


MKP1V120 Series

Preferred Device

Sidac High Voltage

Bidirectional Triggers

Bi-directional 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., MKP1V120, Date Code

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

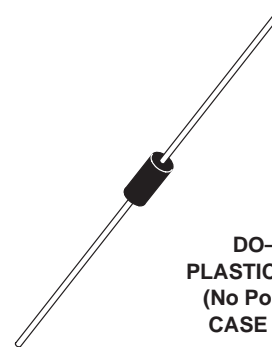
Rating	Symbol	Value	Unit
Peak Repetitive Off-State Voltage (Sine Wave, 50 to 60 Hz, T _J = -40 to 125°C) MKP1V120, MKP1V130, MKP1V160 MKP1V240	V _{DRM} , V _{RRM}	±90 ±180	Volts
On-State Current RMS (T _L = 80°C, Lead Length = 3/8", All Conduction Angles)	I _{T(RMS)}	±0.9	Amp
Peak Non-repetitive Surge Current (60 Hz One Cycle Sine Wave, T _J = 125°C)	I _{TSM}	±4.0	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 (⚡)
0.9 AMPERES RMS
120 thru 240 VOLTS



**DO-41
PLASTIC AXIAL
(No Polarity)
CASE 059A**

ORDERING INFORMATION

Device	Package	Shipping
MKP1V120RL	DO41	Tape and Reel 5K/Reel
MKP1V130RL	DO41	Tape and Reel 5K/Reel
MKP1V160	DO41	Bulk 1K/Bag
MKP1V160RL	DO41	Tape and Reel 5K/Reel
MKP1V240	DO41	Bulk 1K/Bag
MKP1V240RL	DO41	Tape and Reel 5K/Reel

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

MKP1V120 Series

THERMAL CHARACTERISTICS

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

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

Characteristic	Symbol	Min	Typ	Max	Unit
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OFF CHARACTERISTICS

Repetitive Peak Off-State Current (50 to 60 Hz Sine Wave) $V_D = 90\text{ V}$, MKP1V120, MKP1V130 and MKP1V160 $V_D = 180\text{ V}$, MKP1V240	$T_J = 25^\circ\text{C}$ I_{DRM}	—	—	5.0	μA
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ON CHARACTERISTICS

Breakover Voltage MKP1V120 MKP1V130 MKP1V160 MKP1V240	V_{BO}	110 120 150 220	— —	130 140 170 250	Volts
Peak On-State Voltage ($I_{TM} = 1\text{ A Peak}$, Pulse Width $\leq 300\ \mu\text{s}$, Duty Cycle $\leq 2\%$)	V_{TM}	—	1.3	1.5	Volts
Dynamic Holding Current (Sine Wave, 50 to 60 Hz, $R_L = 100\ \Omega$)	I_H	—	—	100	mA
Switching Resistance (Sine Wave, 50 to 60 Hz)	R_S	0.1	—	—	k Ω
Breakover Current @ V_{BO}	I_{BO}	—	—	200	μA

DYNAMIC CHARACTERISTICS

Critical Rate-of-Rise of On-State Current, Critical Damped Waveform Circuit ($I_{PK} = 130\text{ Amps}$, Pulse Width = 10 μsec)	di/dt	50	120	130	A/ μs
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MKP1V120 Series

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

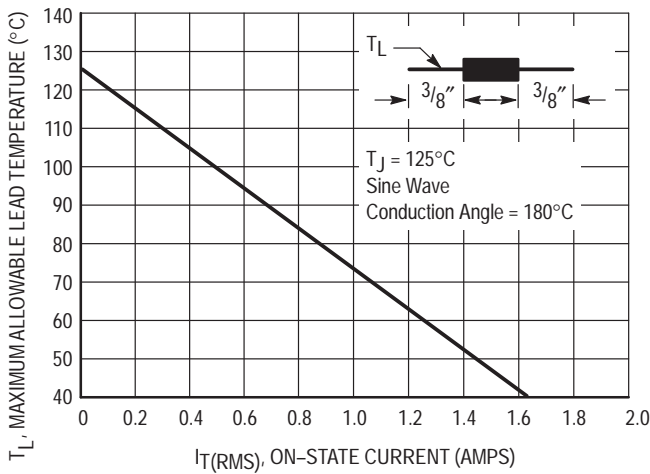
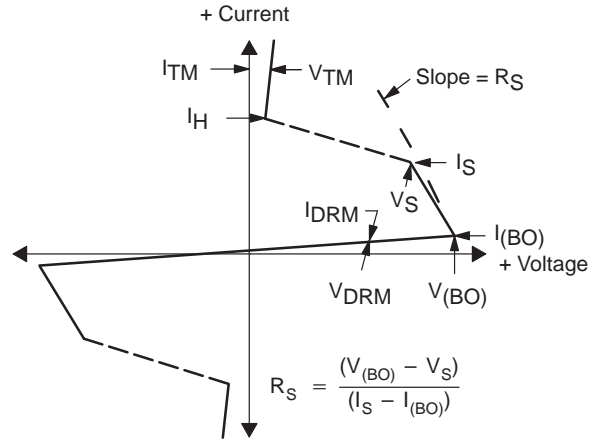


