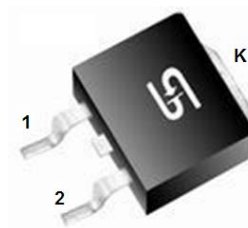


20A, 35V - 150V Dual Common Cathode Schottky Rectifiers

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


TO-263AB (D²PAK)

MECHANICAL DATA

Case: TO-263AB (D²PAK)

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

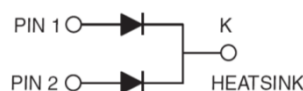
Packing code with suffix "G" means green compound (halogen-free)

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 _A =25°C unless otherwise noted) | | | | | | | | | | |
|--|--------------------|------------------------------|------------------------------|------------------------------|------------------------------|--------------|---------------|---------------|------|----|
| PARAMETER | SYMBOL | MBRS 2035 CT | MBRS 2045 CT | MBRS 2050 CT | MBRS 2060 CT | MBRS 2090 CT | MBRS 20100 CT | MBRS 20150 CT | UNIT | |
| Maximum repetitive peak reverse voltage | V _{RRM} | 35 | 45 | 50 | 60 | 90 | 100 | 150 | V | |
| Maximum RMS voltage | V _{RMS} | 24 | 31 | 35 | 42 | 63 | 70 | 105 | V | |
| Maximum DC blocking voltage | V _{DC} | 35 | 45 | 50 | 60 | 90 | 100 | 150 | V | |
| Maximum average forward rectified current | I _{F(AV)} | 20 | | | | | | | A | |
| Peak repetitive forward current (Rated V _R , Square wave, 20KHz) | I _{FRM} | 20 | | | | | | | A | |
| Peak forward surge current, 8.3 ms single half sine-wave superimposed on rated load | I _{FSM} | 150 | | | | | | | A | |
| Peak repetitive reverse surge current (Note 1) | I _{RRM} | 1 | 0.5 | | | | | A | | |
| Maximum instantaneous forward voltage (Note 2) I _F =10A, T _J =25°C I _F =10A, T _J =125°C I _F =20A, T _J =25°C I _F =20A, T _J =125°C | V _F | 0.65 0.57 0.84 0.72 | 0.80 0.70 0.95 0.85 | 0.85 0.75 0.95 0.85 | 0.99 0.87 1.23 1.10 | | | | V | |
| Maximum reverse current @ rated V _R T _J =25°C T _J =125°C | I _R | 0.1 | | | 5 | | | 15 | 10 | mA |
| Voltage rate of change (Rated V _R) | dV/dt | 10000 | | | | | | | V/μs | |
| Typical thermal resistance | R _{θJC} | 1.5 | | | | 2 | | | °C/W | |
| Operating junction temperature range | T _J | - 55 to +150 | | | | | | | °C | |
| Storage temperature range | T _{STG} | - 55 to +150 | | | | | | | °C | |

Note 1: tp = 2.0 μs, 1.0KHz

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

| ORDERING INFORMATION | | | | | |
|----------------------|-----------------|--------------|-------------------------|--------------------|------------------------|
| PART NO. | PART NO. SUFFIX | PACKING CODE | PACKING CODE SUFFIX (*) | PACKAGE | PACKING |
| MBRS20xxCT (Note 1) | H | RN | G | D ² PAK | 800 / 13" Paper reel |
| | | MN | | | 800 / 13" Plastic reel |

Note 1: "xx" defines voltage from 35V (MBRS2035CT) to 150V (MBRS20150CT)

*: Optional available

| EXAMPLE | | | | | |
|----------------|------------|-----------------|--------------|---------------------|-----------------------------------|
| PREFERRED P/N | PART NO. | PART NO. SUFFIX | PACKING CODE | PACKING CODE SUFFIX | DESCRIPTION |
| MBRS2060CTHRNG | MBRS2060CT | H | RN | G | AEC-Q101 qualified Green compound |

RATINGS AND CHARACTERISTICS CURVES

(T_A=25°C unless otherwise noted)

