

# RGP10A - RGP10M

## Features

- 1.0 ampere operation at  $T_A = 55^\circ\text{C}$  with no thermal runaway.
- High temperature metallurgically bonded construction.
- Glass passivated cavity-free junction.
- Typical  $I_R$  less than  $1\mu\text{A}$ .
- Fast switching for high efficiency.



**DO-41**  
 COLOR BAND DENOTES CATHODE

## Fast Rectifiers (Glass Passivated)

### Absolute Maximum Ratings\*

$T_A = 25^\circ\text{C}$  unless otherwise noted

| Symbol      | Parameter                                                                          | Value       |     |     |     |     |     |      | Units            |
|-------------|------------------------------------------------------------------------------------|-------------|-----|-----|-----|-----|-----|------|------------------|
|             |                                                                                    | 10A         | 10B | 10D | 10G | 10J | 10K | 10M  |                  |
| $V_{RRM}$   | Maximum Repetitive Reverse Voltage                                                 | 50          | 100 | 200 | 400 | 600 | 800 | 1000 | V                |
| $I_{F(AV)}$ | Average Rectified Forward Current,<br>.375" lead length @ $T_L = 55^\circ\text{C}$ | 1.0         |     |     |     |     |     |      | A                |
| $I_{FSM}$   | Non-repetitive Peak Forward Surge Current<br>8.3 ms Single Half-Sine-Wave          | 30          |     |     |     |     |     |      | A                |
| $T_{stg}$   | Storage Temperature Range                                                          | -65 to +175 |     |     |     |     |     |      | $^\circ\text{C}$ |
| $T_J$       | Operating Junction Temperature                                                     | -65 to +175 |     |     |     |     |     |      | $^\circ\text{C}$ |

\*These ratings are limiting values above which the serviceability of any semiconductor device may be impaired.

## Thermal Characteristics

| Symbol          | Parameter                               | Value | Units              |
|-----------------|-----------------------------------------|-------|--------------------|
| $P_D$           | Power Dissipation                       | 3.0   | W                  |
| $R_{\theta JA}$ | Thermal Resistance, Junction to Ambient | 50    | $^\circ\text{C/W}$ |

## Electrical Characteristics

$T_A = 25^\circ\text{C}$  unless otherwise noted

| Symbol          | Parameter                                                                                         | Device     |     |     |     |     |     |     | Units    |
|-----------------|---------------------------------------------------------------------------------------------------|------------|-----|-----|-----|-----|-----|-----|----------|
|                 |                                                                                                   | 10A        | 10B | 10D | 10G | 10J | 10K | 10M |          |
| V <sub>F</sub>  | Forward Voltage @ 1.0 A                                                                           | 1.3        |     |     |     |     |     |     | V        |
| t <sub>rr</sub> | Reverse Recovery Time<br>I <sub>F</sub> = 0.5 A, I <sub>R</sub> = 1.0 A, I <sub>rr</sub> = 0.25 A | 150        |     |     |     | 250 | 500 |     | ns       |
| I <sub>R</sub>  | Reverse Current @ rated V <sub>R</sub> T <sub>A</sub> = 25°C<br>T <sub>A</sub> = 150°C            | 5.0<br>200 |     |     |     |     |     |     | μA<br>μA |
| C <sub>T</sub>  | Total Capacitance<br>V <sub>R</sub> = 4.0 V, f = 1.0 MHz                                          | 15         |     |     |     |     |     |     | pF       |

