

## Features

- Halogen Free. "Green" Device (Note 1)
- Fully Automotive Qualified to AEC-Q101
- Epoxy Meets UL 94 V-0 Flammability Rating
- Moisture Sensitivity Level 1
- Lead Free Finish/RoHS Compliant (Note 2) ("P" Suffix Designates RoHS Compliant. See Ordering Information)

## Maximum Ratings @ 25°C (Unless Otherwise Specified)

| Parameter   | Symbol      | Value | Unit             |
|---|-------------|-------|------------------|
| Peak Repetitive Reverse Voltage                         | $V_{RRM}$   | 100   | V                |
| Working Peak Reverse Voltage                            | $V_{RWM}$   |       |                  |
| DC Blocking Voltage                                     | $V_R$       |       |                  |
| RMS Reverse Voltage                                     | $V_{RMS}$   | 70    | V                |
| Average Rectified Forward Current                       | $I_{F(AV)}$ | 5     | A                |
| Per Diode<br>Per Device                                 |             | 10    |                  |
| Non-Repetitive Peak Surge Current @8.3ms Half Sine Wave | $I_{FSM}$   | 120   | A                |
| Current Squared Time @ 1ms ≤ t ≤ 8.3ms                  | $I^2t$      | 60    | A <sup>2</sup> s |

## Internal Structure

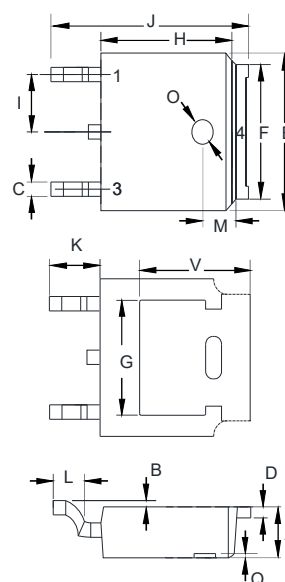
| Pin | Description | Simplified Outline                                       | Graphic Symbol |
|-----|-------------|--|----------------|
| 1,3 | Anode       | <p>MCC<br/>MBRD10100CT<br/>YYWW<br/>YYWW = Date Code</p> |                |
| 2,4 | Cathode     |  |                |

Note: 1. Halogen free "Green" products are defined as those which contain <900ppm bromine, <900ppm chlorine (<1500ppm total Br + Cl) and <1000ppm antimony compounds.

2. High Temperature Solder Exemption Applied, see EU Directive Annex 7a.

# 10 Amp Schottky Barrier Rectifiers 100 Volts

## (TO-252) DPAK



| DIM | DIMENSIONS |       |      |       | NOTE |
|-----|------------|-------|------|-------|------|
|     | INCHES     |       | MM   |       |      |
|     | MIN        | MAX   | MIN  | MAX   |      |
| A   | 0.087      | 0.094 | 2.20 | 2.40  |      |
| B   | 0.000      | 0.005 | 0.00 | 0.13  |      |
| C   | 0.026      | 0.034 | 0.66 | 0.86  |      |
| D   | 0.018      | 0.023 | 0.46 | 0.58  |      |
| E   | 0.256      | 0.264 | 6.50 | 6.70  |      |
| F   | 0.201      | 0.215 | 5.10 | 5.46  |      |
| G   | 0.190      |       | 4.83 |       |      |
| H   | 0.236      | 0.244 | 6.00 | 6.20  |      |
| I   | 0.086      | 0.094 | 2.18 | 2.39  |      |
| J   | 0.386      | 0.409 | 9.80 | 10.40 |      |
| K   | 0.114      |       | 2.90 |       |      |
| L   | 0.055      | 0.067 | 1.40 | 1.70  |      |
| M   | 0.063      |       | 1.60 |       |      |
| O   | 0.043      | 0.051 | 1.10 | 1.30  |      |
| Q   | 0.000      | 0.012 | 0.00 | 0.30  |      |
| V   | 0.211      |       | 5.35 |       |      |

## Thermal characteristics

| Symbol        | Parameter                                | Conditions | Min | Typ | Max | Unit |
|---------------|--|------------|-----|-----|-----|------|
| $T_J$         | Operating Junction Temperature Range     |            | -55 |     | 175 | °C   |
| $T_{stg}$     | Storage Temperature Range                |            | -55 |     | 175 | °C   |
| $R_{th(J-C)}$ | Thermal Resistance from Junction to Case |            |     | 5   |     | °C/W |

## Electrical Characteristics @ 25°C Unless Otherwise Specified

| Parameter                      | Symbol | Test Conditions                  | Min | Typ  | Max  | Unit |
|--------------------------------|--------|----------------------------------|-----|------|------|------|
| Forward Voltage Per Diode      | $V_F$  | $I_F=5A; T_J=25^\circ C$         |     | 0.78 | 0.80 | V    |
|                                |        | $I_F=5A; T_J=125^\circ C$        |     | 0.64 | 0.70 |      |
| Reverse Current Per Diode      | $I_R$  | $V_R=100V; T_J=25^\circ C$       |     |      | 10   | uA   |
|                                |        | $V_R=100V; T_J=125^\circ C$      |     |      | 500  |      |
| Junction Capacitance Per Diode | $C_J$  | $V_R=4V; f=1MHz; T_J=25^\circ C$ |     | 155  |      | pF   |

