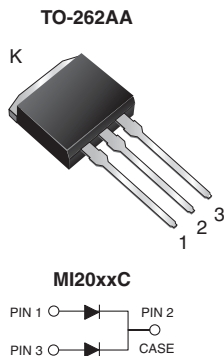


## Dual Common-Cathode Schottky Rectifier



### FEATURES

- Guardring for overvoltage protection
- Lower power losses, high efficiency
- Low forward voltage drop
- High forward surge capability
- High frequency operation
- Solder dip 275 °C max. 10 s, per JESD 22-B106
- Material categorization: For definitions of compliance please see [www.vishay.com/doc?99912](http://www.vishay.com/doc?99912)


**RoHS**  
COMPLIANT

### TYPICAL APPLICATIONS

For use in low voltage, high frequency rectifier of switching mode power supplies, freewheeling diodes, OR-ing diodes, DC/DC converters or polarity protection application.

### MECHANICAL DATA

**Case:** TO-220AB

Molding compound meets UL 94V-0 flammability rating  
Base P/N-E3 - RoHS-compliant, commercial grade

**Terminals:** Matte tin plated leads, solderable per J-STD-002 and JESD 22-B102

E3 suffix meets JESD 201 class 1A whisker test

**Polarity:** As marked

**Mounting Torque:** 10 in-lbs maximum

### PRIMARY CHARACTERISTICS

|                       |            |
|-----------------------|------------|
| $I_{F(AV)}$           | 2 x 10 A   |
| $V_{RRM}$             | 50 V, 60 V |
| $I_{FSM}$             | 150 A      |
| $V_F$ at $I_F = 10$ A | 0.570 V    |
| $T_J$ max.            | 150 °C     |

### MAXIMUM RATINGS ( $T_A = 25$ °C unless otherwise noted)

| PARAMETER  | SYMBOL      | MI2050C      | MI2060C | UNIT       |
|--|-------------|--------------|---------|------------|
| Maximum repetitive peak reverse voltage  | $V_{RRM}$   | 50           | 60      | V          |
| Maximum average forward rectified current (Fig.1)  | $I_{F(AV)}$ | 20           |         | A          |
|  |             | 10           |         |            |
| Peak forward surge current 8.3 ms single half sine-wave superimposed on rated load per diode | $I_{FSM}$   | 150          |         | A          |
| Peak repetitive reverse current per leg at $t_p = 2 \mu s$ , 1 kHz per diode                 | $I_{RRM}$   | 0.5          |         | A          |
| Voltage rate of change (rated $V_R$ )  | $dV/dt$     | 10 000       |         | V/ $\mu s$ |
| Operating junction temperature range   | $T_J$       | - 65 to +150 |         | °C         |
| Storage temperature range  | $T_{STG}$   | - 65 to +175 |         | °C         |

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

| PARAMETER                                       | SYMBOL      | TEST CONDITIONS   | TYP.                                | MAX. | UNIT          |
|---|-------------|---|-------------------------------------|------|---------------|
| Maximum instantaneous forward voltage per diode | $V_F^{(1)}$ | $I_F = 5\text{ A}$ $T_J = 25\text{ }^{\circ}\text{C}$   | 0.554                               | -    | V             |
|   |             | $I_F = 10\text{ A}$ $T_J = 125\text{ }^{\circ}\text{C}$ | 0.649                               | 0.74 |               |
|   |             | $I_F = 5\text{ A}$ $T_J = 25\text{ }^{\circ}\text{C}$   | 0.484                               | -    |               |
|   |             | $I_F = 10\text{ A}$ $T_J = 125\text{ }^{\circ}\text{C}$ | 0.570                               | 0.62 |               |
| Reverse current per diode                       | $I_R^{(2)}$ | rated $V_R$   | $T_J = 25\text{ }^{\circ}\text{C}$  | 15   | $\mu\text{A}$ |
|   |             |   | $T_J = 100\text{ }^{\circ}\text{C}$ | 10.8 | mA            |
| Typical junction capacitance                    | $C_J$       | 4.0 V, 1 MHz  | 300                                 | -    | pF            |

