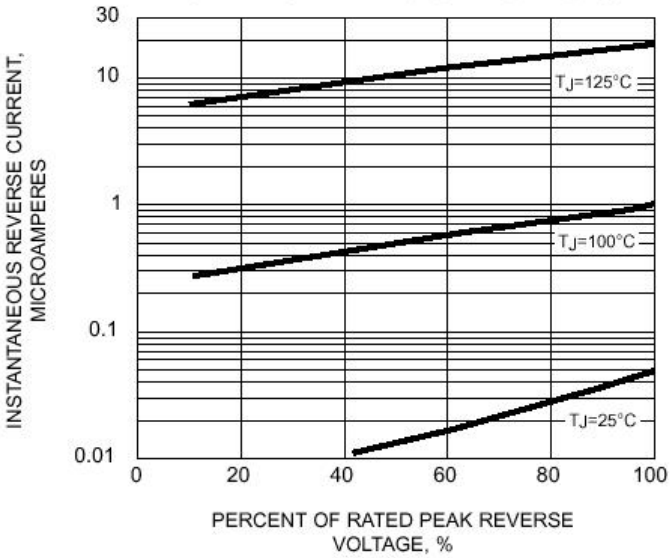



**FIG. 5 - TYPICAL JUNCTION CAPACITANCE**

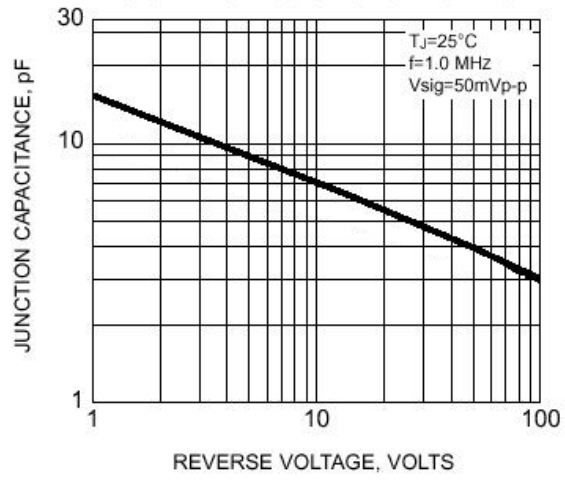



**FIG. 6 - TYPICAL TRANSIENT THERMAL IMPEDANCE**