

MRA4003T3 Series

MAXIMUM RATINGS

| Rating | Symbol | Value | | | | | Unit |
|---|---------------------------------|------------|-----------|-------------------------|-----------|-----------|------------------|
| | | MRA4003T3 | MRA4004T3 | MRA4005T1, MRA4005T3 | MRA4006T3 | MRA4007T3 | |
| Peak Repetitive Reverse Voltage Working Peak Reverse Voltage DC Blocking Voltage | V_{RRM} V_{RWM} V_R | 300 | 400 | 600 | 800 | 1000 | Volts |
| Avg. Rectified Forward Current (At Rated V_R , $T_L = 150^\circ\text{C}$) | I_O | 1 | | | | | Amp |
| Peak Repetitive Forward Current (At Rated V_R , Square Wave, 20 kHz, $T_L = 150^\circ\text{C}$) | I_{FRM} | 2 | | | | | Amps |
| Non-Repetitive Peak Surge Current (Surge applied at rated load conditions, halfwave, single phase, 60 Hz) | I_{FSM} | 30 | | | | | Amps |
| Storage/Operating Case Temperature | T_{stg} , T_C | -55 to 150 | | | | | $^\circ\text{C}$ |
| Operating Junction Temperature | T_J | -55 to 175 | | | | | $^\circ\text{C}$ |

Stresses exceeding Maximum Ratings may damage the device. Maximum Ratings are stress ratings only. Functional operation above the Recommended Operating Conditions is not implied. Extended exposure to stresses above the Recommended Operating Conditions may affect device reliability.

THERMAL CHARACTERISTICS

| Characteristic | Symbol | Value | Unit |
|--|-----------------|-------|--------------------|
| Thermal Resistance, Junction-to-Lead (Note 1) | $R_{\theta JL}$ | 16.2 | $^\circ\text{C/W}$ |
| Thermal Resistance, Junction-to-Ambient (Note 2) | $R_{\theta JA}$ | 88.3 | $^\circ\text{C/W}$ |

ELECTRICAL CHARACTERISTICS

| Characteristic | Symbol | Value | | Unit |
|--|--------|--------------------------|---------------------------|---------------|
| | | $T_J = 25^\circ\text{C}$ | $T_J = 100^\circ\text{C}$ | |
| Maximum Instantaneous Forward Voltage (Note 3) ($I_F = 1\text{ A}$) ($I_F = 2\text{ A}$) | V_F | 1.1 1.18 | 1.04 1.12 | Volts |
| Maximum Instantaneous Reverse Current (at rated DC voltage) | I_R | 10 | 50 | μA |