## Typical Characteristics

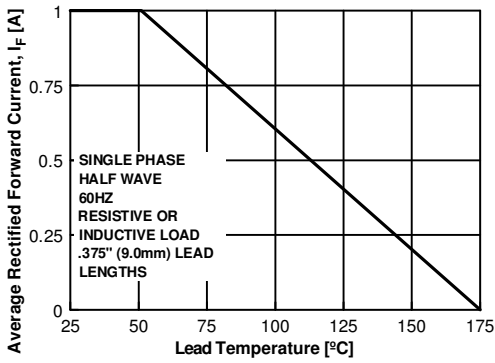


Figure 1. Forward Current Derating Curve

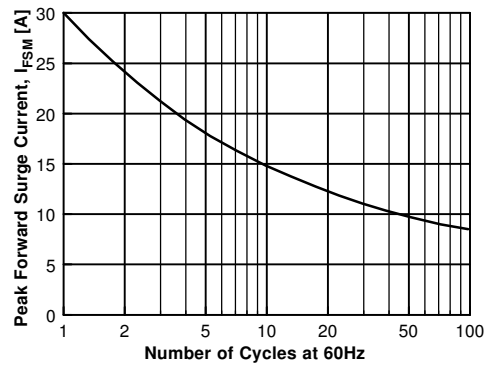


Figure 2. Non-Repetitive Surge Current

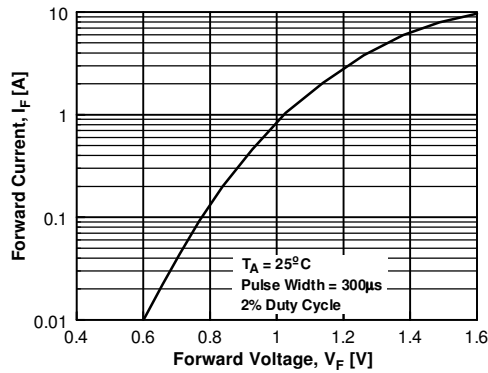


Figure 3. Forward Voltage Characteristics

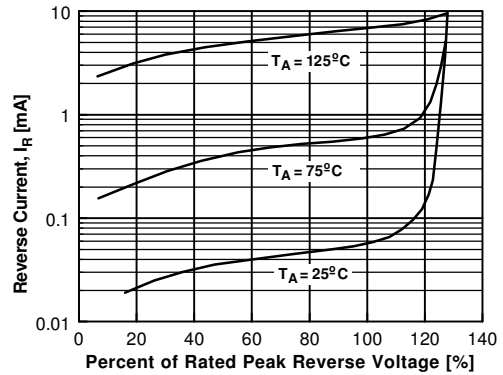


Figure 4. Reverse Current vs Reverse Voltage

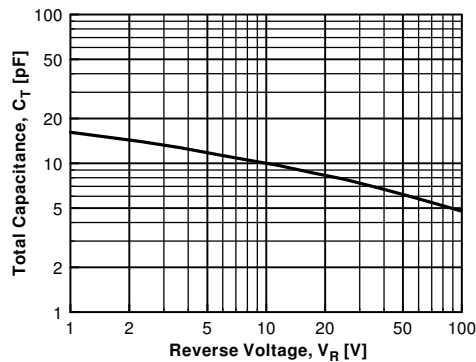
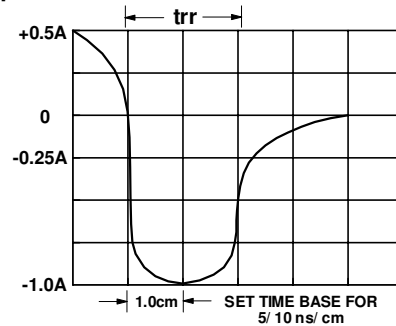
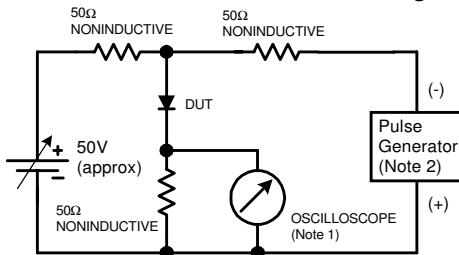


Figure 5. Total Capacitance



Reverse Recovery Time Characteristic and Test Circuit Diagram

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