

## 10A, 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<br>1035 | MBRS<br>1045 | MBRS<br>1050 | MBRS<br>1060 | MBRS<br>1090 | MBRS<br>10100 | MBRS<br>10150 | UNIT |
| 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> | 10           |              |              |              |              |               |               | A    |
| Peak forward surge current, 8.3 ms single half sine-wave superimposed on rated load                                                                                                                                                  | I <sub>FSM</sub>   | 120          |              |              |              |              |               |               | 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<br>I <sub>F</sub> =20A, T <sub>J</sub> =25°C<br>I <sub>F</sub> =20A, T <sub>J</sub> =125°C | V <sub>F</sub>     | -            |              | 0.80         |              | 0.85         |               | 1.05          | V    |
|                                                                                                                                                                                                                                      |                    | 0.57         |              | 0.70         |              | 0.71         |               | -             |      |
|                                                                                                                                                                                                                                      |                    | 0.84         |              | 0.95         |              | -            |               | -             |      |
|                                                                                                                                                                                                                                      |                    | 0.72         |              | 0.85         |              | -            |               | -             |      |
| Maximum reverse current @ rated V <sub>R</sub><br>T <sub>J</sub> =25°C<br>T <sub>J</sub> =100°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>   | 2            |              |              |              |              |               |               | °C/W |
|                                                                                                                                                                                                                                      | R <sub>θJA</sub>   | 60           |              |              |              |              |               |               |      |
| Operating junction temperature range                                                                                                                                                                                                 | T <sub>J</sub>     | - 55 to +175 |              |              |              |              |               |               | °C   |
| Storage temperature range                                                                                                                                                                                                            | T <sub>STG</sub>   | - 55 to +175 |              |              |              |              |               |               | °C   |

Note 1: 2.0us Pulse Width, f=1.0KHz

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

| ORDERING INFORMATION |                 |              |                         |                    |                        |
|----------------------|-----------------|--------------|-------------------------|--------------------|------------------------|
| PART NO.             | PART NO. SUFFIX | PACKING CODE | PACKING CODE SUFFIX (*) | PACKAGE            | PACKING                |
| MBRS10xx<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 (MBRS1035) to 150V (MBRS10150)

\*: Optional available

| EXAMPLE       |          |                 |              |                     |                                      |
|---------------|----------|-----------------|--------------|---------------------|--------------------------------------|
| PREFERRED P/N | PART NO. | PART NO. SUFFIX | PACKING CODE | PACKING CODE SUFFIX | DESCRIPTION                          |
| MBRS1060HRNG  | MBRS1060 | 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