1. Minimum Pad Size
2. 1 inch Pad Size
3. Pulse Test: Pulse Width $\leq 250\text{ }\mu\text{s}$, Duty Cycle $\leq 2\%$.

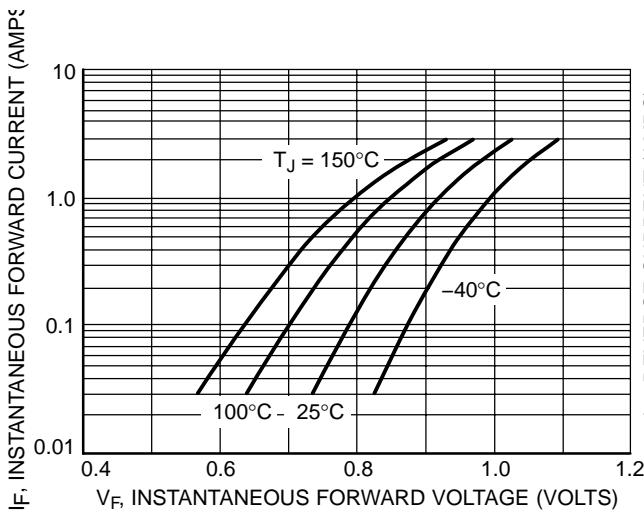


Figure 1. Typical Forward Voltage

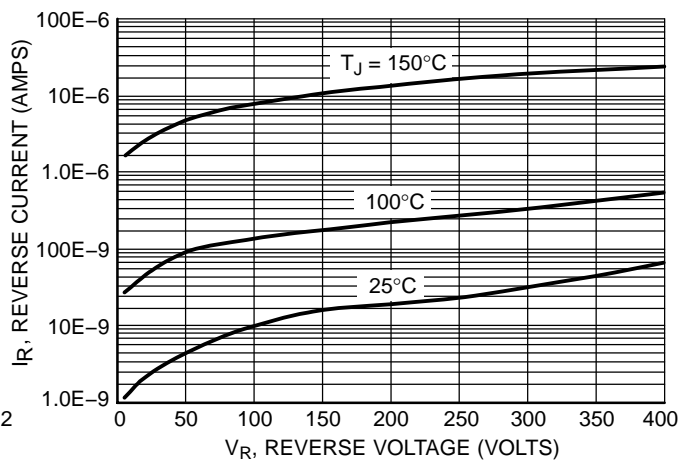


Figure 2. Typical Reverse Current

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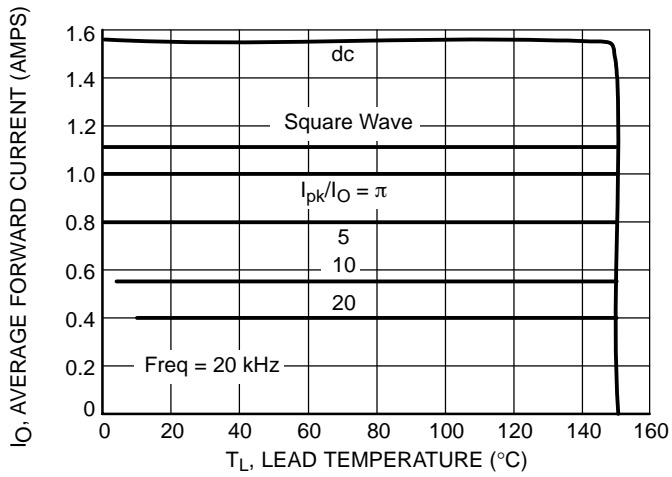


