MKP3V120, MKP3V240

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. Applications are:

- 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
- Device Marking: Logo, Device Type, e.g., MKP3V120, Date Code

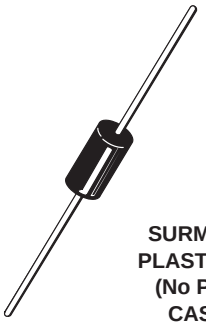
MAXIMUM RATINGS (T_J = 25°C unless otherwise noted)

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	Volts
On-State RMS Current (T_L = 80°C, Lead Length = 3/8″, All Conduction Angles)	$I_{T(RMS)}$	±1.0	Amp
Peak Non–Repetitive Surge Current (60 Hz One Cycle Sine Wave, Peak Value, T_J = 125°C)	I_{TSM}	±20	Amps
Operating Junction Temperature Range	T_J	–40 to +125	°C
Storage Temperature Range	T_{stg}	–40 to +150	°C

ON Semiconductor

http://onsemi.com

SIDACS (Ⓤ)
1 AMPERE RMS
120 and 240 VOLTS



SURMETIC 50
PLASTIC AXIAL
(No Polarity)
CASE 267
STYLE 2

ORDERING INFORMATION

Device	Package	Shipping
MKP3V120	SURMETIC 50	Bulk 500/Bag
MKP3V120RL	SURMETIC 50	Tape and Reel 1.5K/Reel
MKP3V240	SURMETIC 50	Bulk 500/Bag
MKP3V240RL	SURMETIC 50	Tape and Reel 1.5K/Reel

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

THERMAL CHARACTERISTICS

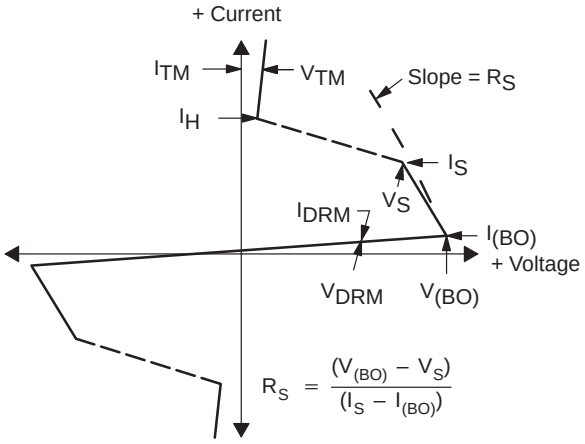
Characteristic	Symbol	Max	Unit
Thermal Resistance, Junction to Lead (Lead Length = 3/8″)	$R_{\theta JL}$	15	°C/W
Lead Solder Temperature (Lead Length ≥ 1/16″ from Case, 10 s Max)	T_L	260	°C

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)		I_{DRM}	—	—	10	μA
V_D = 90 V	MKP3V120					
V_D = 180 V	MKP3V240					
ON CHARACTERISTICS						
Breakover Voltage		V_{BO}				Volts
	MKP3V120		110	—	130	
	MKP3V240		220	—	250	
Breakover Current		I_{BO}	—	—	200	μA
Peak On–State Voltage (I_{TM} = 1 A Peak, Pulse Width ≤ 300 μs, Duty Cycle ≤ 2%)		V_{TM}	—	1.1	1.5	Volts
Dynamic Holding Current (Sine Wave, 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 Amps, Pulse Width = 10 μsec)		di/dt	50	120	130	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