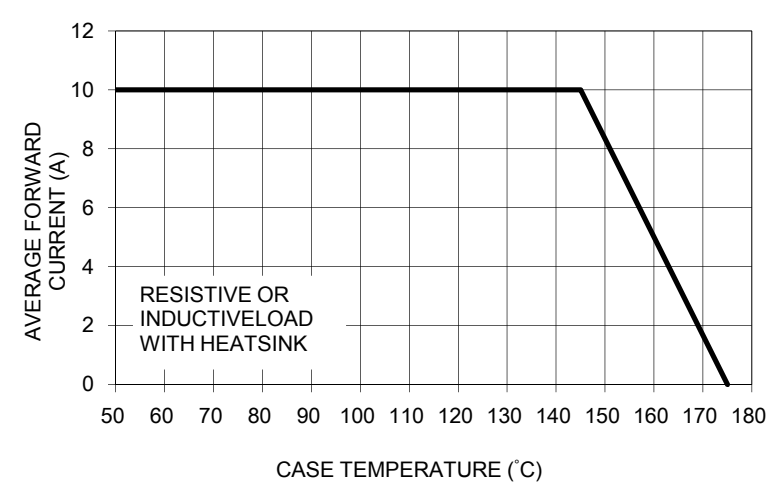


FIG. 2 MAXIMUM NON-REPETITIVE FORWARD SURGE CURRENT PER LEG

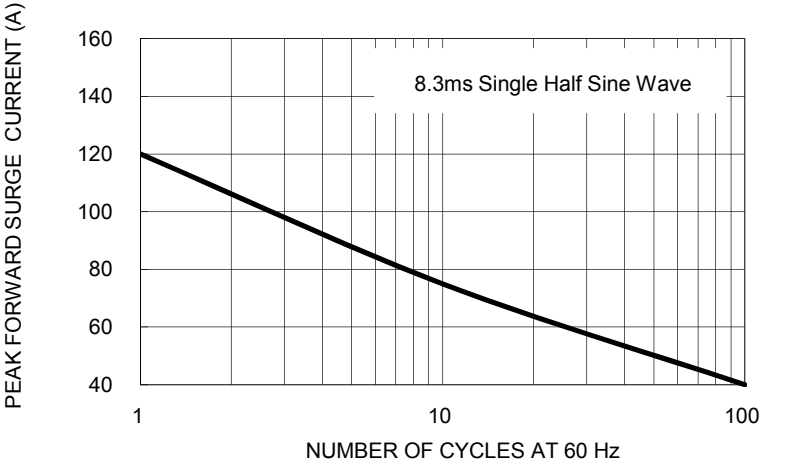


FIG. 3 TYPICAL FORWARD CHARACTERISTICS PER LEG

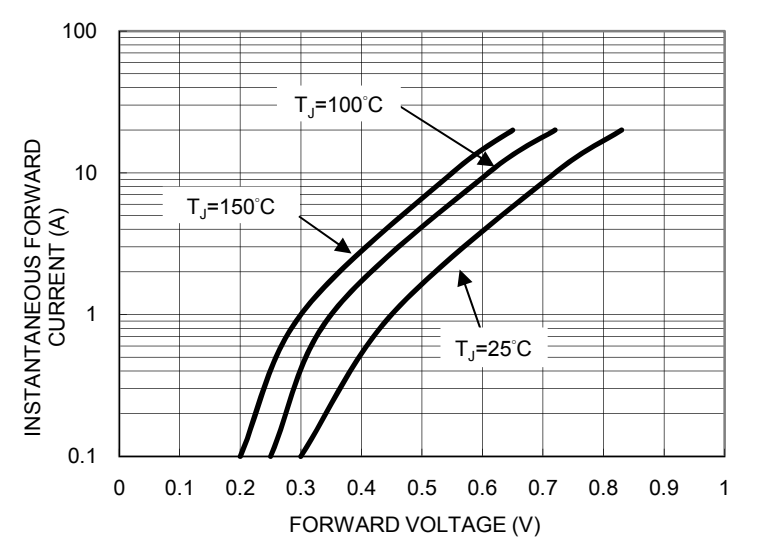


FIG. 4 TYPICAL REVERSE CHARACTERISTICS PER LEG

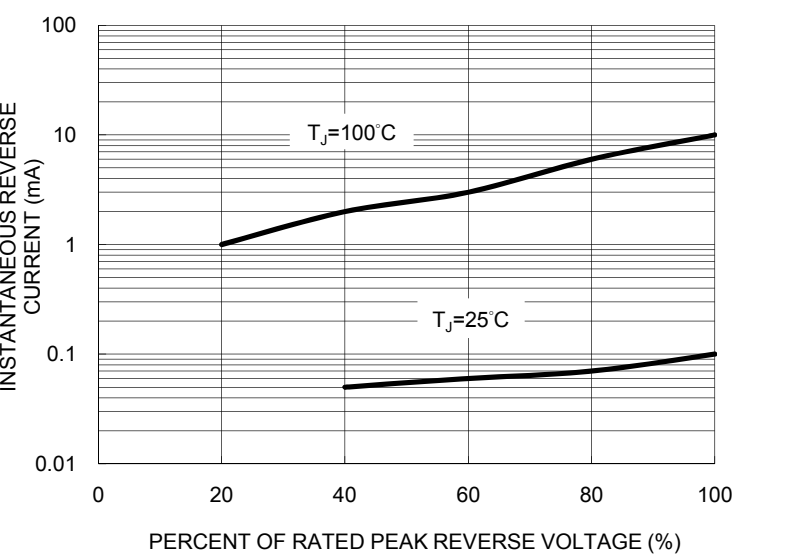


FIG. 5 TYPICAL JUNCTION CAPACITANCE

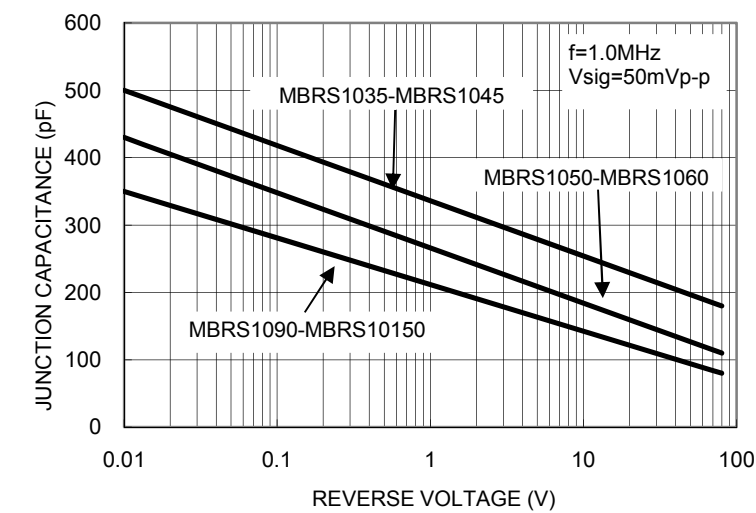
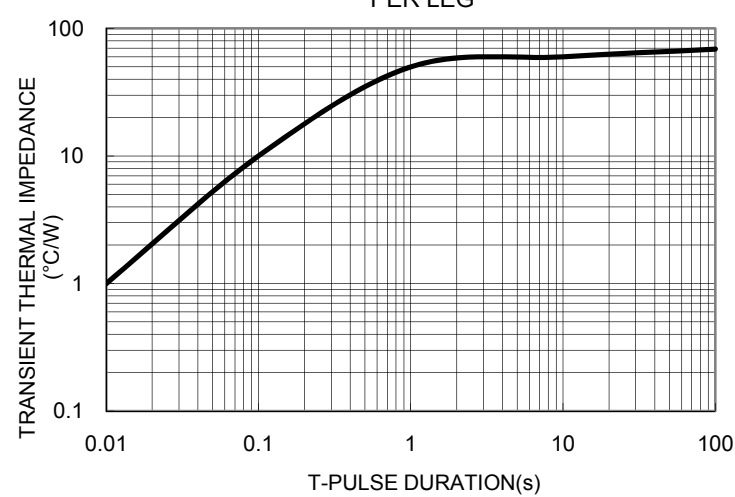
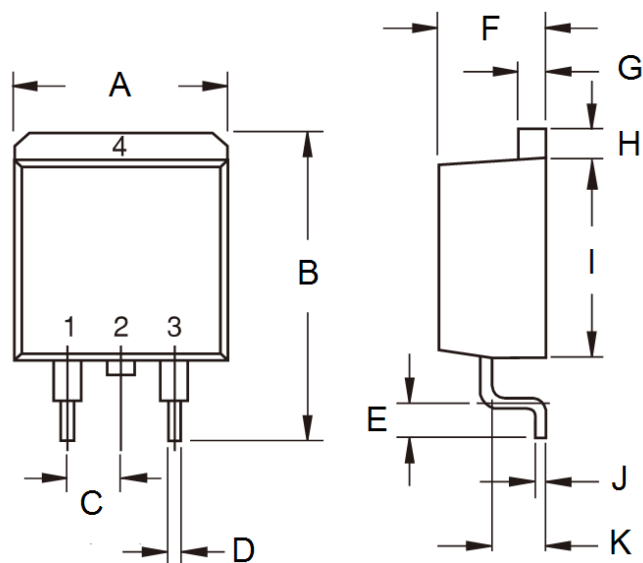


FIG. 6 TYPICAL TRANSIENT THERMAL IMPEDANCE PER LEG

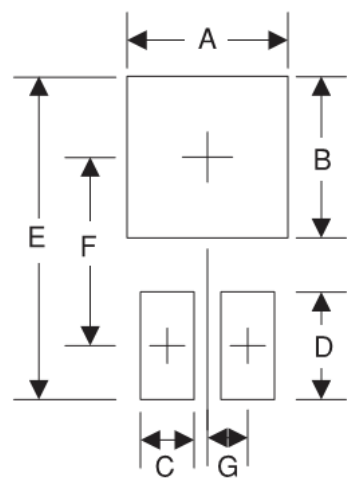


PACKAGE OUTLINE DIMENSIONS  
TO-263AB (D<sup>2</sup>PAK)



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

### Notice

Specifications of the products displayed herein are subject to change without notice. TSC or anyone on its behalf, assumes no responsibility or liability for any errors or inaccuracies.

Information contained herein is intended to provide a product description only. No license, express or implied, to any intellectual property rights is granted by this document. Except as provided in TSC's terms and conditions of sale for such products, TSC assumes no liability whatsoever, and disclaims any express or implied warranty, relating to sale and/or use of TSC products including liability or warranties relating to fitness for a particular purpose, merchantability, or infringement of any patent, copyright, or other intellectual property right.

The products shown herein are not designed for use in medical, life-saving, or life-sustaining applications. Customers using or selling these products for use in such applications do so at their own risk and agree to fully indemnify TSC for any damages resulting from such improper use or sale.