Figure 1. Maximum Lead Temperature

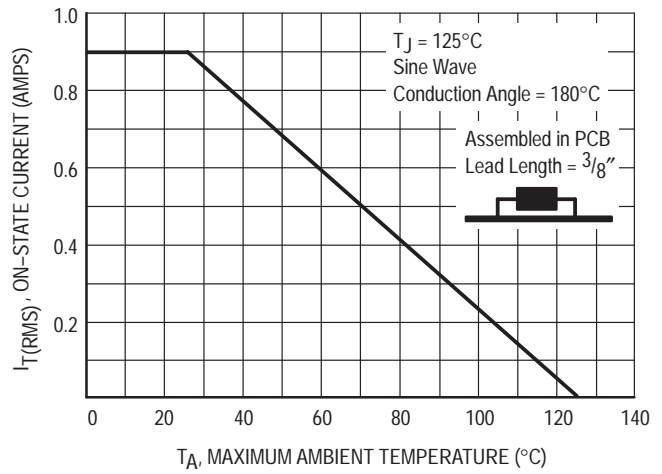


Figure 2. Maximum Ambient Temperature

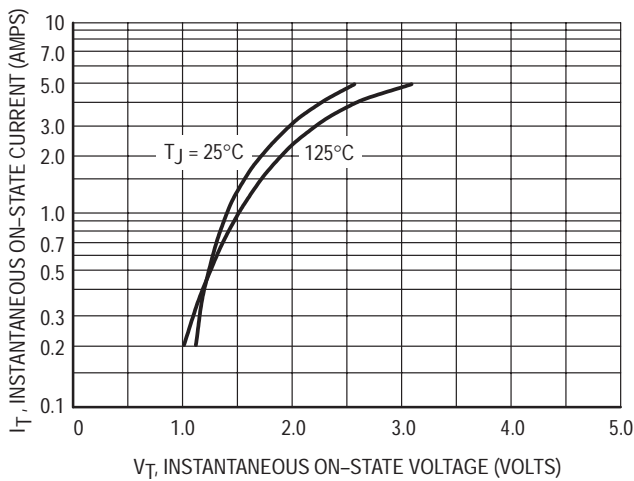


Figure 3. Typical On-State Voltage

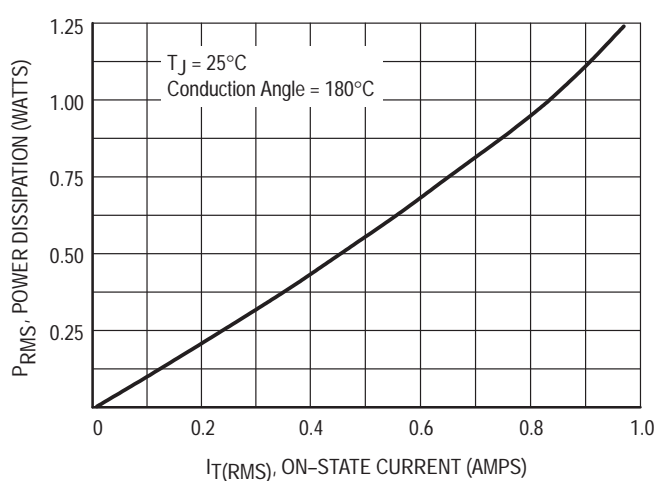


Figure 4. Typical Power Dissipation

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THERMAL CHARACTERISTICS

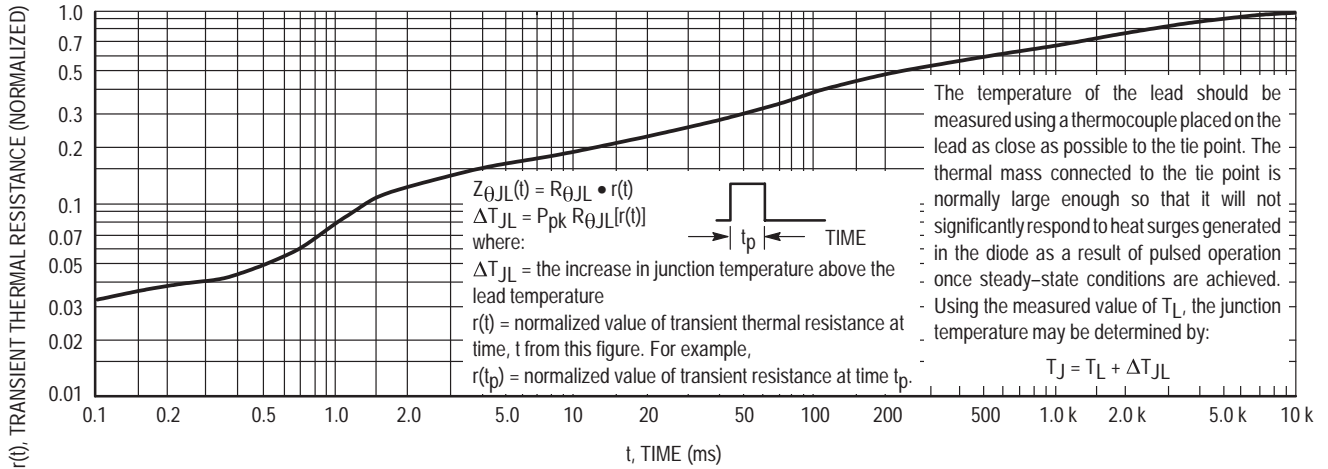


Figure 5. Thermal Response

TYPICAL CHARACTERISTICS

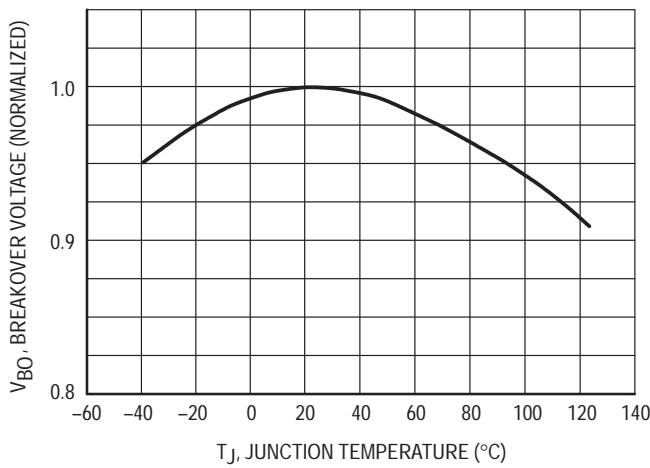


Figure 6. Typical Breakover Voltage

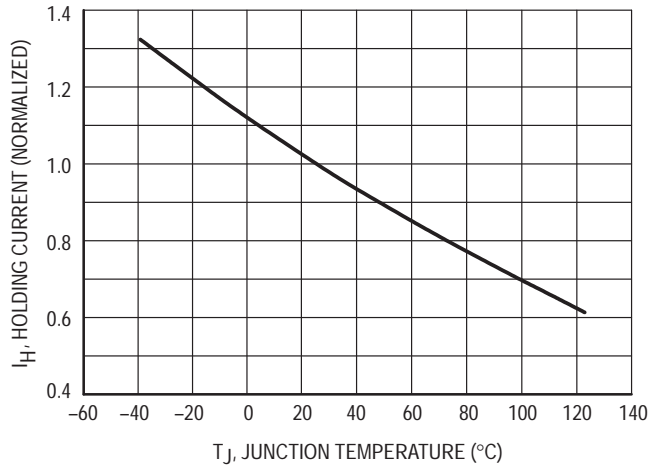


