



**TAYCHIPST**

**Surface Mount Schottky Power Rectifier**

**MBRA320T3G**

20V 3.0A

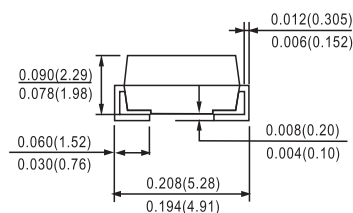
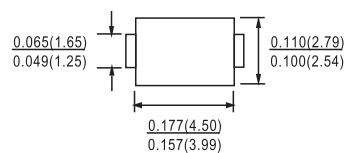
**FEATURES**

- Small Compact Surface Mountable Package with J-Bent Leads
- Rectangular Package for Automated Handling
- Highly Stable Oxide Passivated Junction
- Very Low Forward Voltage Drop
- Guardring for Stress Protection
- Pb-Free Package is Available

**MECHANICAL DATA**

- Case: Epoxy, Molded
- Weight: 70 mg (approximately)
- Finish: All External Surfaces Corrosion Resistant and Terminal Leads are Readily Solderable
- Lead and Mounting Surface Temperature for Soldering Purposes: 260°C Max. for 10 Seconds
- Shipped in 12 mm tape, 5000 units per 13 inch reel
- Polarity: Cathode Lead Indicated by Polarity Band

DO-214AC(SMA)



Dimensions in inches and (millimeters)

**MAXIMUM RATINGS AND ELECTRICAL CHARACTERISTICS**

**MAXIMUM RATINGS**

| Rating                                                                                                         | Symbol                          | Value       | Unit             |
|----------------------------------------------------------------------------------------------------------------|---------------------------------|-------------|------------------|
| Peak Repetitive Reverse Voltage<br>Working Peak Reverse Voltage<br>DC Blocking Voltage                         | $V_{RRM}$<br>$V_{RWM}$<br>$V_R$ | 20          | V                |
| Average Rectified Forward Current<br>(At Rated $V_R$ , $T_L = 100^\circ\text{C}$ )                             | $I_O$                           | 3.0         | A                |
| Non-Repetitive Peak Surge Current<br>(Surge Applied at Rated Load Conditions<br>Halfwave, Single Phase, 60 Hz) | $I_{FSM}$                       | 80          | A                |
| Storage Temperature                                                                                            | $T_{stg}$                       | -65 to +150 | $^\circ\text{C}$ |
| Operating Junction Temperature                                                                                 | $T_J$                           | -65 to +125 | $^\circ\text{C}$ |
| Voltage Rate of Change<br>(Rated $V_R$ , $T_J = 25^\circ\text{C}$ )                                            | dv/dt                           | 10,000      | V/ $\mu\text{s}$ |

**THERMAL CHARACTERISTICS**

| Characteristic                                    | Symbol          | Value | Unit                      |
|---------------------------------------------------|-----------------|-------|---------------------------|
| Thermal Resistance - Junction-to-Lead (Note 1)    | $R_{\theta JL}$ | 15    | $^\circ\text{C}/\text{W}$ |
| Thermal Resistance - Junction-to-Ambient (Note 1) | $R_{\theta JA}$ | 80    | $^\circ\text{C}/\text{W}$ |

**ELECTRICAL CHARACTERISTICS**

|                                                |                                                      |       |                           |       |
|------------------------------------------------|------------------------------------------------------|-------|---------------------------|-------|
| Maximum Instantaneous Forward Voltage (Note 2) | ( $I_F = 3.0 \text{ A}$ , $T_J = 25^\circ\text{C}$ ) | $V_F$ | 0.50                      | Volts |
| Maximum Instantaneous Reverse Current (Note 2) | (V <sub>R</sub> = 20 V)                              | $I_R$ | $T_J = 25^\circ\text{C}$  | mA    |
|                                                |                                                      |       | $T_J = 100^\circ\text{C}$ |       |

1. Mounted on 2" Square PC Board with 1" Square Total Pad Size, PC Board FR4.
2. Pulse Test: Pulse Width = 300 s, Duty Cycle ≤ 2.0%.



