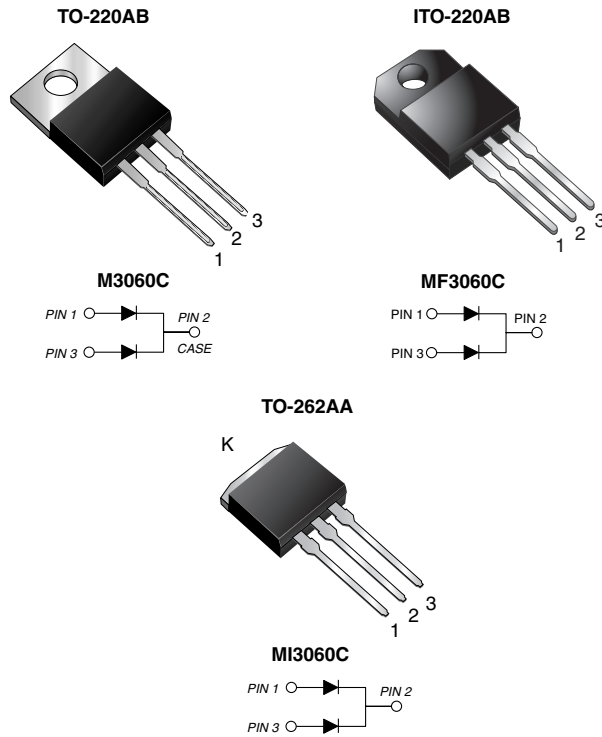


Dual Common-Cathode Schottky Rectifier



FEATURES

- Guardring for overvoltage protection
- Lower power losses, high efficiency
- Low forward voltage drop
- High forward surge capability
- High frequency operation
- Solder dip 260 °C, 40 s (for TO-220AB, ITO-220AB and TO-262AA package)
- Component in accordance to RoHS 2002/95/EC and WEEE 2002/96/EC



RoHS COMPLIANT

TYPICAL APPLICATIONS

For use in low voltage, high frequency rectifier of switching mode power supplies, freewheeling diodes, dc-to-dc converters or polarity protection application.

MECHANICAL DATA

Case: TO-220AB, ITO-220AB, TO-262AA

Epoxy meets UL 94V-0 flammability rating

Terminals: Matte tin plated leads, solderable per J-STD-002 and JESD22-B102

E3 suffix for consumer grade, meets JESD 201 class 1A whisker test

Polarity: As marked

Mounting Torque: 10 in-lbs maximum

| PRIMARY CHARACTERISTICS | |
|-------------------------|----------|
| $I_{F(AV)}$ | 15 A x 2 |
| V_{RRM} | 60 V |
| I_{FSM} | 160 A |
| V_F at $I_F = 15$ A | 0.547 V |
| T_J max. | 150 °C |

| MAXIMUM RATINGS ($T_A = 25$ °C unless otherwise noted) | | | | | |
|--|----------------|--------|---------------|---------|------------|
| PARAMETER | SYMBOL | M3060C | MF3060C | MI3060C | UNIT |
| Maximum repetitive peak reverse voltage | V_{RRM} | | 60 | | V |
| Maximum average forward rectified current | $I_{F(AV)}$ | | 30 | 15 | A |
| Peak forward surge current 8.3 ms single half sine-wave superimposed on rated load per diode | I_{FSM} | | 160 | | A |
| Peak repetitive reverse current per diode at $t_p = 2$ μ s, 1 kHz | I_{RRM} | | 0.5 | | A |
| Voltage rate of change (rated V_R) | dV/dt | | 10 000 | | V/ μ s |
| Operating junction and storage temperature range | T_J, T_{STG} | | - 65 to + 150 | | °C |
| Isolation voltage from terminal to heatsink with $t = 1$ min | V_{AC} | | 1500 | | V |



| ELECTRICAL CHARACTERISTICS (T _A = 25 °C unless otherwise noted) | | | | | | |
|--|---|---|----------------|-------------------------|----------------|----------|
| PARAMETER | TEST CONDITIONS | | SYMBOL | TYP. | MAX. | UNIT |
| Instantaneous forward voltage per diode ⁽¹⁾ | I _F = 5.0 A I _F = 7.5 A I _F = 15 A | T _J = 25 °C | V _F | 0.482 0.520 0.614 | - - 0.72 | V |
| | I _F = 5.0 A I _F = 7.5 A I _F = 15 A | T _J = 125 °C | | 0.387 0.443 0.547 | - - 0.62 | |
| Reverse current per diode ⁽²⁾ | rated V _R | T _J = 25 °C T _J = 125 °C | I _R | 50 23 | 350 45 | μA mA |
| Typical junction capacitance per diode | 4.0 V, 1 MHz | T _J = 25 °C | C _J | 540 | - | pF |

Notes:

- (1) Pulse test: 300 μs pulse width, 1 % duty cycle
- (2) Pulse test: Pulse width ≤ 40 ms

| THERMAL CHARACTERISTICS (T _C = 25 °C unless otherwise noted) | | | | | |
|---|------------------|--------|---------|---------|------|
| PARAMETER | SYMBOL | M3060C | MF3060C | MI3060C | UNIT |
| Thermal resistance per diode | R _{θJC} | 2.0 | 5.5 | 2.0 | °C/W |

| ORDERING INFORMATION (Example) | | | | | |
|--------------------------------|---------------|-----------------|--------------|---------------|---------------|
| PACKAGE | PREFERRED P/N | UNIT WEIGHT (g) | PACKAGE CODE | BASE QUANTITY | DELIVERY MODE |
| TO-220AB | M3060C-E3/4W | 1.85 | 4W | 50/tube | Tube |
| ITO-220AB | MF3060C-E3/4W | 1.75 | 4W | 50/tube | Tube |
| TO-262AA | MI3060C-E3/4W | 1.46 | 4W | 50/tube | Tube |

RATINGS AND CHARACTERISTICS CURVES

(T_A = 25 °C unless otherwise noted)

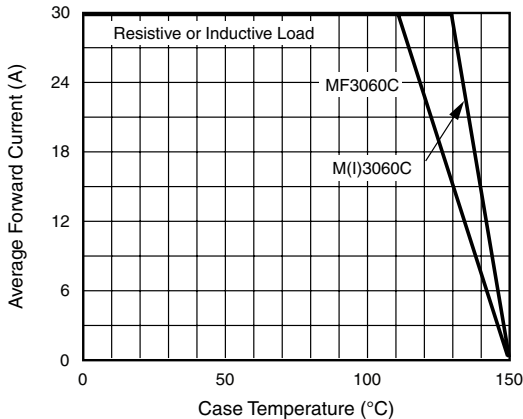