**Notes**(1) Pulse test: 300  $\mu\text{s}$  pulse width, 1 % duty cycle(2) Pulse test: Pulse width  $\leq 40\text{ ms}$ **THERMAL CHARACTERISTICS** ( $T_A = 25\text{ }^{\circ}\text{C}$  unless otherwise noted)

| PARAMETER                            | SYMBOL          | MI2050C | MI2060C | UNIT                 |
|--------------------------------------|-----------------|---------|---------|----------------------|
| Typical thermal resistance per diode | $R_{\theta JC}$ | 2.0     |         | $^{\circ}\text{C/W}$ |

**ORDERING INFORMATION** (Example)

| PACKAGE  | PREFERRED P/N | UNIT WEIGHT (g) | PACKAGE CODE | BASE QUANTITY | DELIVERY MODE |
|----------|---------------|-----------------|--------------|---------------|---------------|
| TO-262AA | MI2060C-E3/4W | 1.456           | 4W           | 50/tube       | Tube          |

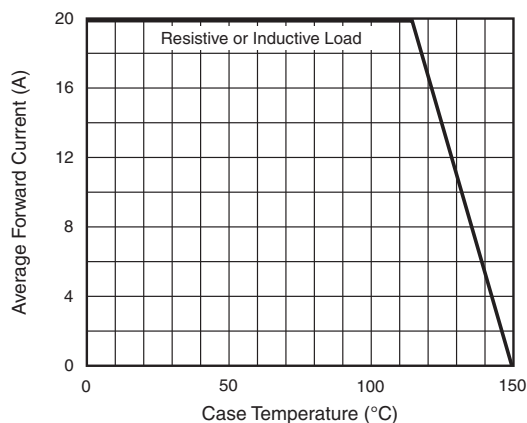
**RATINGS AND CHARACTERISTICS CURVES** ( $T_A = 25\text{ }^{\circ}\text{C}$  unless otherwise noted)