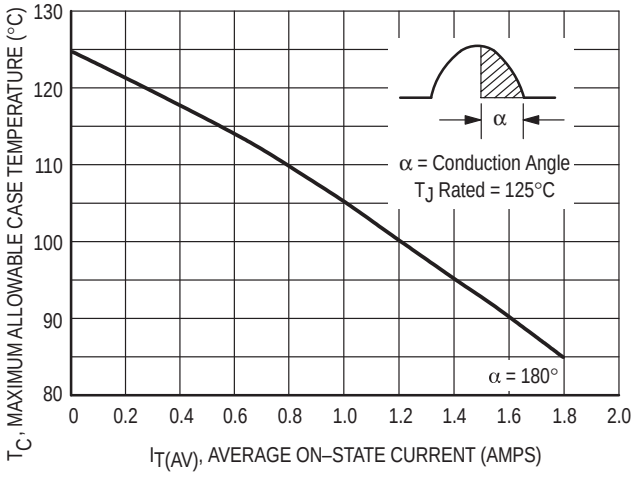


Figure 1. Maximum Case Temperature

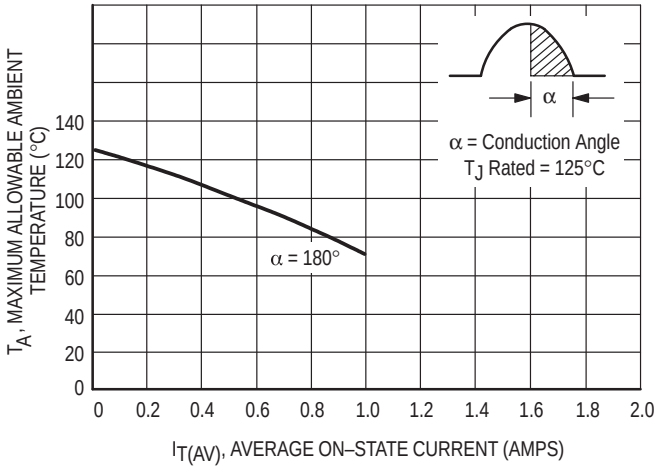


Figure 2. Maximum Ambient Temperature

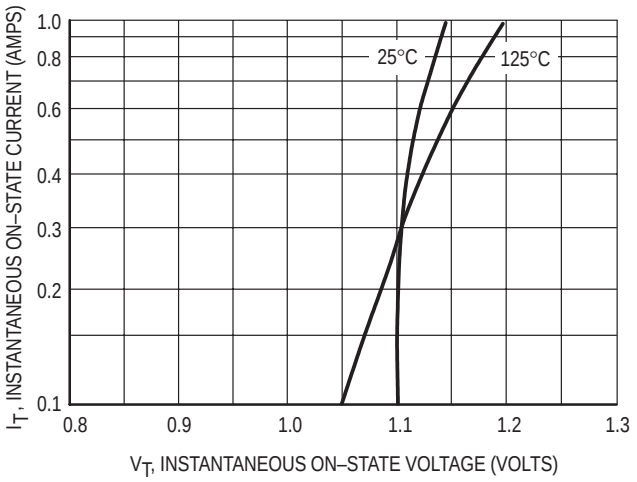


Figure 3. Typical Forward Voltage

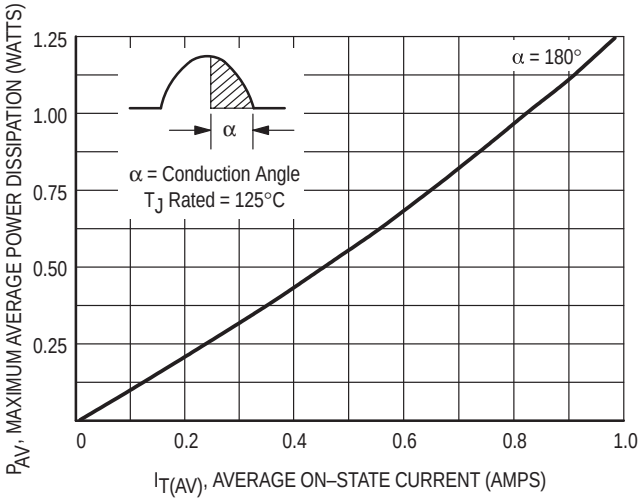


Figure 4. Typical Power Dissipation

THERMAL CHARACTERISTICS

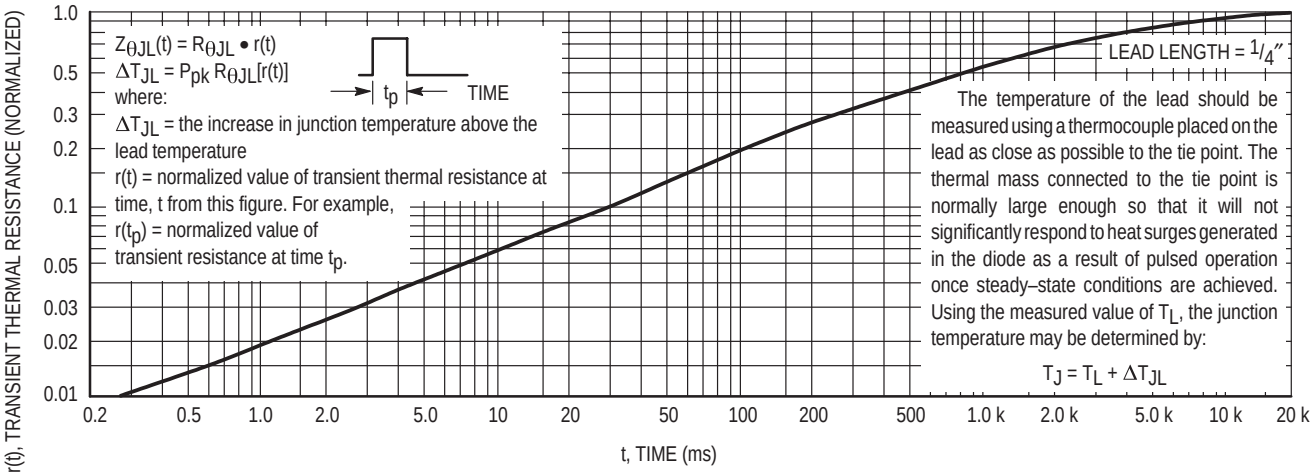


Figure 5. Thermal Response

TYPICAL CHARACTERISTICS

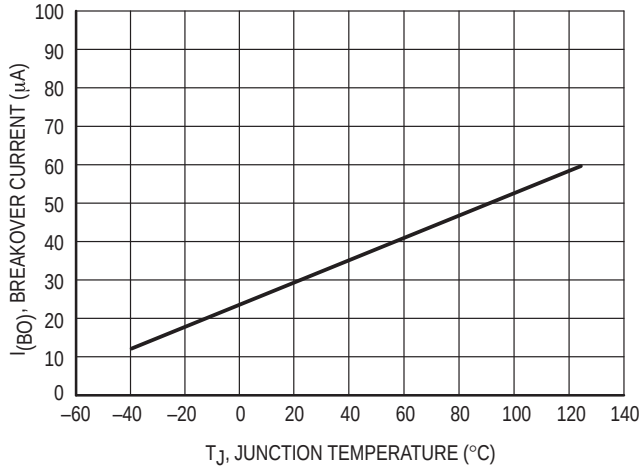


Figure 6. Typical Breakover Current

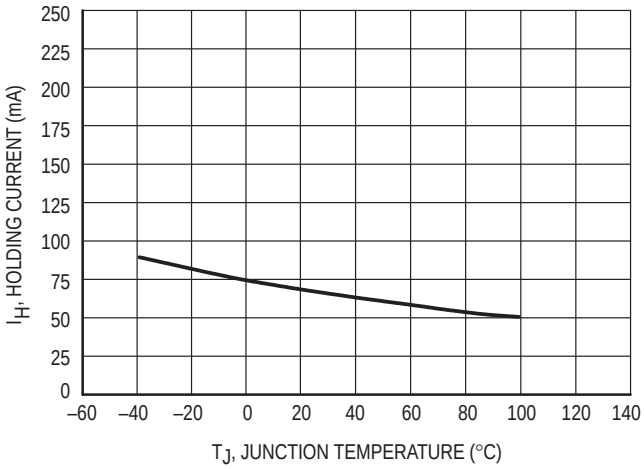
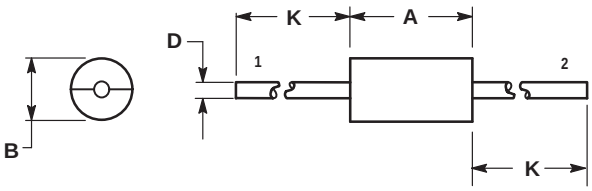


Figure 7. Typical Holding Current

PACKAGE DIMENSIONS

SURMETIC 50
PLASTIC AXIAL
(No Polarity)
CASE 267–03
ISSUE D



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

	INCHES		MILLIMETERS	
DIM	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	—

STYLE 2:
NO POLARITY

Notes

Notes

PUBLICATION ORDERING INFORMATION

NORTH AMERICA Literature Fulfillment:
Literature Distribution Center for ON Semiconductor
P.O. Box 5163, Denver, Colorado 80217 USA
Phone: 303–675–2175 or 800–344–3860 Toll Free USA/Canada
Fax: 303–675–2176 or 800–344–3867 Toll Free USA/Canada
Email: ONlit@hibbertco.com
