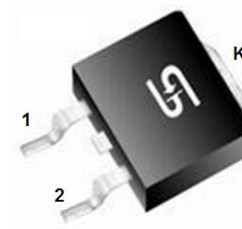
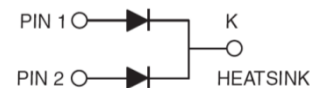


## 20A, 45V - 200V Dual Common Cathode Schottky Rectifiers

### FEATURES

- Low power loss, high efficiency
- Ideal for automated placement
- Guardring for overvoltage protection
- High surge current capability
- Compliant to RoHS Directive 2011/65/EU and in accordance to WEEE 2002/96/EC
- Halogen-free according to IEC 61249-2-21 definition


**TO-263AB (D<sup>2</sup>PAK)**


### MECHANICAL DATA

**Case:** TO-263AB (D<sup>2</sup>PAK)

Molding compound, UL flammability classification rating 94V-0

Moisture sensitivity level: level 1, per J-STD-020

Packing code with suffix "G" means green compound (halogen-free)

**Terminal:** Matte tin plated leads, solderable per JESD22-B102

Meet JESD 201 class 1A whisker test

**Polarity:** As marked

**Weight:** 1.37 g (approximately)

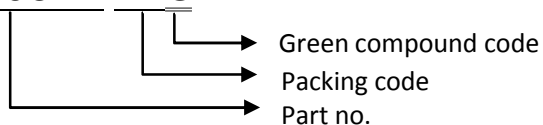
| MAXIMUM RATINGS AND ELECTRICAL CHARACTERISTICS (T <sub>A</sub> =25°C unless otherwise noted)                                              |                    |                      |                      |                       |                       |                       |      |
|-------------------------------------------------------------------------------------------------------------------------------------------|--------------------|----------------------|----------------------|-----------------------|-----------------------|-----------------------|------|
| PARAMETER                                                                                                                                 | SYMBOL             | MBRS<br>2045<br>CT-Y | MBRS<br>2060<br>CT-Y | MBRS<br>20100<br>CT-Y | MBRS<br>20150<br>CT-Y | MBRS<br>20200<br>CT-Y | Unit |
| Marking code                                                                                                                              |                    | MBRS<br>2045CT       | MBRS<br>2060CT       | MBRS<br>20100CT       | MBRS<br>20150CT       | MBRS<br>20200CT       |      |
| Maximum repetitive peak reverse voltage                                                                                                   | V <sub>RRM</sub>   | 45                   | 60                   | 100                   | 150                   | 200                   | V    |
| Maximum RMS voltage                                                                                                                       | V <sub>RMS</sub>   | 31                   | 42                   | 70                    | 105                   | 140                   | V    |
| Maximum DC blocking voltage                                                                                                               | V <sub>DC</sub>    | 45                   | 60                   | 100                   | 150                   | 200                   | V    |
| Maximum average forward rectified current                                                                                                 | I <sub>F(AV)</sub> | 20                   |                      |                       |                       |                       | A    |
| Peak repetitive forward current<br>(Rated VR, Square wave, 20KHz)                                                                         | I <sub>FRM</sub>   | 20                   |                      |                       |                       |                       | A    |
| Peak forward surge current, 8.3 ms single half sine-wave<br>superimposed on rated load                                                    | I <sub>FSM</sub>   | 150                  |                      |                       |                       |                       | A    |
| Peak repetitive reverse surge current (Note 1)                                                                                            | I <sub>RRM</sub>   | 1                    | 0.5                  |                       |                       |                       | A    |
| Maximum instantaneous forward voltage (Note 2)<br>I <sub>F</sub> =10A, T <sub>J</sub> =25°C<br>I <sub>F</sub> =10A, T <sub>J</sub> =125°C | V <sub>F</sub>     | 0.70<br>0.60         | 0.80<br>0.70         | 0.85<br>0.75          | 0.99<br>0.87          |                       | V    |
| Maximum reverse current @ rated VR    T <sub>J</sub> =25°C<br>T <sub>J</sub> =125°C                                                       | I <sub>R</sub>     | 0.1                  |                      |                       |                       |                       | mA   |
|                                                                                                                                           |                    | 15                   | 10                   | 5                     |                       |                       |      |
| Voltage rate of change (Rated V <sub>R</sub> )                                                                                            | dV/dt              | 10000                |                      |                       |                       |                       | V/μs |
| Typical thermal resistance                                                                                                                | R <sub>θJC</sub>   | 1.5                  |                      | 2                     |                       |                       | °C/W |
| Operating junction temperature range                                                                                                      | T <sub>J</sub>     | - 55 to +150         |                      |                       |                       |                       | °C   |
| Storage temperature range                                                                                                                 | T <sub>STG</sub>   | - 55 to +150         |                      |                       |                       |                       | °C   |