**Стандарт  
Электрон  
Связь**

Мы молодая и активно развивающаяся компания в области поставок электронных компонентов. Мы поставляем электронные компоненты отечественного и импортного производства напрямую от производителей и с крупнейших складов мира.

Благодаря сотрудничеству с мировыми поставщиками мы осуществляем комплексные и плановые поставки широчайшего спектра электронных компонентов.

Собственная эффективная логистика и склад в обеспечивает надежную поставку продукции в точно указанные сроки по всей России.

Мы осуществляем техническую поддержку нашим клиентам и предпродажную проверку качества продукции. На все поставляемые продукты мы предоставляем гарантию .

Осуществляем поставки продукции под контролем ВП МО РФ на предприятия военно-промышленного комплекса России , а также работаем в рамках 275 ФЗ с открытием отдельных счетов в уполномоченном банке. Система менеджмента качества компании соответствует требованиям ГОСТ ISO 9001.

Минимальные сроки поставки, гибкие цены, неограниченный ассортимент и индивидуальный подход к клиентам являются основой для выстраивания долгосрочного и эффективного сотрудничества с предприятиями радиоэлектронной промышленности, предприятиями ВПК и научно-исследовательскими институтами России.

С нами вы становитесь еще успешнее!

**Наши контакты:**

**Телефон:** +7 812 627 14 35

**Электронная почта:** [sales@st-electron.ru](mailto:sales@st-electron.ru)

**Адрес:** 198099, Санкт-Петербург,  
Промышленная ул, дом № 19, литера Н,  
помещение 100-Н Офис 331