THE DATASHEET OF

MKP9V160RLG

MKP9V160

Preferred Device

Sidac High Voltage

Bidirectional Triggers

Bidirectional devices 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 a Triac 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.

Features

- High Pressure Sodium Vapor Lighting
- Strobes and Flashers
- Ignitors
- High Voltage Regulators
- Pulse Generators
- Used to Trigger Gates of SCR's and Triacs
- Ⓡ Indicates UL Registered − File #E116110
- Pb−Free Package is Available

MAXIMUM RATINGS (T_J = 25°C unless otherwise noted)

Rating	Symbol	Value	Unit
Peak Repetitive Off−State Voltage (Sine Wave, 50 to 60 Hz, T_J = −40 to 125°C)	V_{DRM}, V_{RRM}	±90	V
On-State Current RMS (T_L = 80°C, Lead Length = 3/8″″ All Conduction Angles)	$I_{T(RMS)}$	±0.9	A
Peak Non−repetitive Surge Current (60 Hz One Cycle Sine Wave, T_J = 125°C)	I_{TSM}	±4.0	A
Operating Junction Temperature Range	T_J	−40 to +125	°C
Storage Temperature Range	T_{stg}	−40 to +150	°C

THERMAL CHARACTERISTICS

Rating	Symbol	Max	Unit
Thermal Resistance, Junction−to−Lead Lead Length = 3/8″	$R_{\theta JL}$	40	°C/W
Lead Solder Temperature (Lead Length ≥ 1/16″ from Case, 10 s Max)	T_L	260	°C

Stresses exceeding Maximum Ratings may damage the device. Maximum Ratings are stress ratings only. Functional operation above the Recommended Operating Conditions is not implied. Extended exposure to stresses above the Recommended Operating Conditions may affect device reliability.

*For additional information on our Pb−Free strategy and soldering details, please download the ON Semiconductor Soldering and Mounting Techniques Reference Manual, SOLDERRM/D.

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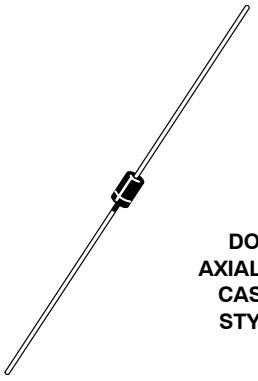
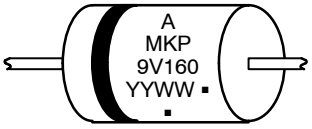
http://onsemi.com

SIDACS (Ⓡ)
0.9 AMPS RMS, 160 VOLTS



DO−41
AXIAL LEAD
CASE 59
STYLE 2

MARKING DIAGRAM



A = Assembly Location
Y = Year
WW = Work Week
▪ = Pb−Free Package
(Note: Microdot may be in either location)

ORDERING INFORMATION

Device	Package	Shipping†
MKP9V160RL	Axial Lead*	5000 Tape & Reel
MKP9V160RLG	Axial Lead*	5000 Tape & Reel

†For information on tape and reel specifications, including part orientation and tape sizes, please refer to our Tape and Reel Packaging Specifications Brochure, BRD8011/D.

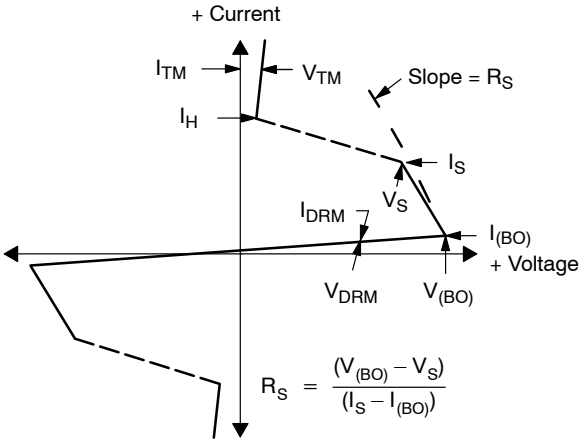
Preferred devices are recommended choices for future use and best overall value.

