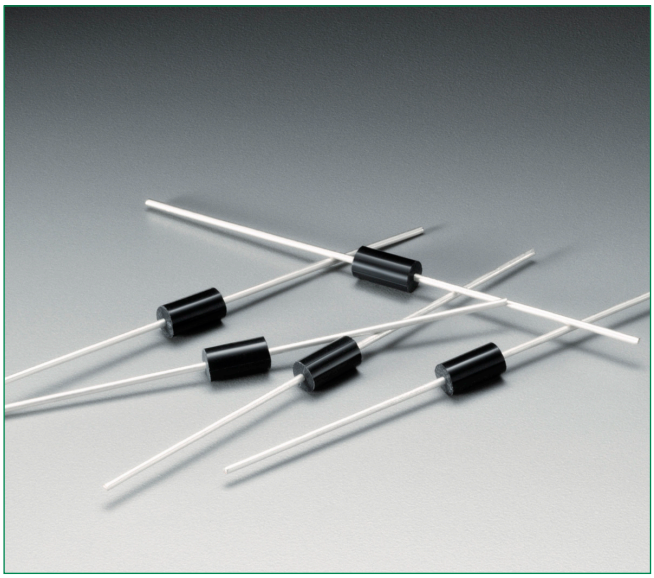
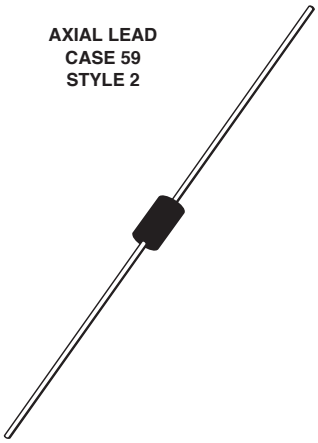
MKP3V120, MKP3V240



Axial Lead



Description

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 Triac
- Ⓤ Indicates UL Registered – File #E128662
- These are Pb–Free Devices

Functional Diagram

Additional Information

Datasheet | Resources | Samples

Maximum Ratings (T_J = 25°C unless otherwise noted)

Rating	Symbol	Value	Unit
Peak Repetitive Off–State Voltage (Note 1) (– 40 to 125°C, Sine Wave, 50 to 60 Hz, Gate Open) MKP3V120 MKP3V240	V_{DRM}, V_{RRM}	 ±90 ±180	V
On-State RMS Current (All Conduction Angles; T_L = 80°C, Lead Length = 3/8")	$I_{T\ (RMS)}$	±1.0	A
Peak Non-Repetitive Surge Current (60 Hz One Cycle, Sine Wave, T_J = 125°C)	I_{TSM}	±20	A
Operating Junction Temperature Range	T_J	-40 to +125	°C
Storage Temperature Range	T_{stg}	-40 to +150	°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.

Thermal Characteristics

Rating	Symbol	Value	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

Revised: 08/30/17

Electrical Characteristics - OFF (T_J = 25°C unless otherwise noted; Electricals apply in both directions)

Characteristic		Symbol	Min	Typ	Max	Unit
Repetitive Peak Off–State Current (50 to 60 Hz Sine Wave) V_{DRM} = 90V, MKP3V120 V_{DRM} = 180V, MKP3V240		I_{DRM}	-	-	10	µA

Electrical Characteristics - ON (T_J = 25°C unless otherwise noted; Electricals apply in both directions)

Characteristic		Symbol	Min	Typ	Max	Unit
Breakover Voltage	MKP3V120 I_{BO} =200 µA	V_{BO}	110	–	130	V
	MKP3V240 I_{BO} =200 µA		220	–	250	
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, RL = 100 Ω)		I_H	–	–	100	mA
Switching Resistance (Sine Wave, 50 to 60 Hz)		R_S	0.1	–	–	kΩ

Dynamic Characteristics

Characteristic	Symbol	Min	Typ	Max	Unit
Critical Rate–of–Rise of On–State Current, Critical Damped Waveform Circuit (I_{PK} = 130 Ω, Pulse Width = 10 µsec)	dv/dt	–	120	–	V/µs

Voltage Current Characteristic of SCR

Symbol	Parameter
V_{DRM}	Peak Repetitive Forward Off State Voltage
I_{DRM}	Peak Forward Blocking Current
V_{RRM}	Peak Repetitive Reverse Off State Voltage
I_{RRM}	Peak Reverse Blocking Current
V_{TM}	Maximum On State Voltage
I_H	Holding Current

