

## Sidac High Voltage Bilateral Triggers

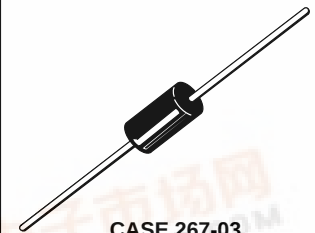
... designed for direct interface with the ac power line. Upon reaching the breakover voltage in each direction, the device switches from a blocking state to a low voltage on-state. Conduction will continue like an SCR until the main terminal current drops below the holding current. The plastic axial lead package provides high pulse current capability at low cost. Glass passivation insures reliable operation. Applications are:

- High Pressure Sodium Vapor Lighting
- Strobes and Flashers
- Ignitors
- High Voltage Regulators
- Pulse Generators

**MKP3V110\***  
**MKP3V120\***  
**MKP3V130\***

\*Motorola preferred devices

**SIDACs**  
**1 AMPERE RMS**  
**100 thru 135 VOLTS**



**CASE 267-03**  
**SURMETIC 50**  
**PLASTIC AXIAL**

### MAXIMUM RATINGS ( $T_J = 25^\circ\text{C}$ unless otherwise noted)

| Rating                                                                             | Symbol     | Min   | Max      | Unit             |
|------------------------------------------------------------------------------------|------------|-------|----------|------------------|
| Repetitive Breakover Voltage                                                       | $V_{(BO)}$ |       |          | Volts            |
| MKP3V110                                                                           |            | 100   | 120      |                  |
| MKP3V120                                                                           |            | 110   | 130      |                  |
| MKP3V130                                                                           |            | 120   | 140      |                  |
| Off-State Repetitive Voltage                                                       | $V_{DRM}$  | —     | $\pm 90$ | Volts            |
| On-State RMS Current                                                               | $I_T(RMS)$ | —     | 1        | Amp              |
| On-State Surge Current (Non-repetitive)<br>(60 Hz One Cycle Sine Wave, Peak Value) | $I_{TSM}$  | —     | 20       | Amps             |
| Operating Junction Temperature Range                                               | $T_J$      | $-40$ | $+125$   | $^\circ\text{C}$ |
| Storage Temperature Range                                                          | $T_{stg}$  | $-40$ | $+150$   | $^\circ\text{C}$ |
| Lead Solder Temperature<br>(Lead Length $\geq 1/16"$ from Case, 10 s Max)          | —          | —     | $+230$   | $^\circ\text{C}$ |

### THERMAL CHARACTERISTICS

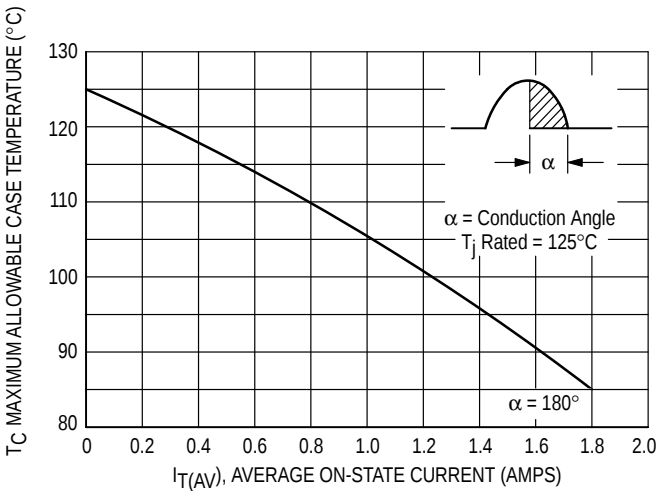
| Characteristic                                                  | Symbol          | Min | Max | Unit               |
|-----------------------------------------------------------------|-----------------|-----|-----|--------------------|
| Thermal Resistance, Junction to Lead<br>(Lead Length = $3/8"$ ) | $R_{\theta JL}$ | —   | 15  | $^\circ\text{C/W}$ |

**MKP3V110 MKP3V120 MKP3V130**

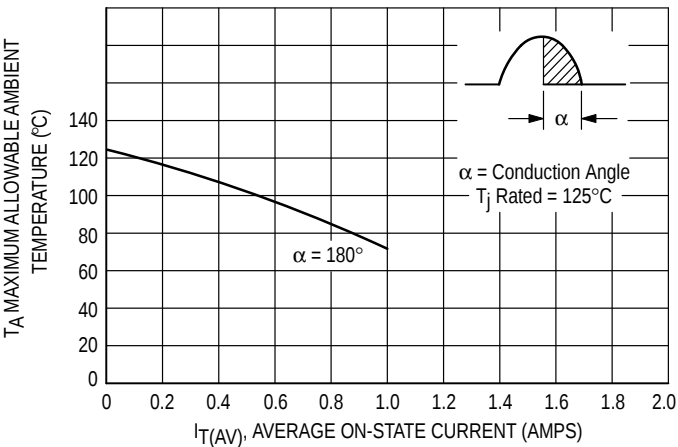
**ELECTRICAL CHARACTERISTICS** ( $T_C = 25^\circ\text{C}$  unless otherwise noted; both directions)