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RATINGS AND CHARACTERISTIC CURVES MBRA320T3G

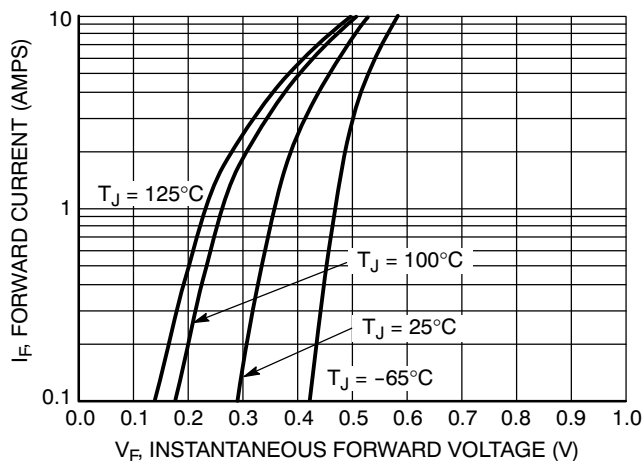


Figure 1. Typical Forward Voltage

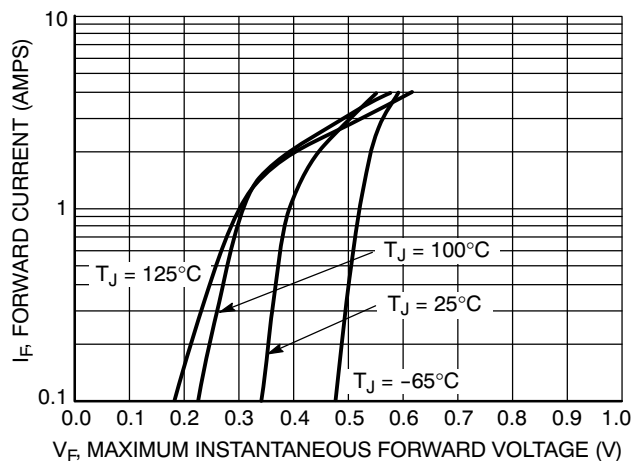


Figure 2. Maximum Forward Voltage

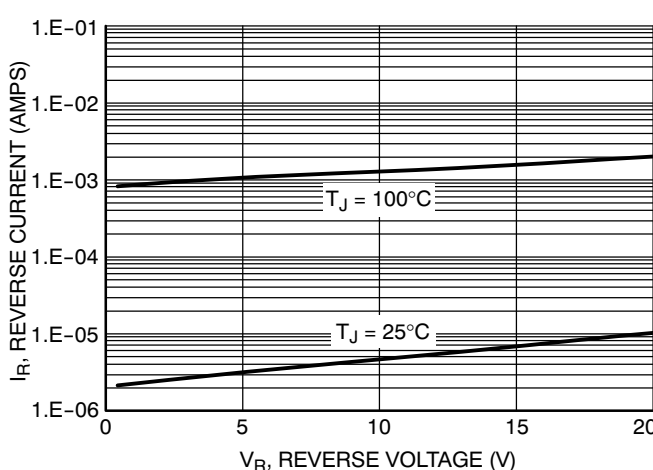


Figure 3. Typical Reverse Current