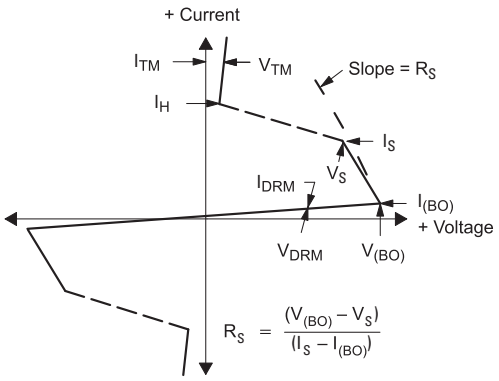


Figure 1. Maximum Case Temperature

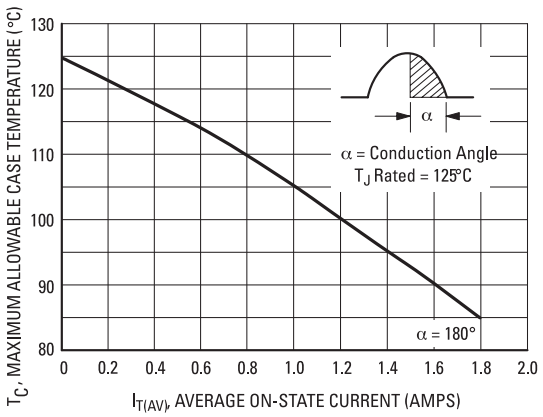


Figure 2. Maximum Ambient Temperature

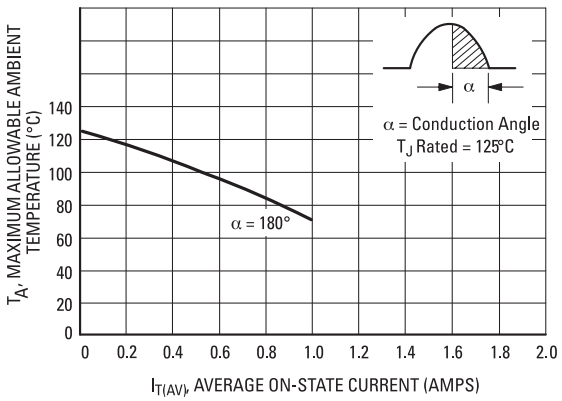


Figure 3. Typical Forward Voltage

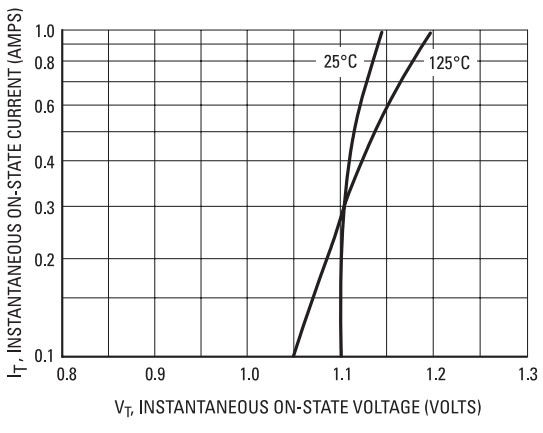
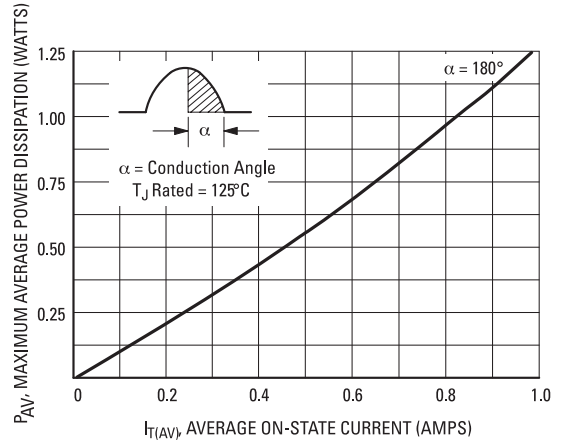
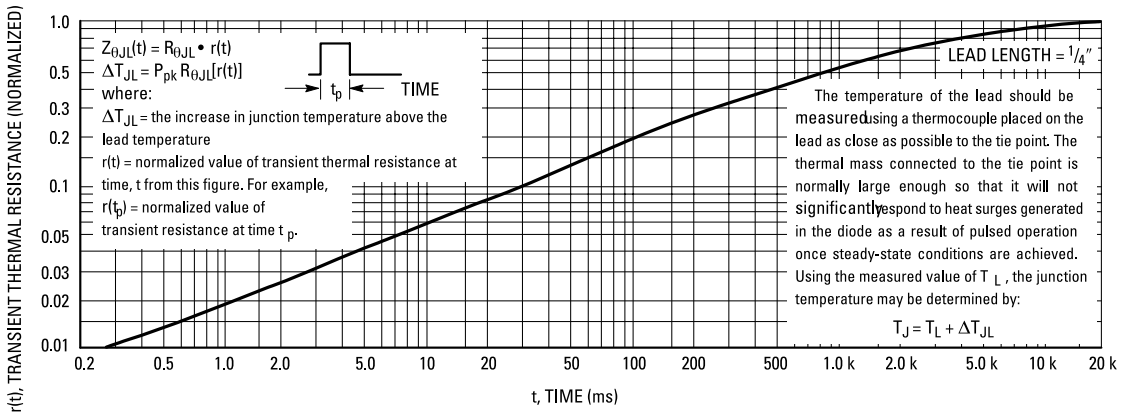