FIG.1 FORWARD CURRENT DERATING CURVE

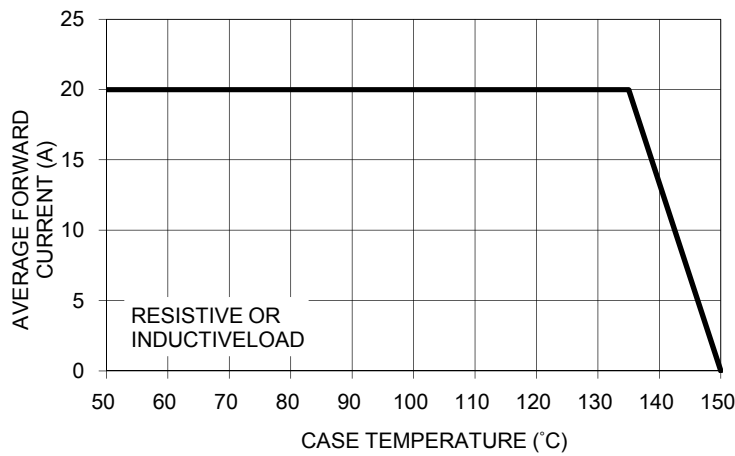


FIG. 2 MAXIMUM NON-REPETITIVE FORWARD SURGE CURRENT PER LEG

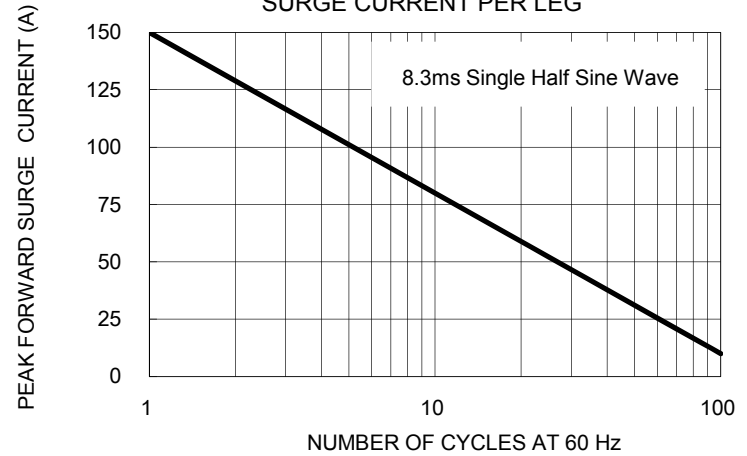


FIG. 3 TYPICAL FORWARD CHARACTERISTICS PER LEG

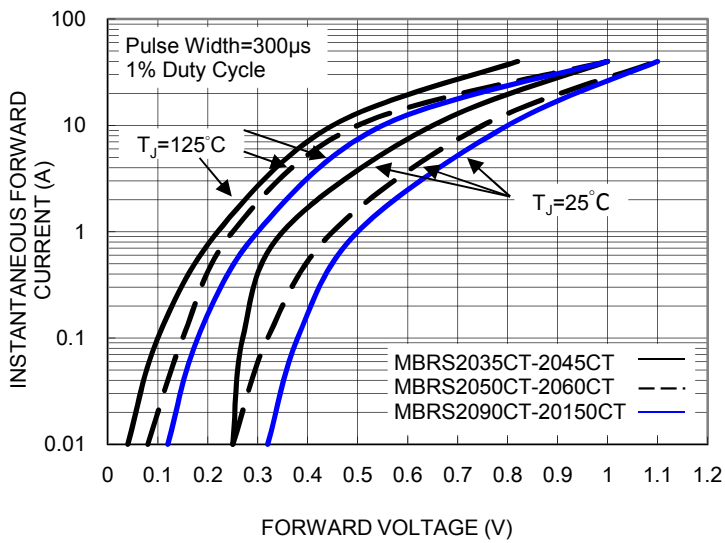


FIG. 4 TYPICAL REVERSE CHARACTERISTICS PER LEG

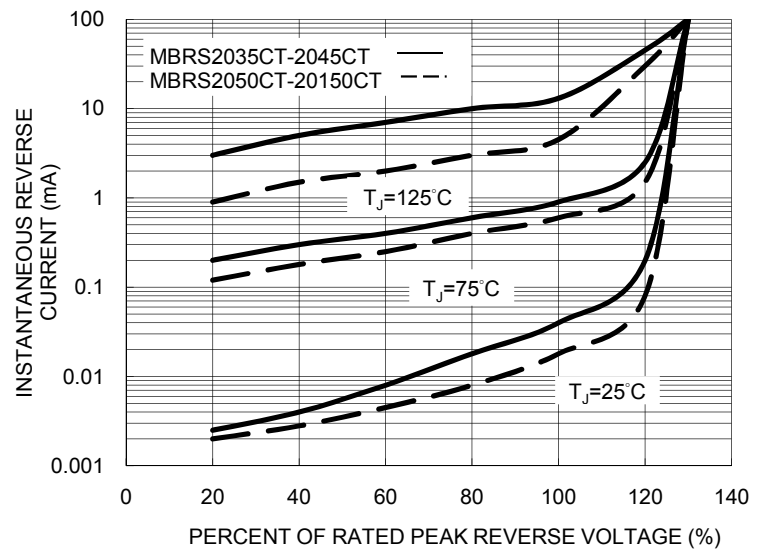


FIG. 5 TYPICAL JUNCTION CAPACITANCE PER LEG