Note 1: tp = 2.0 μs, 1.0KHz

Note 2: Pulse test with PW=300μs, 1% duty cycle

## ORDER INFORMATION (EXAMPLE)

**MBRS20100CT-Y RNG**



## RATINGS AND CHARACTERISTICS CURVES

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

FIG.1 FORWARD CURRENT DERATING CURVE

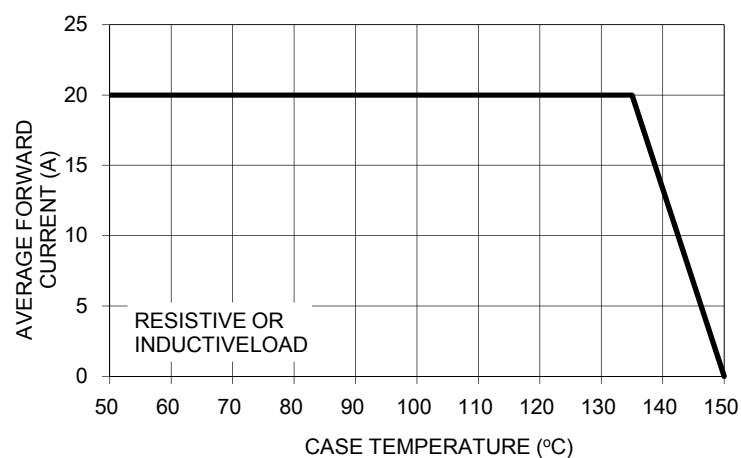


FIG. 2 MAXIMUM NON-REPETITIVE FORWARD SURGE CURRENT PER LEG

