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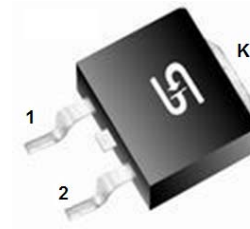
Address: A1208, Overseas Decoration Building, #122 Zhenhua RD., Futian, Shenzhen, China



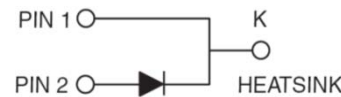
## 16A, 35V - 150V Surface Mount Schottky Barrier Rectifiers

### 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



**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

Part no. with suffix "H" means AEC-Q101 qualified

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

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

Meet JESD 201 class 2 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         | MBRS | MBRS         | MBRS | MBRS         | MBRS  | MBRS         | UNIT |
|   |                    | 1635         | 1645 | 1650         | 1660 | 1690         | 16100 | 16150        |      |
| Maximum repetitive peak reverse voltage   | V <sub>RRM</sub>   | 35           | 45   | 50           | 60   | 90           | 100   | 150          | V    |
| Maximum RMS voltage   | V <sub>RMS</sub>   | 24           | 31   | 35           | 42   | 63           | 70    | 105          | V    |
| Maximum DC blocking voltage   | V <sub>DC</sub>    | 35           | 45   | 50           | 60   | 90           | 100   | 150          | V    |
| Maximum average forward rectified current   | I <sub>F(AV)</sub> | 16           |      |              |      |              |       |              | A    |
| Peak repetitive forward current<br>(Rated V <sub>R</sub> , Square wave, 20KHz)  | I <sub>FRM</sub>   | 32           |      |              |      |              |       |              | A    |
| Peak forward surge current, 8.3 ms single half sine-wave 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> =16A, T <sub>J</sub> =25°C<br>I <sub>F</sub> =16A, T <sub>J</sub> =125°C | V <sub>F</sub>     | 0.63<br>0.57 |      | 0.75<br>0.65 |      | 0.85<br>0.82 |       | 0.95<br>0.92 | V    |
| Maximum reverse current @ rated V <sub>R</sub><br>T <sub>J</sub> =25°C<br>T <sub>J</sub> =125°C   | I <sub>R</sub>     | 0.5          |      |              | 0.3  |              | 0.1   | mA           |      |
|   |                    | 15           |      | 10           |      | 7.5          | 5     |              |      |
| Typical thermal resistance  | R <sub>θJC</sub>   | 1.5          |      |              |      |              |       |              | °C/W |
| Operating junction temperature range  | T <sub>J</sub>     | - 55 to +150 |      |              |      |              |       |              | °C   |
| Storage temperature range   | T <sub>STG</sub>   | - 55 to +175 |      |              |      |              |       |              | °C   |

Note 1: 2.0µs Pulse Width, f=1.0KHz

Note 2: Pulse Test : 300µs Pulse Width, 1% Duty Cycle



| ORDERING INFORMATION |                 |              |                         |                    |                        |
|----------------------|-----------------|--------------|-------------------------|--------------------|------------------------|
| PART NO.             | PART NO. SUFFIX | PACKING CODE | PACKING CODE SUFFIX (*) | PACKAGE            | PACKING                |
| MBRS16xx<br>(Note 1) | H               | RN           | G                       | D <sup>2</sup> PAK | 800 / 13" Paper reel   |
|                      |                 | MN           |                         |                    | 800 / 13" Plastic reel |

Note 1: "xx" defines voltage from 35V (MBRS1635) to 150V (MBRS16150)

\*: Optional available

| EXAMPLE       |          |                 |              |                     |                                      |
|---------------|----------|-----------------|--------------|---------------------|--------------------------------------|
| PREFERRED P/N | PART NO. | PART NO. SUFFIX | PACKING CODE | PACKING CODE SUFFIX | DESCRIPTION                          |
| MBRS1660HRNG  | MBRS1660 | H               | RN           | G                   | AEC-Q101 qualified<br>Green compound |

**RATINGS AND CHARACTERISTICS CURVES**

(T<sub>A</sub>=25°C unless otherwise noted)