Figure 3. Current Derating per Leg

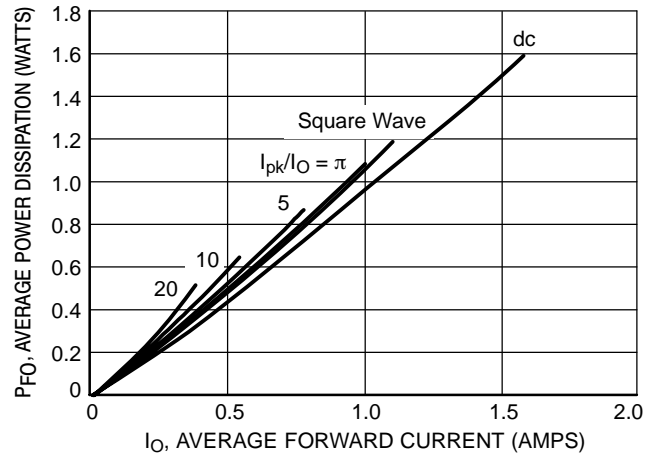


Figure 4. Forward Power Dissipation per Leg

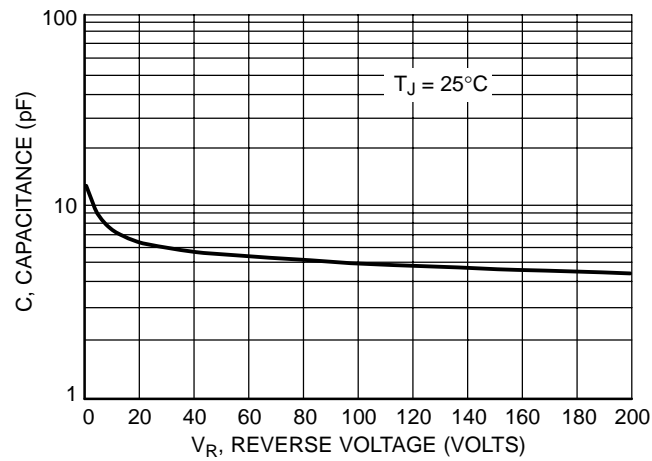


Figure 5. Capacitance

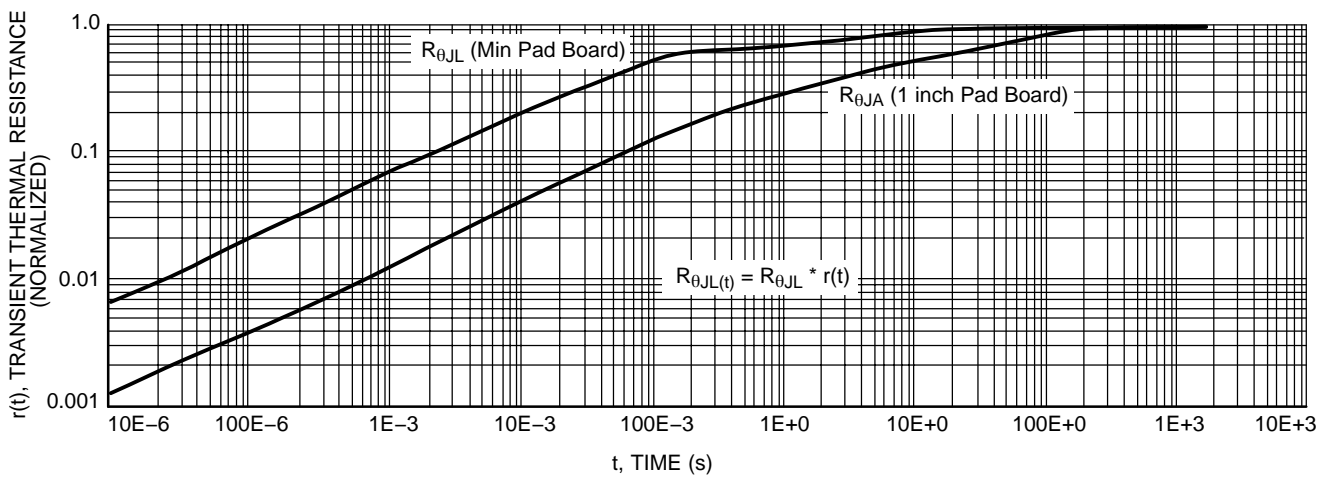


Figure 6. Thermal Response

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ORDERING INFORMATION

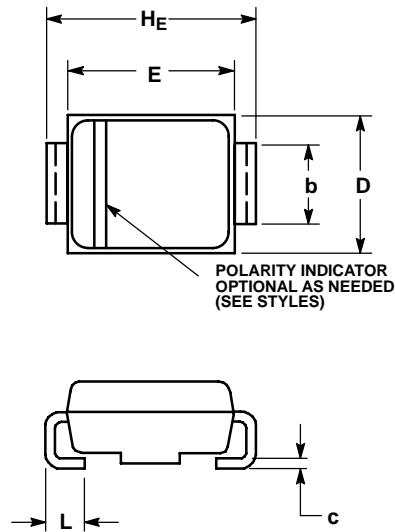
| Device | Package | Shipping† |
|------------|------------------|------------------|
| MRA4003T3 | SMA | 5000/Tape & Reel |
| MRA4003T3G | SMA (Pb-Free) | 5000/Tape & Reel |
| MRA4004T3 | SMA | 5000/Tape & Reel |
| MRA4004T3G | SMA (Pb-Free) | 5000/Tape & Reel |
| MRA4005T1 | SMA | 1500/Tape & Reel |
| MRA4005T1G | SMA (Pb-Free) | 1500/Tape & Reel |
| MRA4005T3 | SMA | 5000/Tape & Reel |
| MRA4005T3G | SMA (Pb-Free) | 5000/Tape & Reel |
| MRA4006T3 | SMA | 5000/Tape & Reel |
| MRA4006T3G | SMA (Pb-Free) | 5000/Tape & Reel |
| MRA4007T3 | SMA | 5000/Tape & Reel |
| MRA4007T3G | SMA (Pb-Free) | 5000/Tape & Reel |

†For information on tape and reel specifications, including part orientation and tape sizes, please refer to our Tape and Reel Packaging Specifications Brochure, BRD8011/D.

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PACKAGE DIMENSIONS

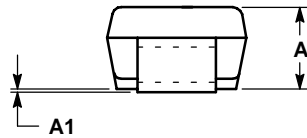
SMA CASE 403D-02 ISSUE C



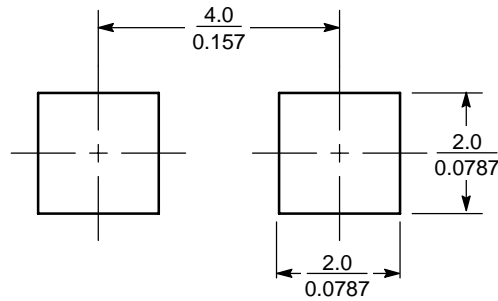
NOTES:

1. DIMENSIONING AND TOLERANCING PER ANSI Y14.5M, 1982.
2. CONTROLLING DIMENSION: INCH.
3. 403D-01 OBSOLETE, NEW STANDARD IS 403D-02.

| DIM | MILLIMETERS | | | INCHES | | |
|-----|-------------|------|------|--------|-------|-------|
| | MIN | NOM | MAX | MIN | NOM | MAX |
| A | 1.91 | 2.16 | 2.41 | 0.075 | 0.085 | 0.095 |
| A1 | 0.05 | 0.10 | 0.15 | 0.002 | 0.004 | 0.006 |
| b | 1.27 | 1.45 | 1.63 | 0.050 | 0.057 | 0.064 |
| c | 0.15 | 0.28 | 0.41 | 0.006 | 0.011 | 0.016 |
| D | 2.29 | 2.60 | 2.92 | 0.090 | 0.103 | 0.115 |
| E | 4.06 | 4.32 | 4.57 | 0.160 | 0.170 | 0.180 |
| HE | 4.83 | 5.21 | 5.59 | 0.190 | 0.205 | 0.220 |
| L | 0.76 | 1.14 | 1.52 | 0.030 | 0.045 | 0.060 |




SOLDERING FOOTPRINT*



SCALE 8:1 ($\frac{\text{mm}}{\text{inches}}$)

*For additional information on our Pb-Free strategy and soldering details, please download the ON Semiconductor Soldering and Mounting Techniques Reference Manual, SOLDERRM/D.

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