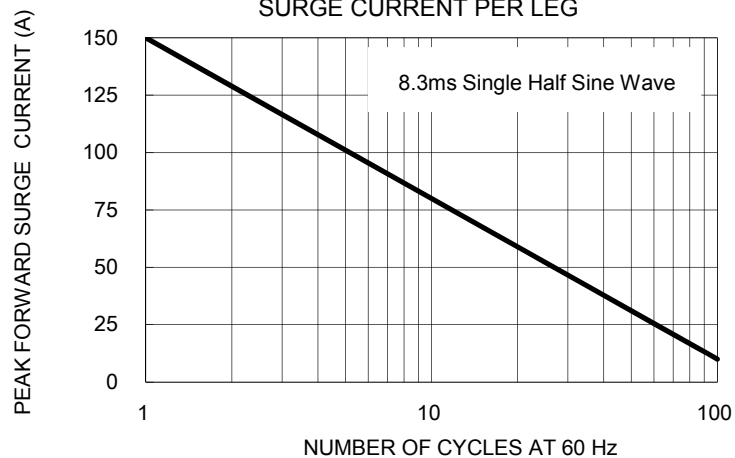


FIG. 3 TYPICAL FORWARD CHARACTERISTICS PER LEG

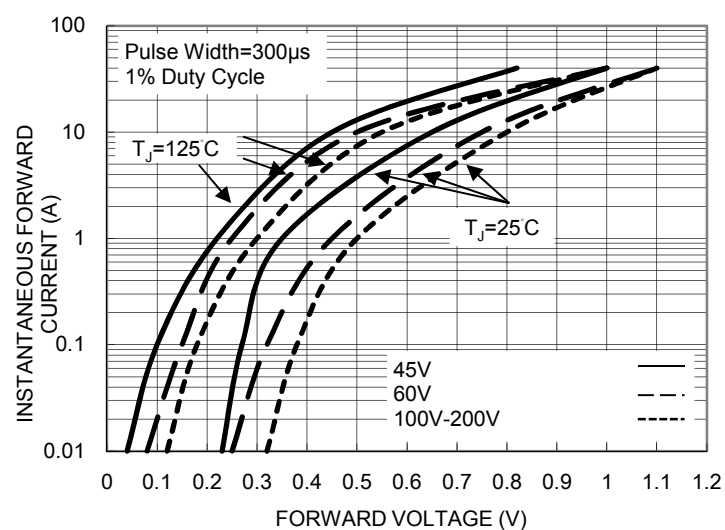


FIG. 4 TYPICAL REVERSE CHARACTERISTICS PER LEG

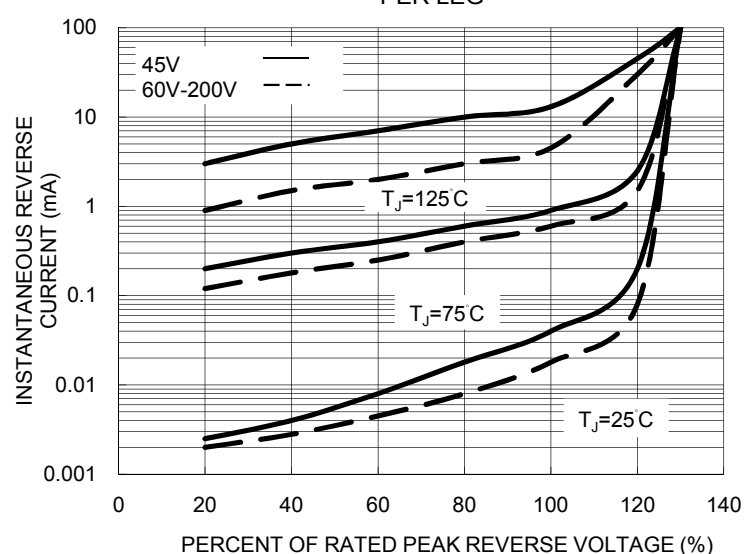


FIG. 5 TYPICAL JUNCTION CAPACITANCE PER LEG

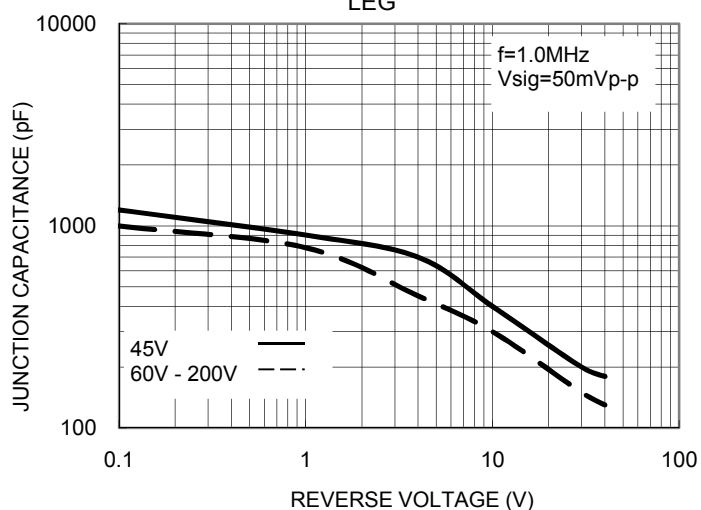
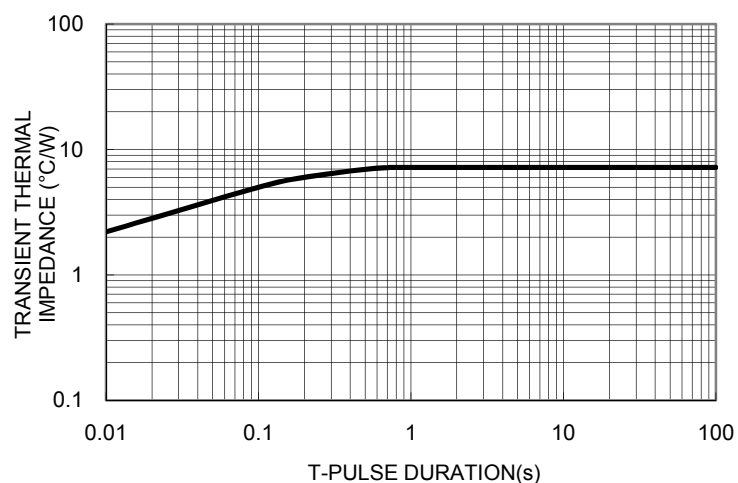
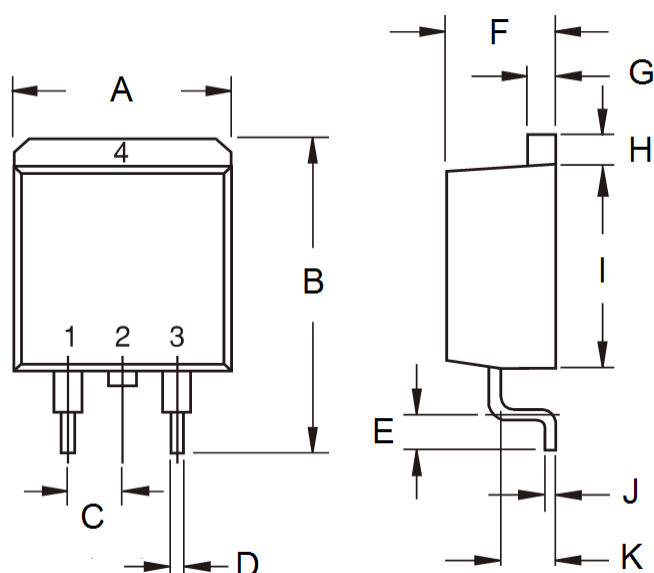