FIG.1 FORWARD CURRENT DERATING CURVE

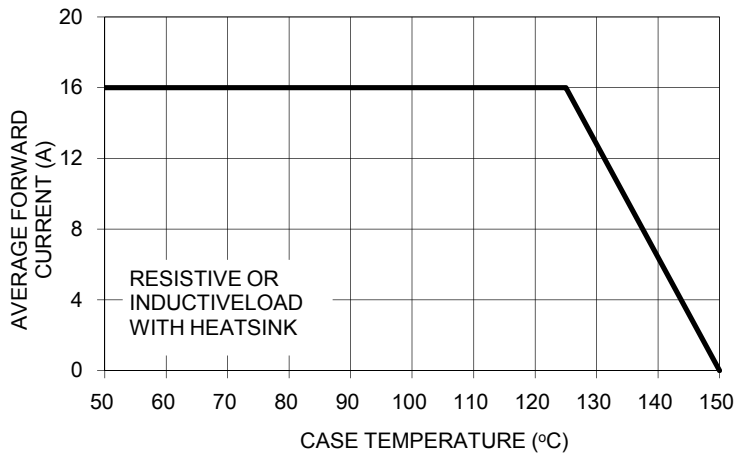


FIG. 2 MAXIMUM NON-REPETITIVE FORWARD SURGE CURRENT

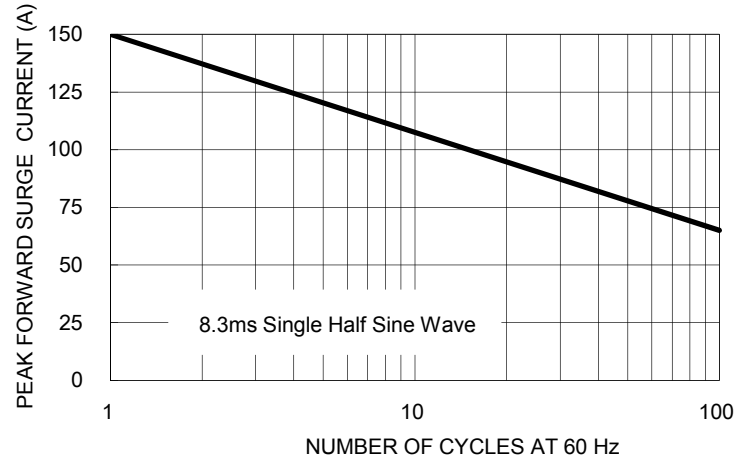


FIG. 3 TYPICAL FORWARD CHARACTERISTICS

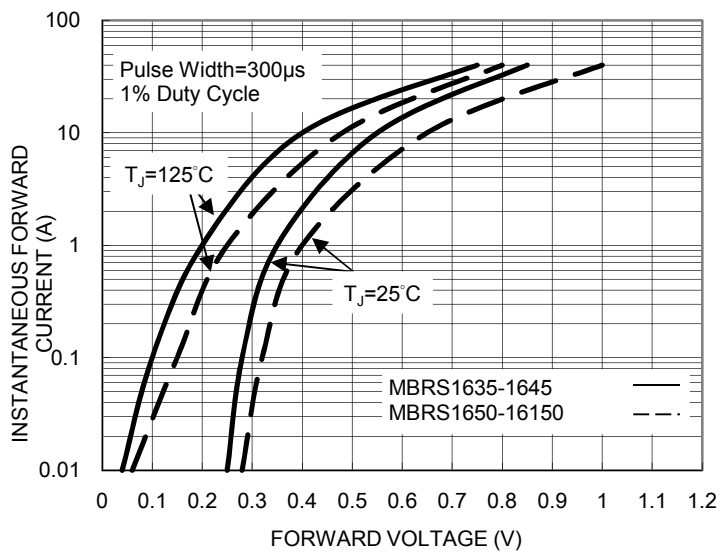


FIG. 4 TYPICAL REVERSE CHARACTERISTICS

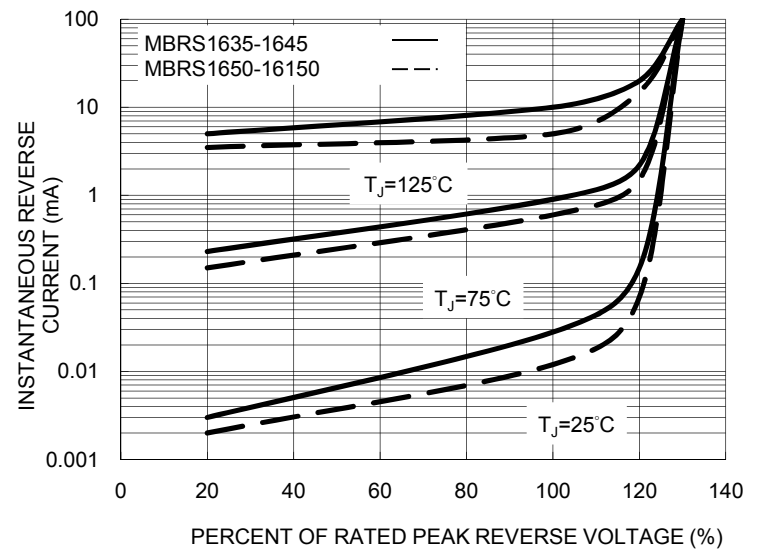


FIG. 5 TYPICAL JUNCTION CAPACITANCE

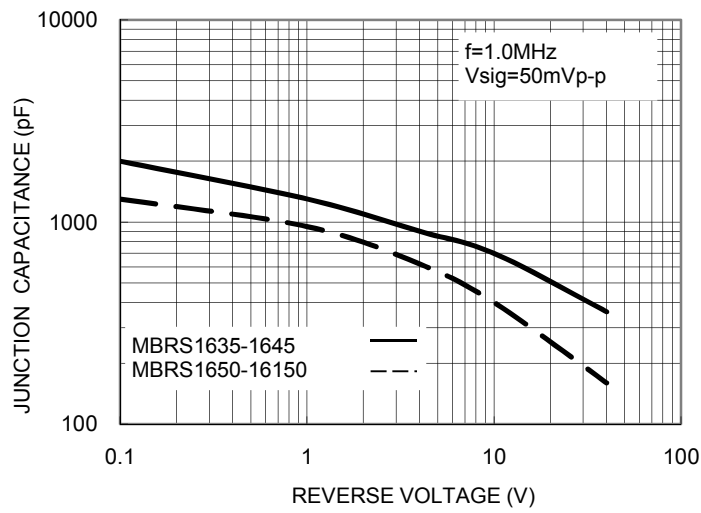