Fig. 1 - Forward Current Derating Curve

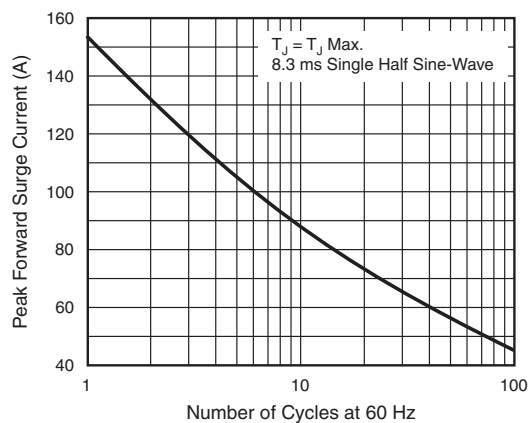


Fig. 2 - Maximum Non-Repetitive Peak Forward Surge pCurrent Per Diode

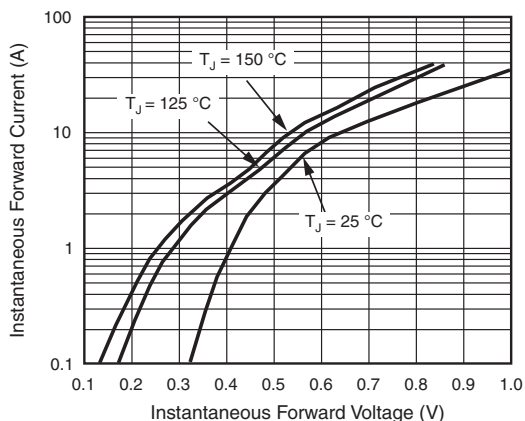


Fig. 3 - Typical Instantaneous Forward Characteristics Per Diode

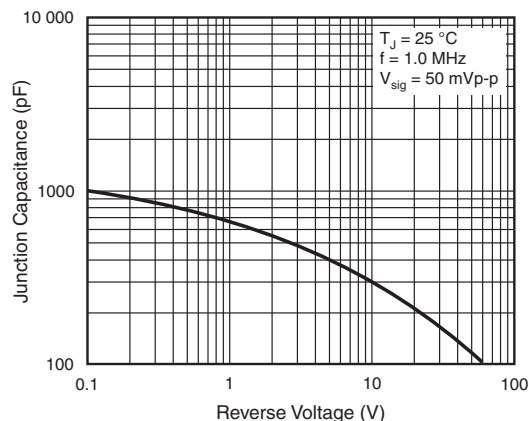


Fig. 5 - Typical Junction Capacitance Per Diode

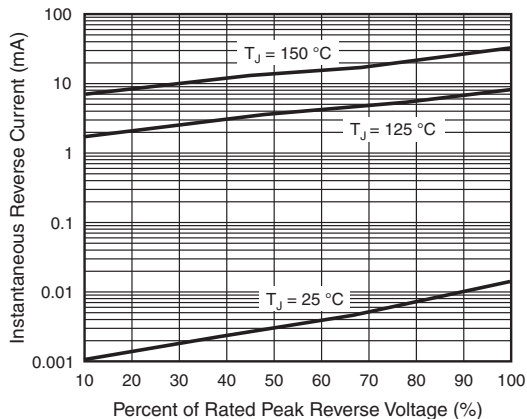


Fig. 4 - Typical Reverse Characteristics Per Diode

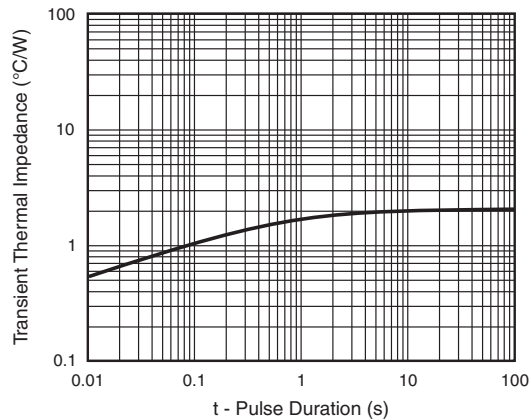
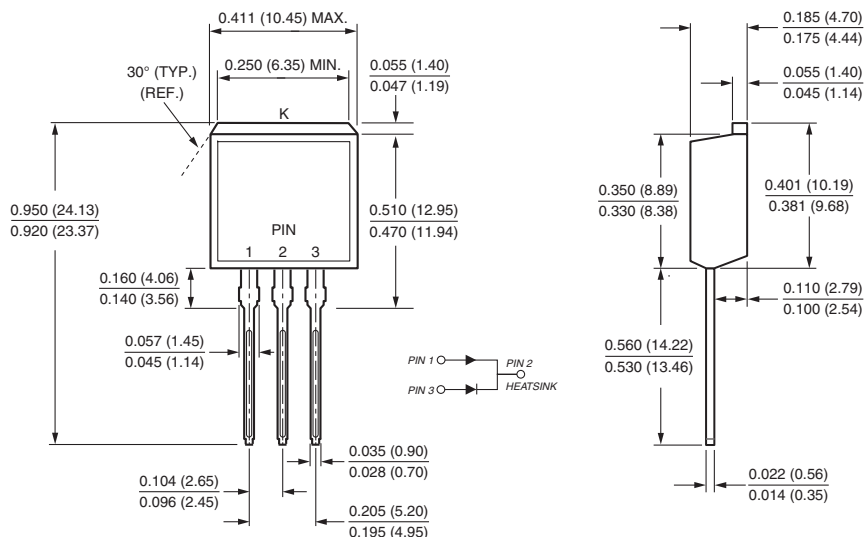


Fig. 6 - Typical Transient Thermal Impedance Per Diode

**PACKAGE OUTLINE DIMENSIONS** in inches (millimeters)

**TO-262AA**




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