ELECTRICAL CHARACTERISTICS (T_C = 25°C unless otherwise noted; Electricals apply in both directions)

Characteristic		Symbol	Min	Typ	Max	Unit
OFF CHARACTERISTICS						
Repetitive Peak Off−State Current (50 to 60 Hz Sine Wave)	T_J = 25°C, V_{DRM} = 90 V	I_{DRM}	–	–	5.0	μA
ON CHARACTERISTICS						
Breakover Voltage, I_{BO} = 200 μA		V_{BO}	150	–	170	V
Peak On−State Voltage (I_{TM} = 1 A Peak, Pulse Width ≤ 300 μs, Duty Cycle ≤ 2%)		V_{TM}	–	1.3	1.5	V
Dynamic Holding Current (Sine Wave, 50 to 60 Hz, R_L = 100 Ω)		I_H	–	–	100	mA
Switching Resistance (Sine Wave, 50 to 60 Hz)		R_S	0.1	–	–	kΩ
DYNAMIC CHARACTERISTICS						
Critical Rate−of−Rise of On−State Current, Critical Damped Waveform Circuit (I_{PK} = 130 A, Pulse Width = 10 μsec)		di/dt	–	120	–	A/μs

Voltage Current Characteristic of SIDAC (Bidirectional Device)

Symbol	Parameter
I_{DRM}	Off State Leakage Current
V_{DRM}	Off State Repetitive Blocking Voltage
V_{BO}	Breakover Voltage
I_{BO}	Breakover Current
I_H	Holding Current
V_{TM}	On State Voltage
I_{TM}	Peak on State Current