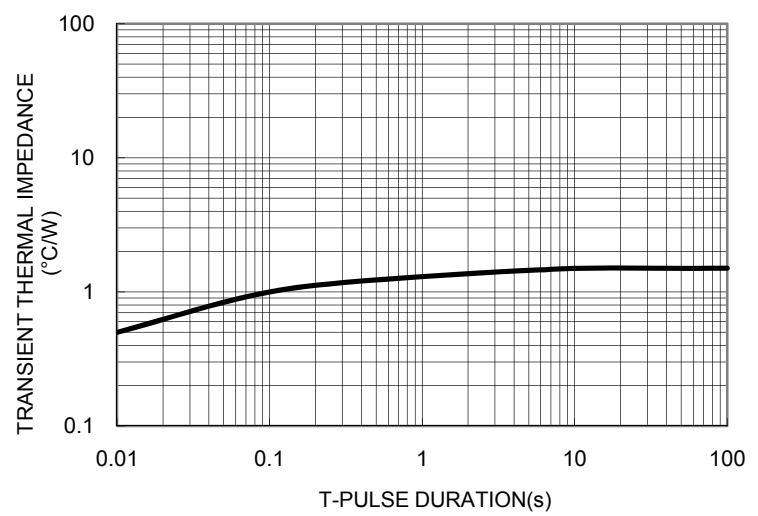
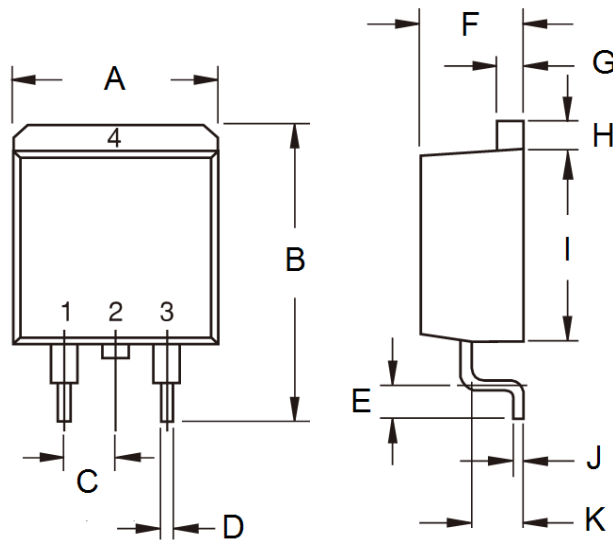


FIG. 6 TYPICAL TRANSIENT THERMAL IMPEDANCE

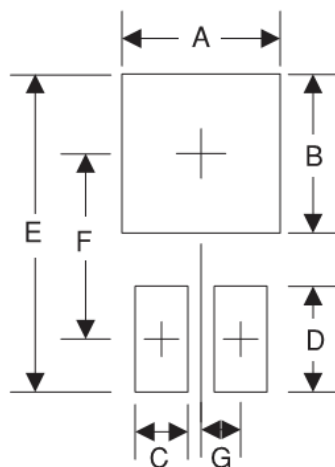


**PACKAGE OUTLINE DIMENSIONS**  
**TO-263AB (D<sup>2</sup>PAK)**



| 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 = Specific Device Code  
G = Green Compound  
YWW = Date Code  
F = Factory Code

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