**Curve Characteristics**

Fig. 1 - Forward Current Derating Curve

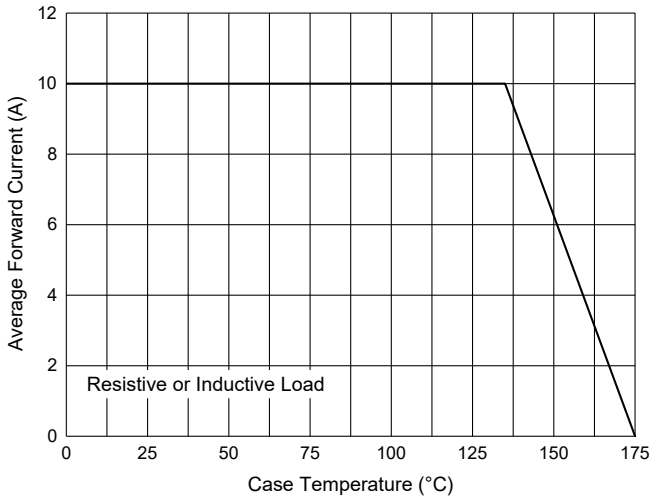


Fig. 2 - Maximum Non-Repetitive Peak Forward Surge Current Per Diode

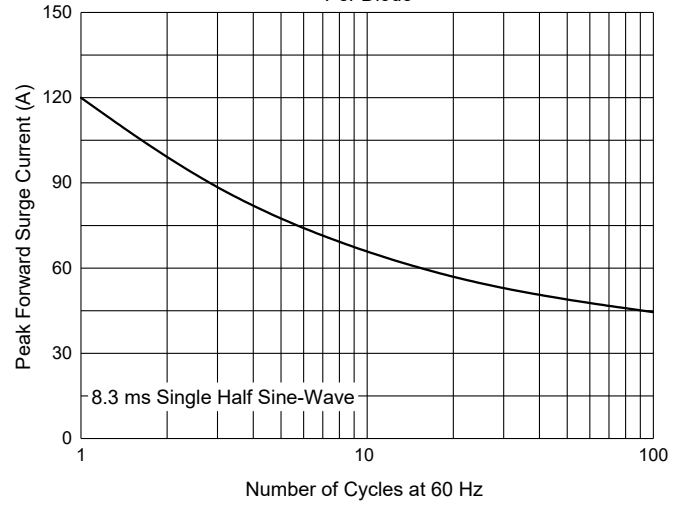


Fig. 3 - Typical Instantaneous Forward Characteristics Per Diode

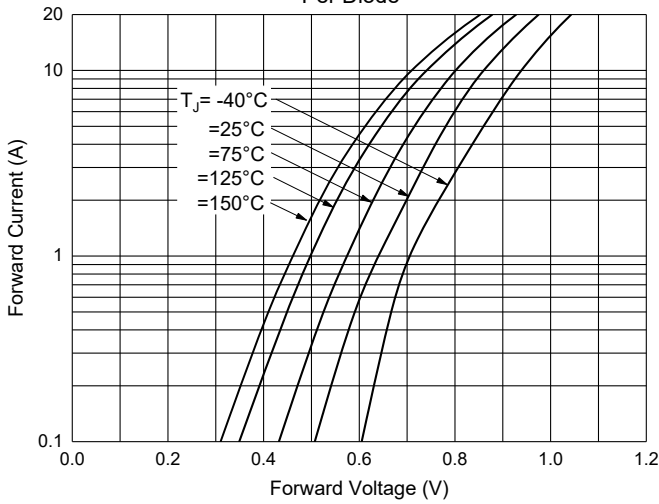


Fig. 4 - Typical Reverse Leakage Characteristics Per Diode

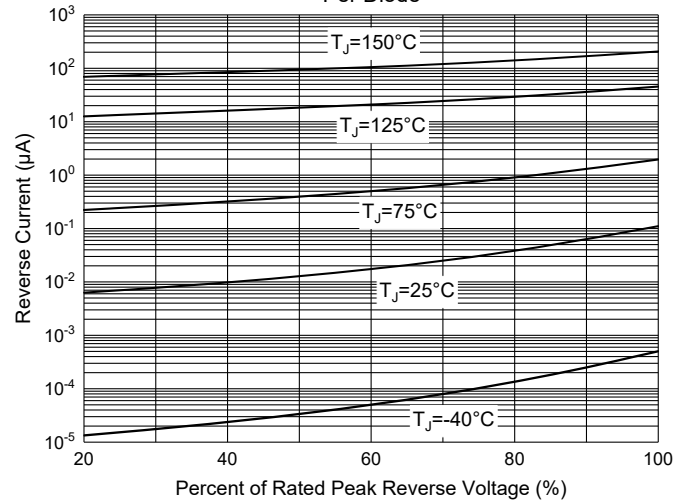
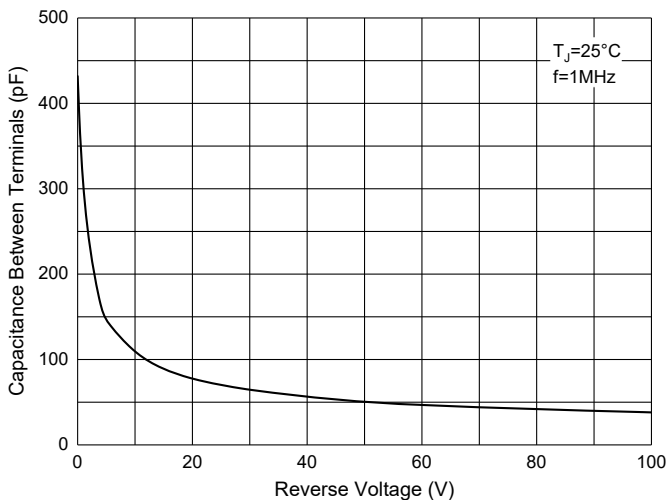


Fig. 5 - Typical Capacitance Characteristics Per Diode



## Ordering Information

| Device         | Packing                 |
|----------------|-------------------------|
| Part Number-TP | Tape&Reel: 2.5Kpcs/Reel |

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