Preferred Device

Sidac High VoltageBidirectional 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
- N Indicates UL Registered File #E116110
- These are Pb-Free Devices*

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) MKP3V120 MKP3V240	V _{DRM} , V _{RRM}	±90 ±180	>
On-State RMS Current (T _L = 80°C, Lead Length = 3/8", All Conduction Angles)	I _{T(RMS)}	±1.0	Α
Peak Non-Repetitive Surge Current (60 Hz One Cycle Sine Wave, Peak Value, T _J = 125°C)	I _{TSM}	±20	Α
Operating Junction Temperature Range	TJ	- 40 to +125	°C
Storage Temperature Range	T _{stg}	- 40 to +150	°C

THERMAL CHARACTERISTICS

Characteristic	Symbol	Max	Unit
Thermal Resistance, Junction-to-Lead (Lead Length = 3/8")	$R_{ heta JL}$	15	°C/W
Lead Solder Temperature (Lead Length ≥ 1/16" from Case, 10 s Max)	TL	260	°C

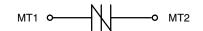
Stresses exceeding Maximum Ratings may damage the device. Maximum Ratings are stress ratings only. Functional operation above the Recommended Operating Conditions is not implied. Extended exposure to stresses above the Recommended Operating Conditions may affect device reliability.



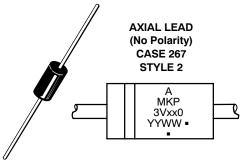
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http://onsemi.com

SIDACS (%) 1 AMPERE RMS 120 and 240 VOLTS



MARKING DIAGRAM



A = Assembly Location

xx = 12 or 24 YY, Y = Year WW = Work Week Pb-Free Package

(Note: Microdot may be in either location)

ORDERING INFORMATION

Device	Package	Shipping [†]
MKP3V120	Axial Lead*	500 Units/Box
MKP3V120G	Axial Lead*	500 Units/Box
MKP3V120RLG	Axial Lead*	1500/Tape & Reel
MKP3V240	Axial Lead*	500 Units/Box
MKP3V240G	Axial Lead*	500 Units/Box
MKP3V240RL	Axial Lead*	1500/Tape & Reel
MKP3V240RLG	Axial Lead*	1500/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.

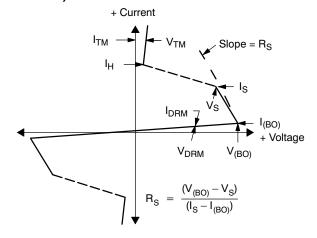
^{*}For additional information on our Pb-Free strategy and soldering details, please download the ON Semiconductor Soldering and Mounting Techniques Reference Manual, SOLDERRM/D.

 $\textbf{ELECTRICAL CHARACTERISTICS} \ (T_C = 25^{\circ}C \ unless \ otherwise \ noted; \ Electricals \ apply \ in \ both \ directions)$

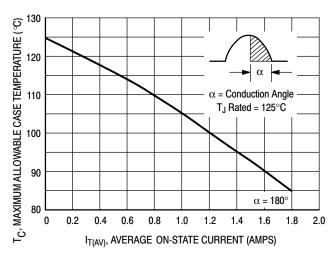
, 5		,				
Characteristic		Symbol	Min	Тур	Max	Unit
OFF CHARACTERISTICS						
Repetitive Peak Off-State Current (50 to 60 Hz Sine Wave) V _{DRM} = 90 V V _{DRM} = 180 V	MKP3V120 MKP3V240	I _{DRM}	-	-	10	μΑ
ON CHARACTERISTICS						
Breakover Voltage, I_{BO} = 200 μ A	MKP3V120 MKP3V240	V_{BO}	110 220	-	130 250	V
Breakover Current		I _{BO}	-	-	200	μΑ
Peak On-State Voltage (I _{TM} = 1 A Peak, Pulse Width ≤ 300 μs, Duty Cycle ≤ 2%)		V_{TM}	-	1.1	1.5	V
Dynamic Holding Current (Sine Wave, 60 Hz, $R_L = 100 \Omega$)		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 ($I_{PK} = 130 \Omega$, Pulse Width = 10 μ sec)		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



CURRENT DERATING



140

140

α = Conduction Angle

T_J Rated = 125°C

T_J Rated = 125°C

α = 180°

α =

Figure 1. Maximum Case Temperature

Figure 2. Maximum Ambient Temperature

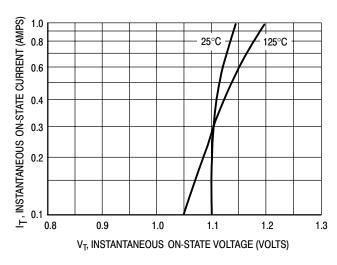


Figure 3. Typical Forward Voltage

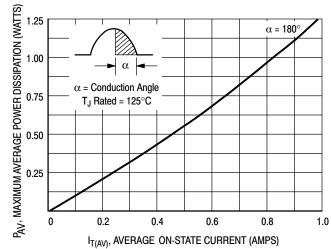


Figure 4. Typical Power Dissipation

THERMAL CHARACTERISTICS

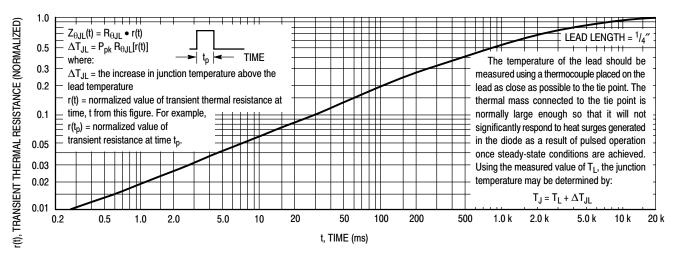


Figure 5. Thermal Response

TYPICAL CHARACTERISTICS

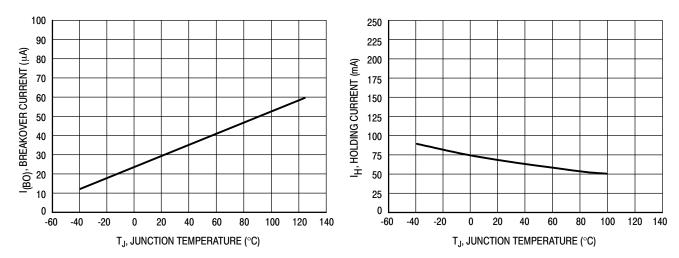
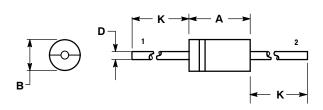


Figure 6. Typical Breakover Current

Figure 7. Typical Holding Current

PACKAGE DIMENSIONS

AXIAL LEAD CASE 267-03 ISSUE G



- DIMENSIONS AND TOLERANCING PER ANSI Y14.5M, 1982. CONTROLLING DIMENSION: INCH.
- 267-01 AND 267-02 OBSOLETE, NEW STANDARD 267-03.

	INCHES		MILLIN	IETERS
DIM	MIN	MAX	MIN	MAX
Α	0.370	0.380	9.40	9.65
В	0.190	0.210	4.83	5.33
D	0.048	0.052	1.22	1.32
K	1.000		25.40	

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