FIG. 6 TYPICAL TRANSIENT THERMAL IMPEDANCE PER LEG



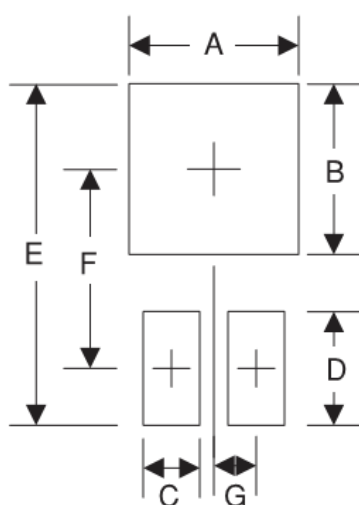
## PACKAGE OUTLINE DIMENSIONS

### TO-263AB (D<sup>2</sup>PAK)



| DIM. | Unit (mm) |       | Unit (inch) |       |
|------|-----------|-------|-------------|-------|
|      | Min       | Max   | Min         | Max   |
| A    | -         | 10.5  | -           | 0.413 |
| B    | 14.60     | 15.88 | 0.575       | 0.625 |
| C    | 2.41      | 2.67  | 0.095       | 0.105 |
| D    | 0.68      | 0.94  | 0.027       | 0.037 |
| E    | 2.29      | 2.79  | 0.090       | 0.110 |
| F    | 4.44      | 4.70  | 0.175       | 0.185 |
| G    | 1.14      | 1.40  | 0.045       | 0.055 |
| H    | 1.14      | 1.40  | 0.045       | 0.055 |
| I    | 8.25      | 9.25  | 0.325       | 0.364 |
| J    | 0.36      | 0.53  | 0.014       | 0.021 |
| K    | 2.03      | 2.79  | 0.080       | 0.110 |

## SUGGESTED PAD LAYOUT



| Symbol | Unit (mm) | Unit (inch) |
|--------|-----------|-------------|
| A      | 10.8      | 0.425       |
| B      | 8.3       | 0.327       |
| C      | 1.1       | 0.043       |
| D      | 3.5       | 0.138       |
| E      | 16.9      | 0.665       |
| F      | 9.5       | 0.374       |
| G      | 2.5       | 0.098       |

## MARKING DIAGRAM



P/N = Marking Code  
 G = Green Compound  
 YWW = Date Code  
 F = Factory Code

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