Figure 4. Typical Power Dissipation



Thermal Characterstics

Figure 5. Thermal Response



Typical Characterstics

Figure 6. Typical Breakover Current

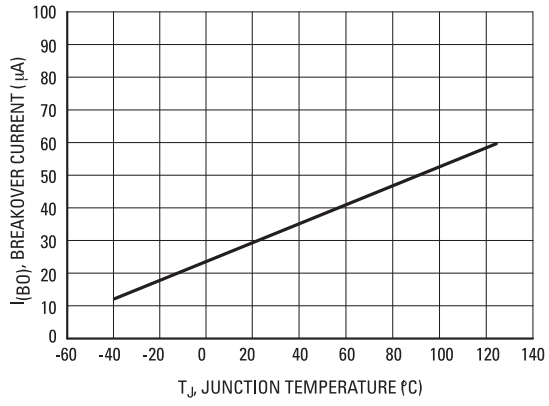
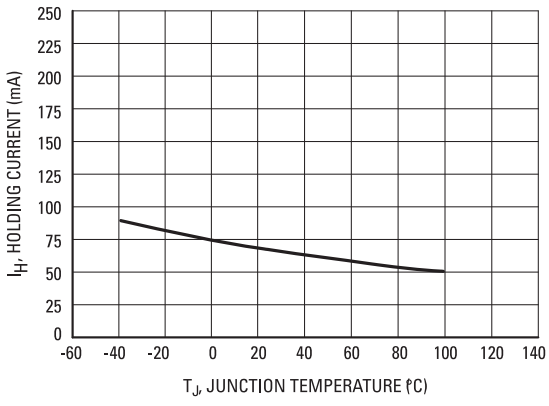


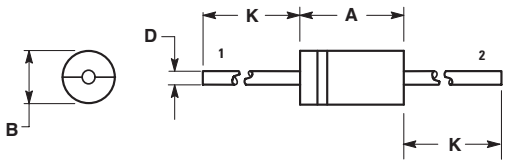
Figure 7. Typical Holding Current



Thyristors

Surface Mount – 120V - 240V > MKP3V120, MKP3V240

Dimensions

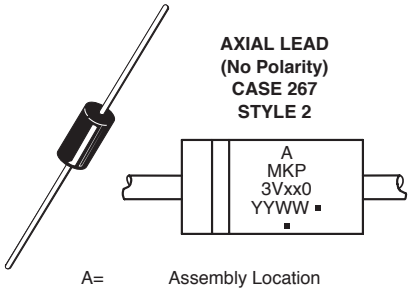


Dim	Inches		Millimeters	
	Min	Max	Min	Max
A	0.287	0.374	7.30	9.50
B	0.189	0.209	4.80	5.30
D	0.047	0.051	1.20	1.30
K	1.000	---	25.40	---

1. DIMENSIONING AND TOLERANCING PER ANSI Y14.5M, 1982.
2. CONTROLLING DIMENSION: INCH.
3. ALL RULES AND NOTES ASSOCIATED WITH JEDEC DO–41 267-04 OBSOLETE, NEW STANDARD 267-05.

STYLE 2: NO POLARITY

Part Marking System



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
MKP3V120G	Axial Lead	500 Units / Box
MKP3V120RLG		1500 / Tape & Reel
MKP3V240G		500 Units / Box
MKP3V240RLG		1500 / Tape & Reel