Figure 7. Typical Holding Current

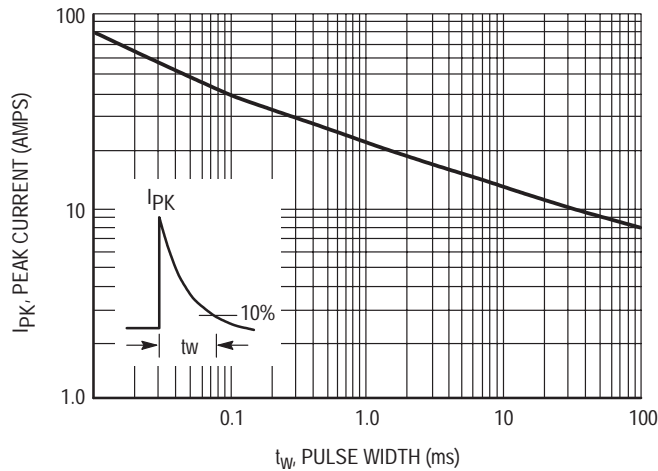
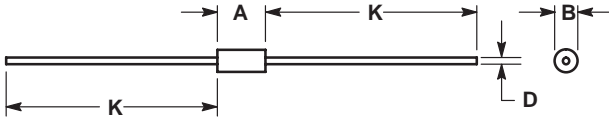


Figure 8. Pulse Rating Curve

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PACKAGE DIMENSIONS

DO-41
PLASTIC AXIAL
(No Polarity)
CASE 059A-01
ISSUE A



NOTES:

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

DIM	INCHES		MILLIMETERS	
	MIN	MAX	MIN	MAX
A	0.235	0.260	5.97	6.60
B	0.110	0.120	2.79	3.05
D	0.030	0.034	0.76	0.86
K	1.100	---	27.94	---

Notes

Notes

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