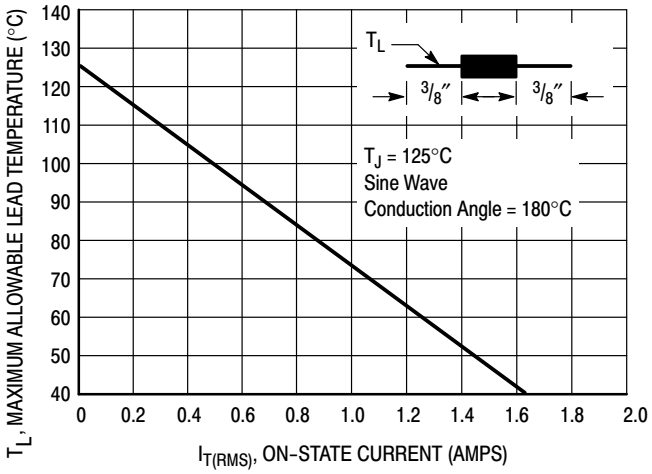


Figure 1. Maximum Lead Temperature

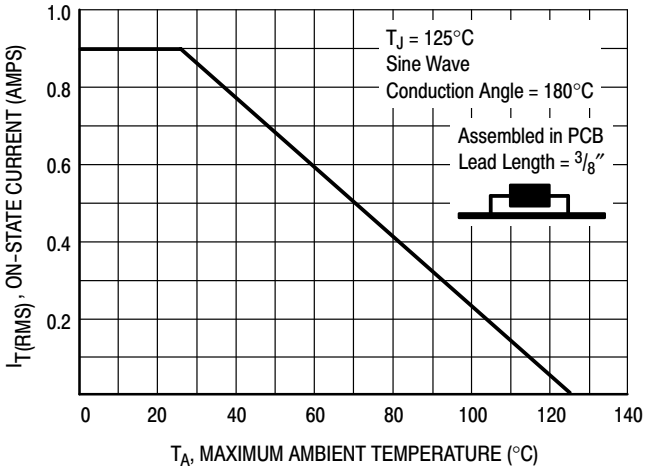


Figure 2. Maximum Ambient Temperature

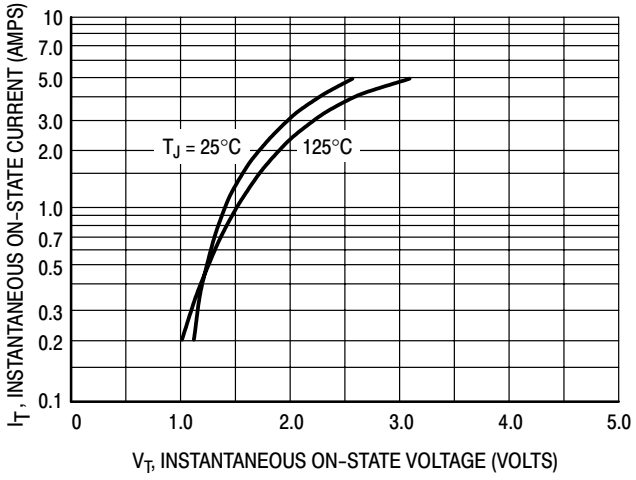


Figure 3. Typical On−State Voltage

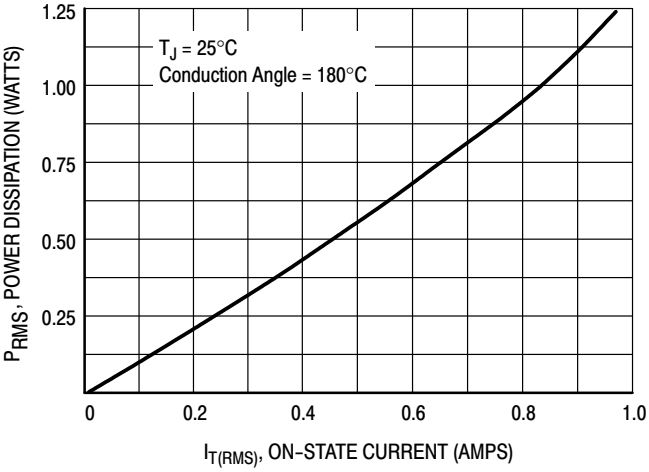


Figure 4. Typical Power Dissipation

THERMAL CHARACTERISTICS

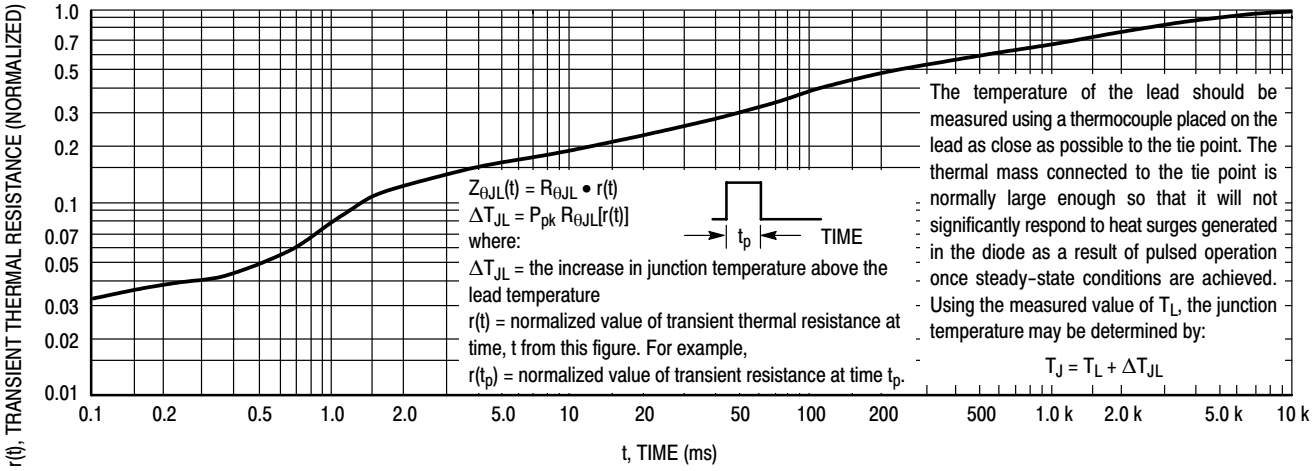


Figure 5. Thermal Response

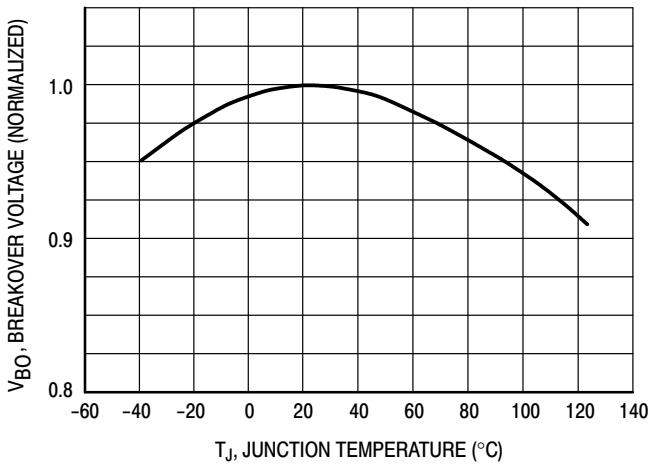


Figure 6. Typical Breakover Voltage

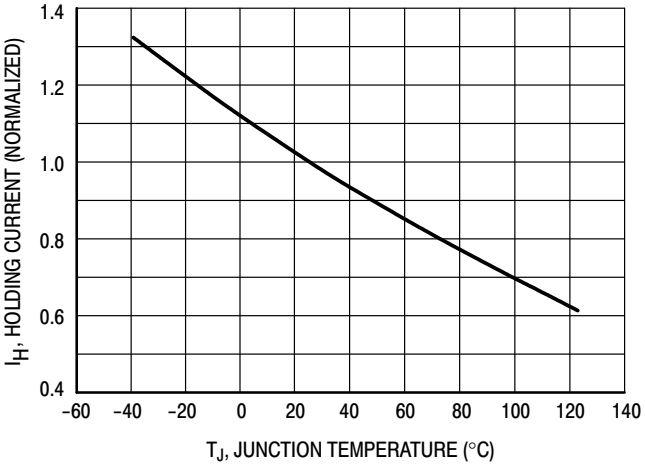


Figure 7. Typical Holding Current

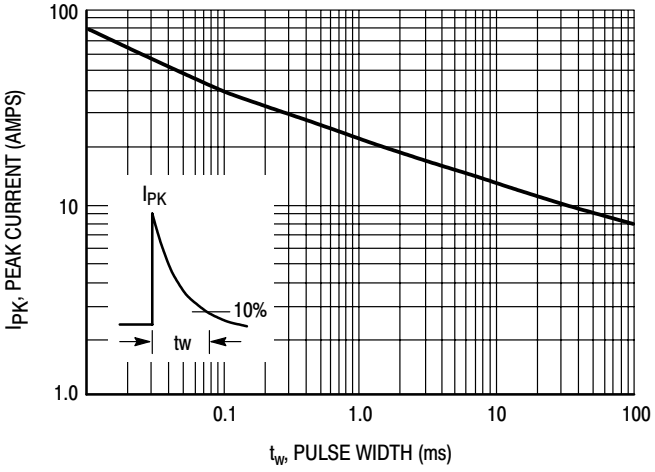
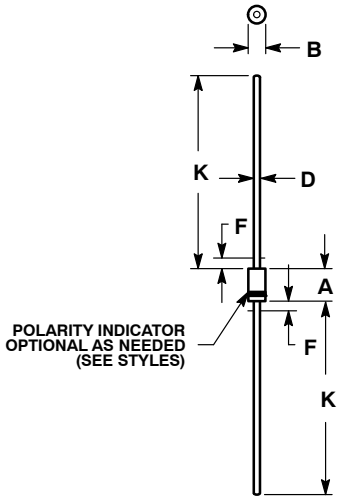


Figure 8. Pulse Rating Curve

PACKAGE DIMENSIONS

AXIAL LEAD
CASE 59−10
ISSUE U



NOTES:
1. DIMENSIONING AND TOLERANCING PER ANSI Y14.5M, 1982.
2. CONTROLLING DIMENSION: INCH.
3. ALL RULES AND NOTES ASSOCIATED WITH JEDEC DO−41 OUTLINE SHALL APPLY
4. POLARITY DENOTED BY CATHODE BAND.
5. LEAD DIAMETER NOT CONTROLLED WITHIN F DIMENSION.

	INCHES		MILLIMETERS	
DIM	MIN	MAX	MIN	MAX
A	0.161	0.205	4.10	5.20
B	0.079	0.106	2.00	2.70
D	0.028	0.034	0.71	0.86
F	−−−	0.050	−−−	1.27
K	1.000	−−−	25.40	−−−

STYLE 2:
NO POLARITY

PUBLICATION ORDERING INFORMATION

LITERATURE FULFILLMENT:
Literature Distribution Center for ON Semiconductor
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MKP9V160/D

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