Fax Response Line: 303–675–2167 or 800–344–3810 Toll Free USA/Canada

N. American Technical Support: 800–282–9855 Toll Free USA/Canada

EUROPE: LDC for ON Semiconductor – European Support
German Phone: (+1) 303–308–7140 (M–F 1:00pm to 5:00pm Munich Time)
Email: ONlit–german@hibbertco.com
French Phone: (+1) 303–308–7141 (M–F 1:00pm to 5:00pm Toulouse Time)
Email: ONlit–french@hibbertco.com
English Phone: (+1) 303–308–7142 (M–F 12:00pm to 5:00pm UK Time)
Email: ONlit@hibbertco.com

EUROPEAN TOLL–FREE ACCESS*: 00–800–4422–3781
*Available from Germany, France, Italy, England, Ireland

CENTRAL/SOUTH AMERICA:
Spanish Phone: 303–308–7143 (Mon–Fri 8:00am to 5:00pm MST)
Email: ONlit–spanish@hibbertco.com

ASIA/PACIFIC: LDC for ON Semiconductor – Asia Support
Phone: 303–675–2121 (Tue–Fri 9:00am to 1:00pm, Hong Kong Time)
Toll Free from Hong Kong & Singapore:
001–800–4422–3781
Email: ONlit–asia@hibbertco.com

JAPAN: ON Semiconductor, Japan Customer Focus Center
4–32–1 Nishi–Gotanda, Shinagawa–ku, Tokyo, Japan 141–8549
Phone: 81–3–5740–2745
Email: r14525@onsemi.com

ON Semiconductor Website: http://onsemi.com

For additional information, please contact your local
Sales Representative.