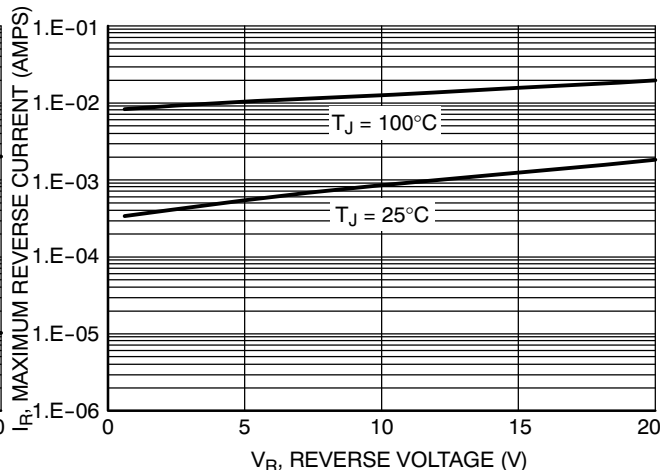


Figure 4. Maximum Reverse Current

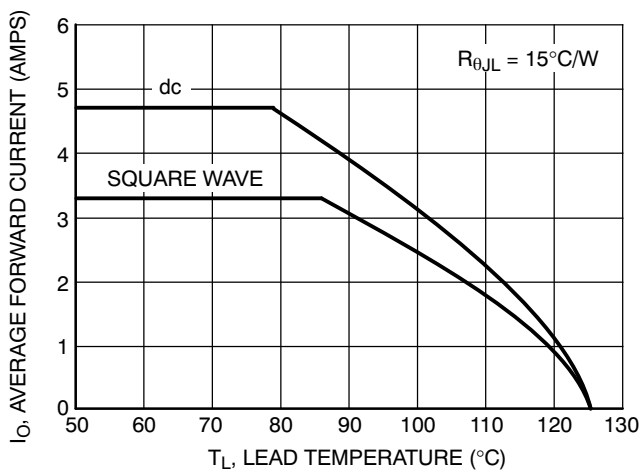


Figure 5. Current Derating

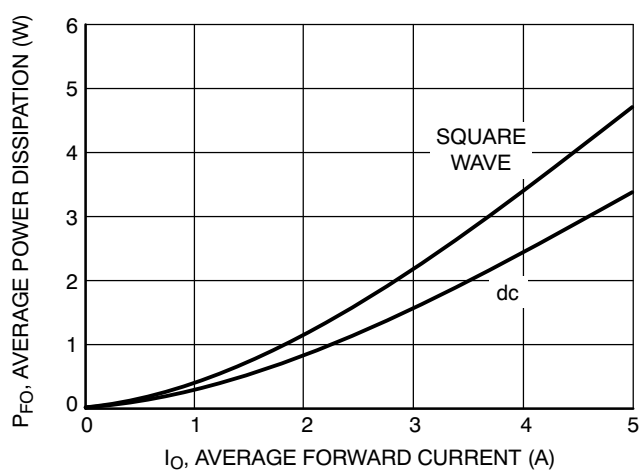


Figure 6. Forward Power Dissipation



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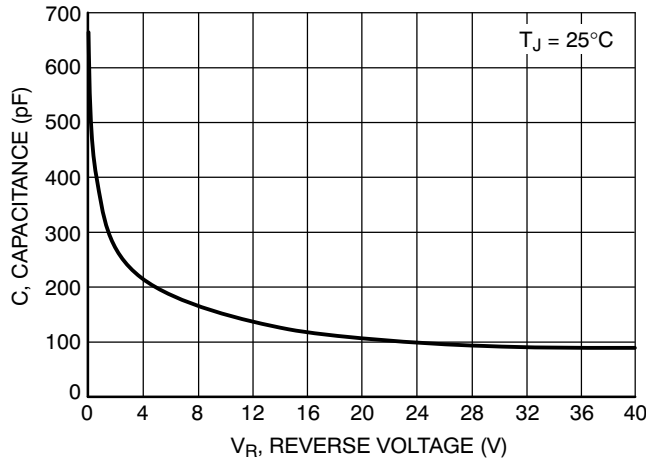