| Characteristic                                                               | Symbol           | Min | Typ | Max | Unit                   |
|------------------------------------------------------------------------------|------------------|-----|-----|-----|------------------------|
| Breakover Current                                                            | $I_{(BO)}$       | —   | —   | 200 | $\mu\text{A}$          |
| Repetitive Peak Off-State Current<br>(60 Hz Sine Wave, $V_D = 90\text{ V}$ ) | $I_{\text{DRM}}$ | —   | —   | 10  | $\mu\text{A}$          |
| Forward "On" Voltage<br>( $I_{\text{TM}} = 1\text{ A Peak}$ )                | $V_{\text{TM}}$  | —   | 1.1 | 1.5 | Volts                  |
| Dynamic Holding Current                                                      | $I_{\text{H}}$   | —   | —   | 100 | mA                     |
| Switching Resistance                                                         | $R_{\text{S}}$   | 0.1 | —   | —   | $\text{k}\Omega$       |
| Maximum Rate of Change of On-State Current                                   | $di/dt$          | —   | 50  | —   | $\text{A}/\mu\text{s}$ |

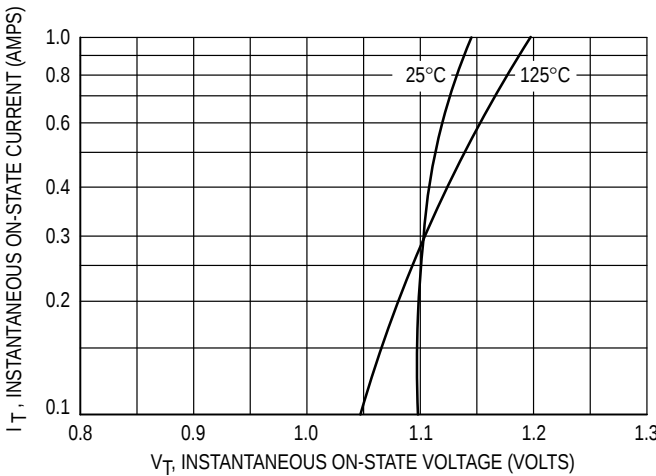