Figure 1. Forward Current Derating Curve

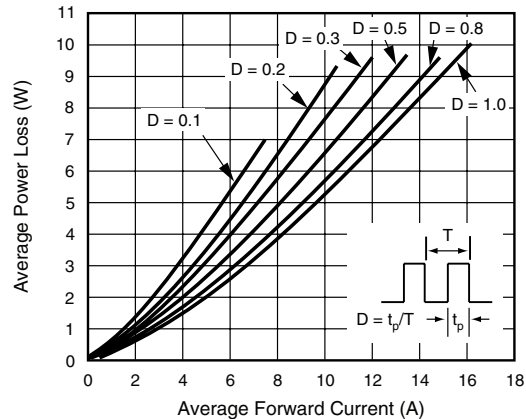


Figure 2. Forward Power Loss Characteristics Per Diode

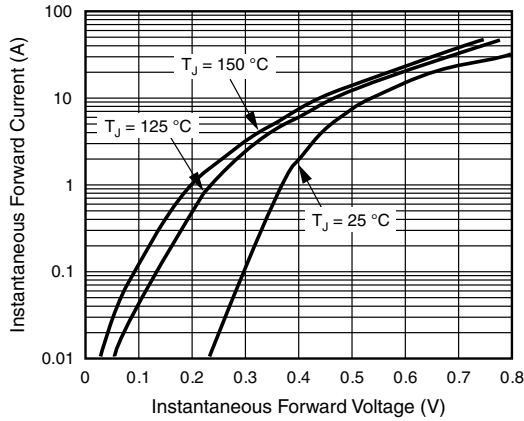


Figure 3. Typical Instantaneous Forward Characteristics Per Diode

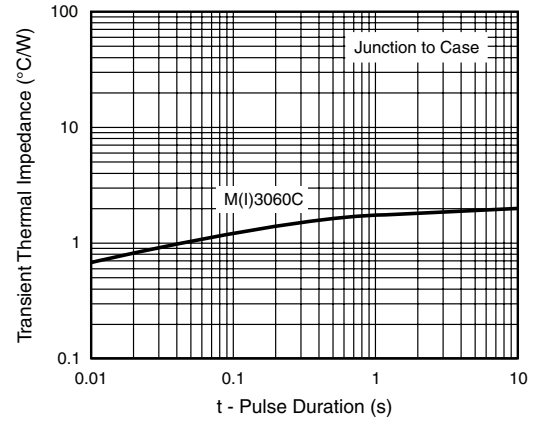


Figure 6. Typical Transient Thermal Impedance Per Diode

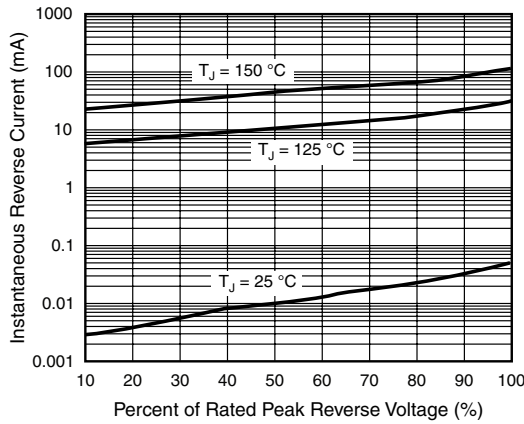


Figure 4. Typical Reverse Characteristics Per Diode

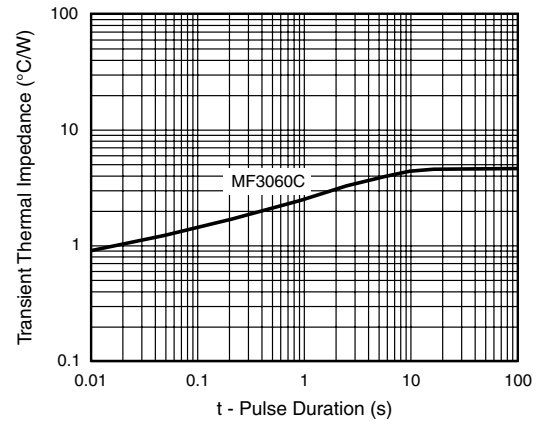


Figure 7. Typical Transient Thermal Impedance Per Diode

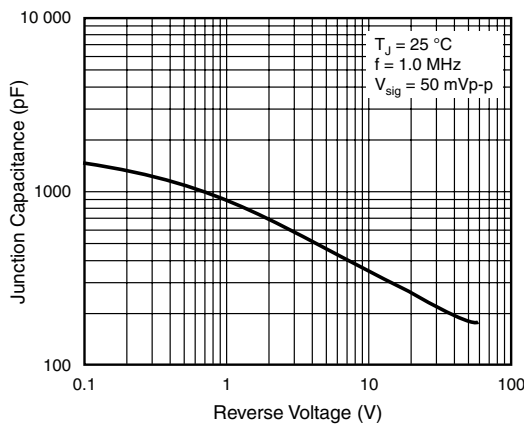
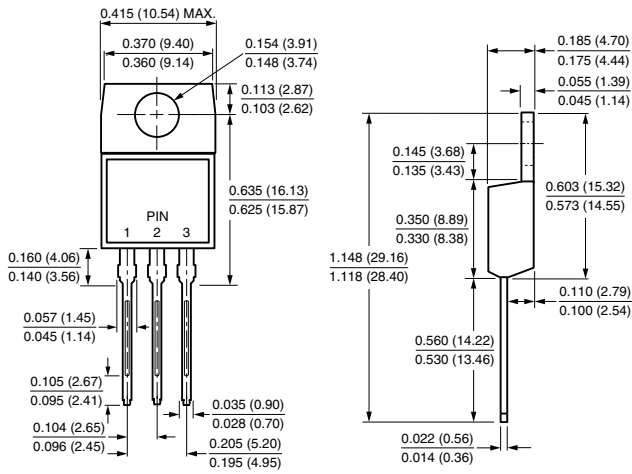


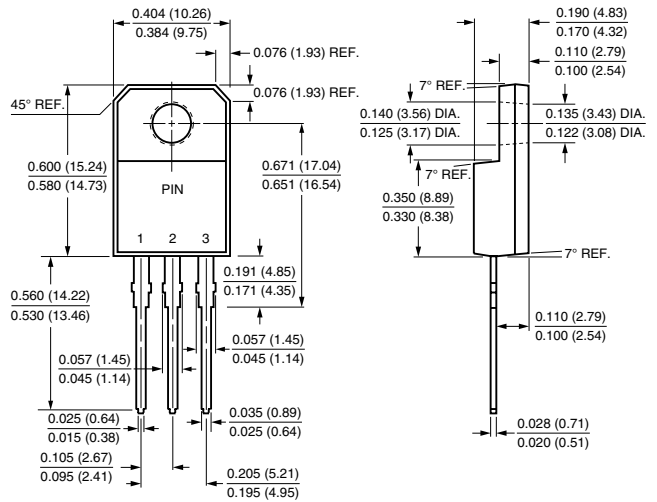
Figure 5. Typical Junction Capacitance Per Diode

PACKAGE OUTLINE DIMENSIONS in inches (millimeters)

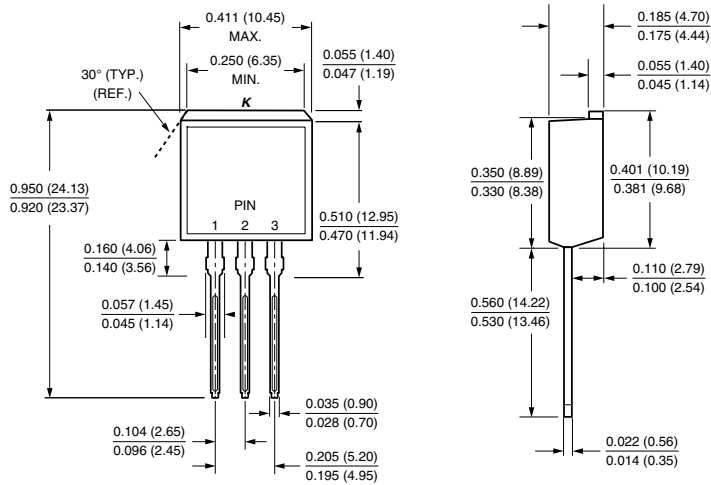
TO-220AB



ITO-220AB



TO-262AA





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