Figure 7. Typical Capacitance

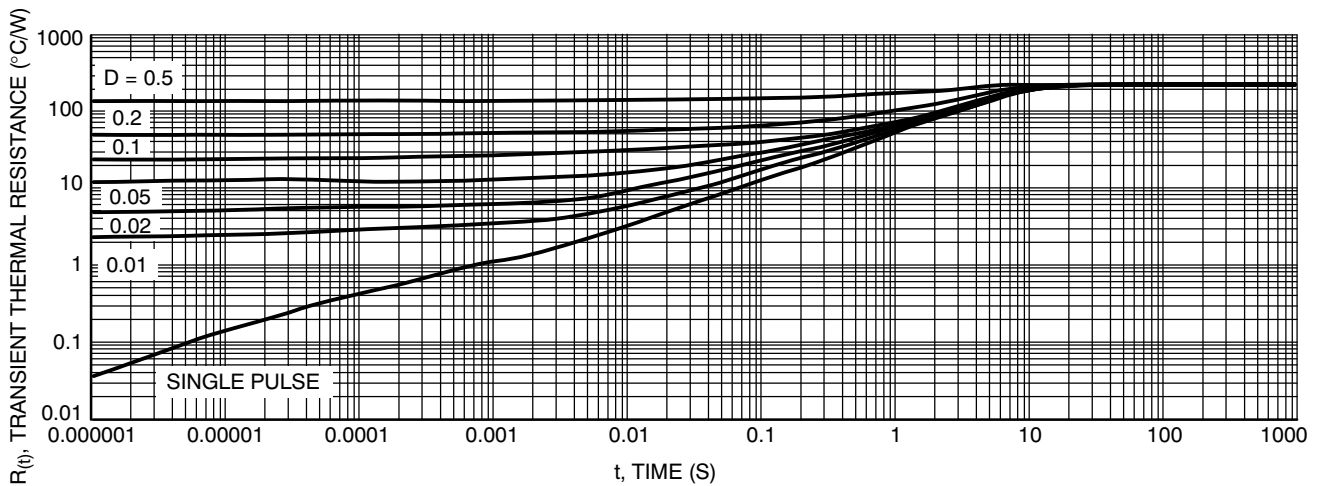


Figure 8. Thermal Response, Junction-to-Ambient (min pad)

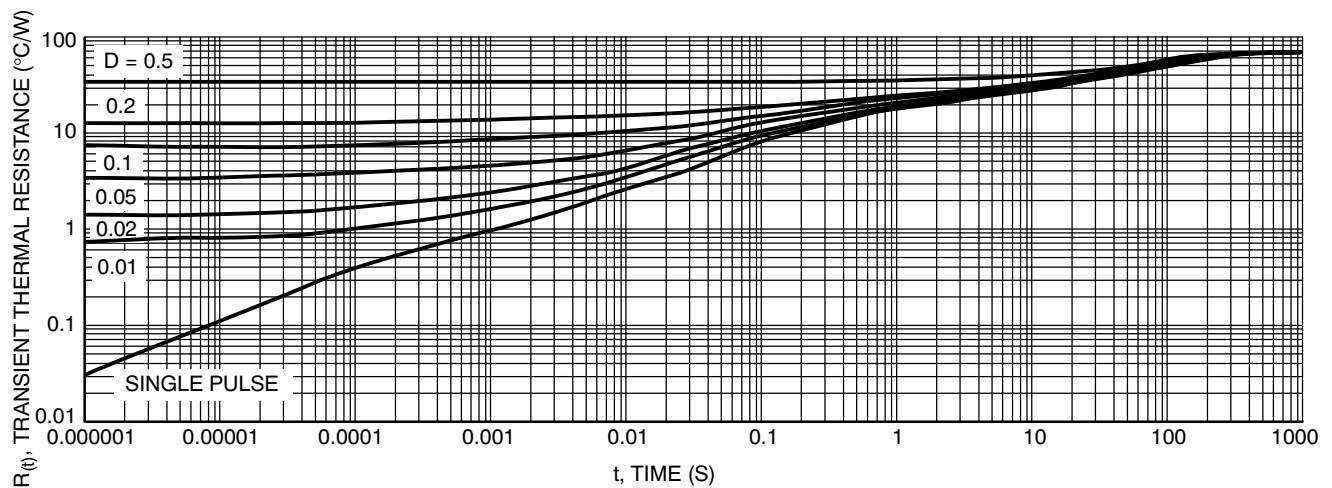


Figure 9. Thermal Response, Junction to Ambient (1 inch pad)