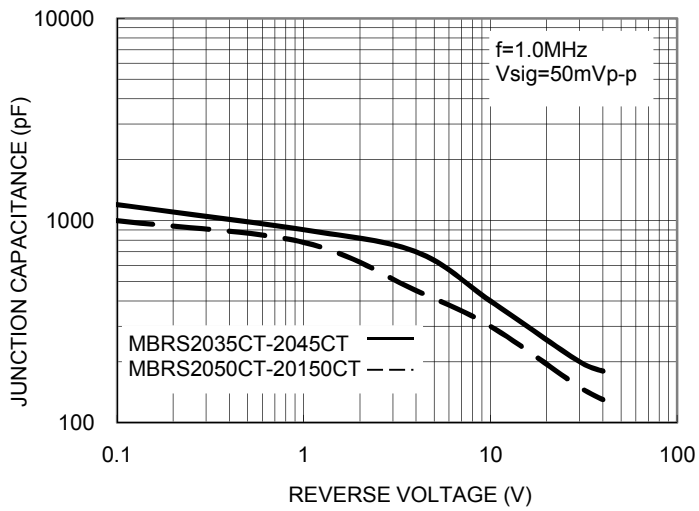
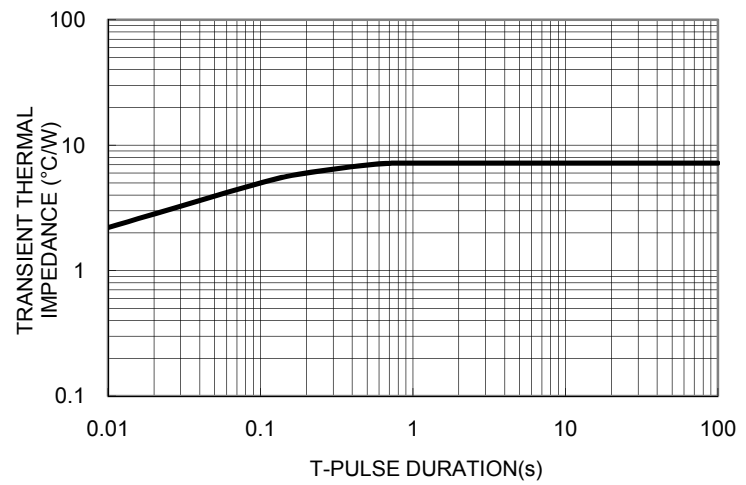
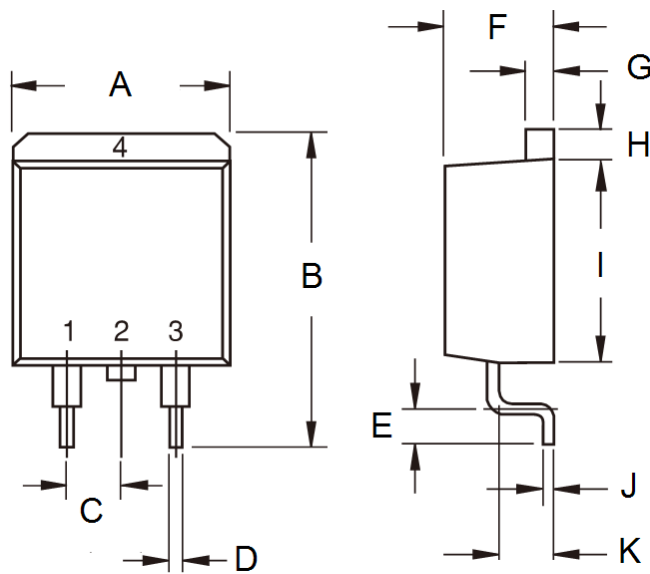


FIG. 6 TYPICAL TRANSIENT THERMAL IMPEDANCE PER LEG



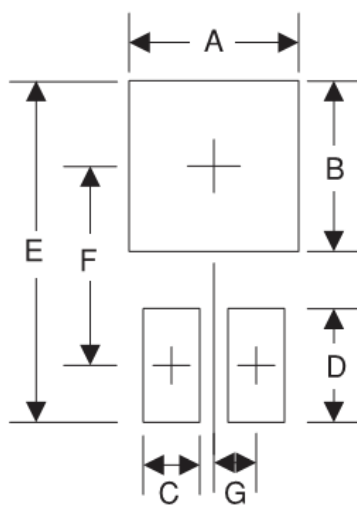
PACKAGE OUTLINE DIMENSIONS

TO-263AB (D²PAK)



| 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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