**CURRENT DERATING**



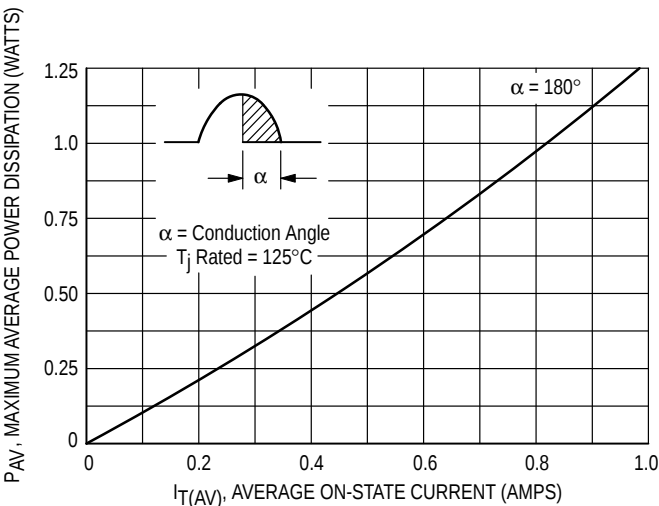
**Figure 1. Maximum Case Temperature**



**Figure 2. Maximum Ambient Temperature**



**Figure 3. Typical Forward Voltage**



**Figure 4. Power Dissipation**

## THERMAL CHARACTERISTICS

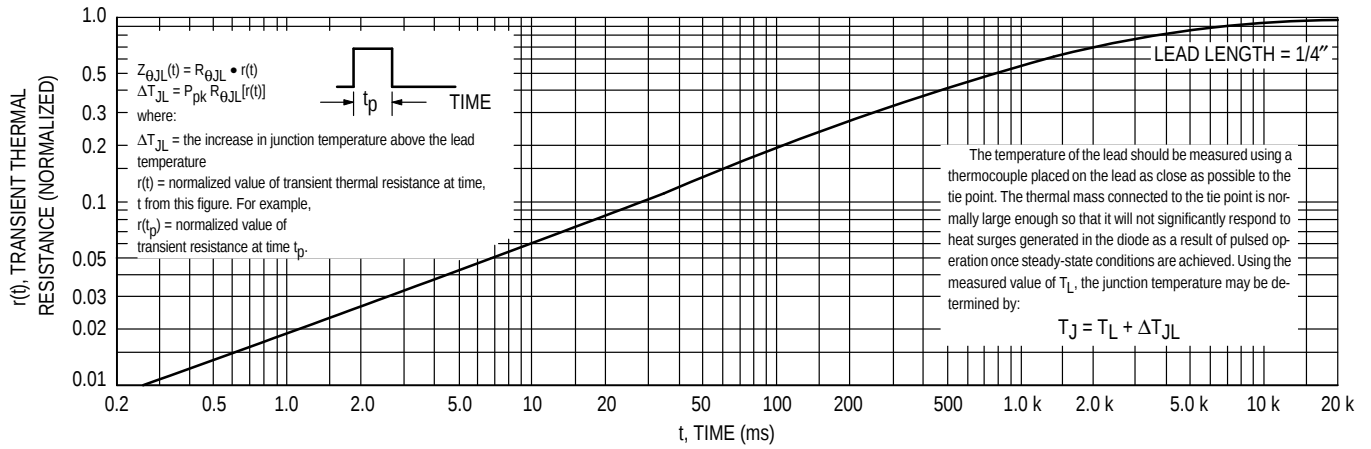


Figure 5. Thermal Response

## TYPICAL CHARACTERISTICS

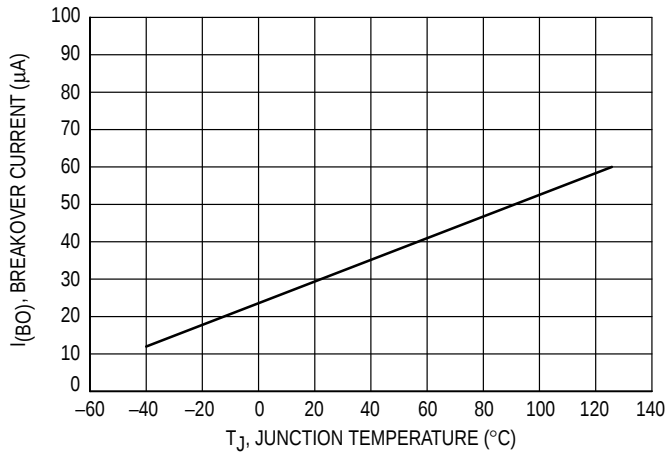


Figure 6. Breakover Current

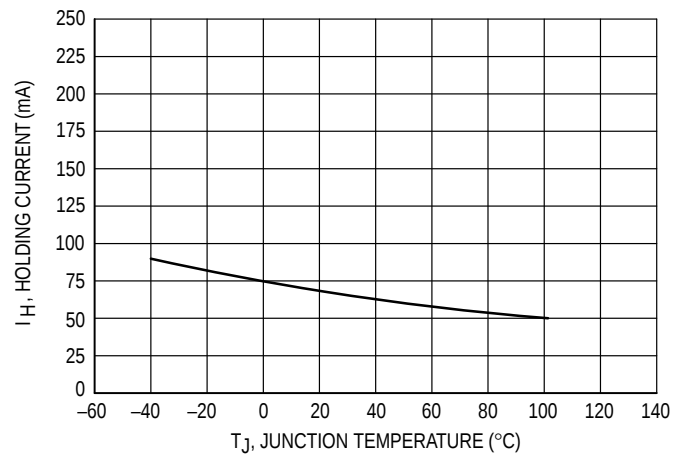


Figure 7. Holding Current

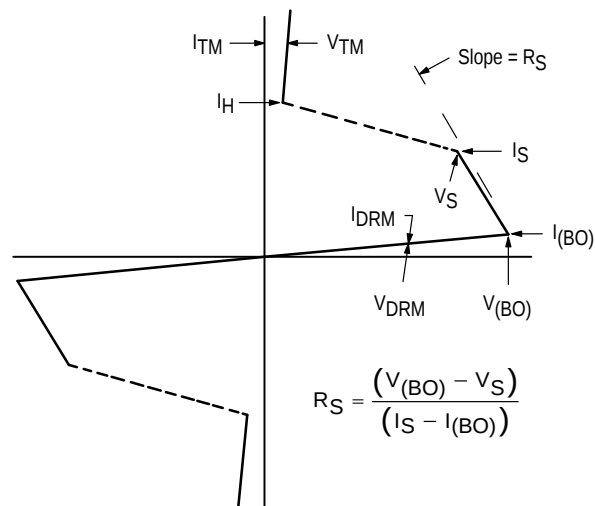
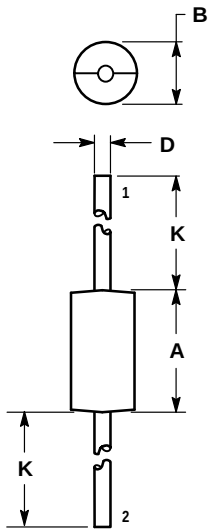


Figure 8. V-1 Characteristics

MKP3V110 MKP3V120 MKP3V130

PACKAGE DIMENSIONS



STYLE 1:  
PIN 1. CATHODE  
2. ANODE

- NOTES:  
1. DIMENSIONING AND TOLERANCING PER ANSI  
Y14.5M, 1982.  
2. CONTROLLING DIMENSION: INCH.

| DIM | INCHES |       | MILLIMETERS |      |
|-----|--------|-------|-------------|------|
|     | MIN    | MAX   | MIN         | MAX  |
| A   | 0.370  | 0.380 | 9.40        | 9.65 |
| B   | 0.190  | 0.210 | 4.83        | 5.33 |
| D   | 0.048  | 0.052 | 1.22        | 1.32 |
| K   | 1.000  | —     | 25.40       | —    |

CASE 267-03

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