LITE-ON SEMICONDUCTOR

SD09A-E SERIES

Sidac High Voltage
Sillicon Bidirectional Thyristors

SIDACS
0.9 AMPERES RMS
105 thru 240 VOLTS

FEATURES

- High pulse current capability, typ=120A/us
- Glass passivation insures reliable operation
- Max. Dynamic Holding Current -100mA
- UL Recognition File # E219635

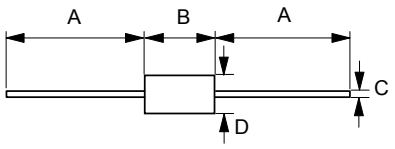
APPLICATION

- High Pressure Sodium Vapor Lighting
- Strobes and Flashers
- Ignitors
- High Voltage Regulators
- Pulse Generators
- Used to Trigger Gates of SCR's and Triacs

MECHANICAL DATA

- Case: JEDEC DO-41 molded plastic
- Terminals: Lead Free Plating (Matte Tin Finish)
- Component in accordance to RoHs 2002/95/EC
- Weight : 0.012 ounces, 0.34 grams

DO-41



	DO-41	
Dim.	Min.	Max.
A	25.4	-
B	4.10	5.20
C	0.71 ∅	0.86 ∅
D	2.00 ∅	2.70 ∅
All Dimensions in millimeter		

MAXIMUM RATINGS (Tj= 25℃ unless otherwise noticed)

Rating		Symbol	Value	Unit
Peak Repetitive Off– State Voltage (TJ= -40 to 125℃, Sine Wave, 50 to 60 Hz)	SD09A105E, SD09A120E, SD09A130E, SD09A160E	V_{DRM}, V_{RRM}	+90 - 90	Volts
	SD09A220E, SD09A240E	V_{DRM}, V_{RRM}	+180 - 180	Volts
On-State RMS Current (T_L = 80℃, Lead Lengh=3/8" , All Conduction Angles)		$I_{T(RMS)}$	± 0.9	Amp
Peak Non-Repetitive Surge Current 60 Hz One Cycle Sine Wave (Tj = 125℃)		I_{TSM}	± 4.0	Amps
Operating Junction Temperature Range		T_J	-40 to +125	℃
Storage Temperature Range		Tstg	-40 to +150	℃

Note:
Maximum ratings are those values beyond which device damage can occur.
Maximum ratings applied to the device are individual stress limit values (not normal operating conditions) and are not valid simultaneously. If these limits are exceeded, device functional operation is not implied, damage may occur and reliability may be affected.

REV. 8, Oct-2010, KDXC01

THERMAL CHARACTERISTICS

Characteristic	Symbol	Value	Unit
Thermal Resistance - Junction to Lead Lead Length = 3/8 ”	RthJL	40	℃/W
Maximum Lead Solder Temperature (Lead Length≧ 1/16 ” from Case, 10s Max)	T_L	260	℃

ELECTRICAL CHARACTERISTICS (Tj=25℃ unless otherwise noted)

Characteristics	Symbol	Min	Typ	Max	Unit
OFF CHARACTERISTICS					
Peak Reptitive Forward or Reverse Blocking Current (50 to 60 Hz Sine Wave) V_{DRM}=90V, SD1A105, SD1A120, SD1A130, SD1A160 V_{DRM}=180V, SD1A220, SD1A240	I_{DRM}	**----**	**----**	5	uA
ON CHARACTERISTICS					
Peak On-State Voltage (I_{TM}=1A Peak @Tp ≦300 us, Duty Cycle ≦ 2%)	V_{TM}	----	1.3	1.5	Volts
Breakover Voltage IBO= 35uA SD09A105E 35uA SD09A120E 35uA SD09A130E 35uA SD09A160E 35uA SD09A220E 35uA SD09A240E	V_{BO}	 95 110 120 150 210 220	 --- --- --- --- --- ---	 110 130 140 170 230 250	Volts
Dynamic Holding Current (Sine Wave, 50 to 60 Hz, R_L=100 Ohm)	I_H	----	----	100	mA
Switching Resistance (Sine Wave, 50 to 60 Hz)	Rs	0.1	----	----	kΩ
DYNAMIC CHARACTERISTICS					
Critical Rate of Rise of On-State Current, Critical Damped Waveform Circuit (I_{PK} = 130 A, Pulse Width = 10 us)	di/dt	----	120	----	A/us

ORDERING INFORMATION

SD	09A	105	E
SIDAC Series	Current: 09A=0.9A	Voltage: 105=105V 120=120V 130=130V 160=160V 220=220V 240=240V	Package: DO-41

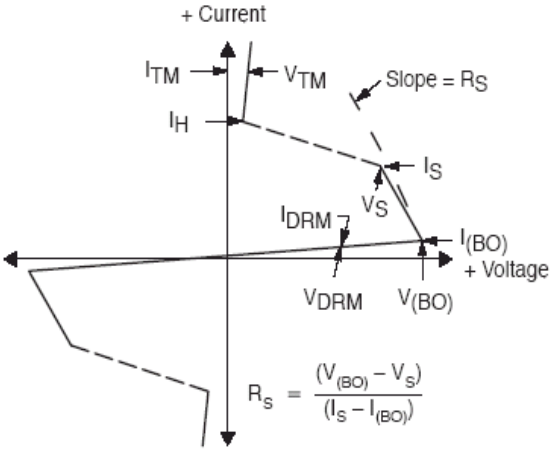
MARKING INFORMATION

SD09AXXXE

NOTE: XXX = Voltage

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



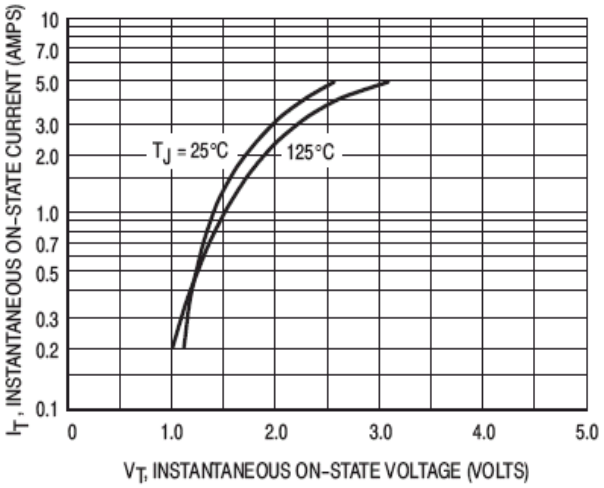


Figure 1. Typical On–State Voltage

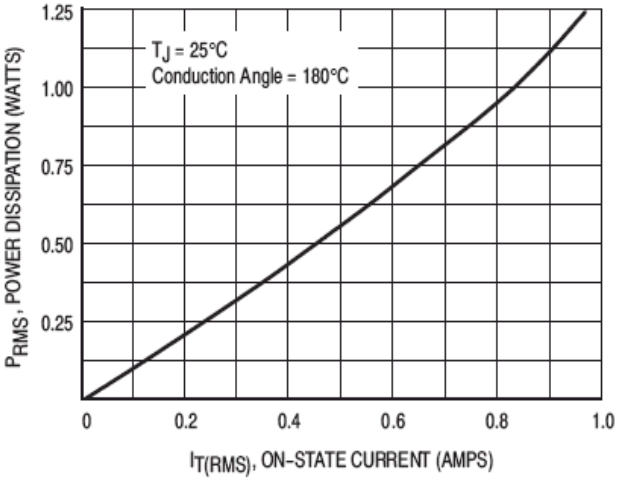


Figure 2. Typical Power Dissipation

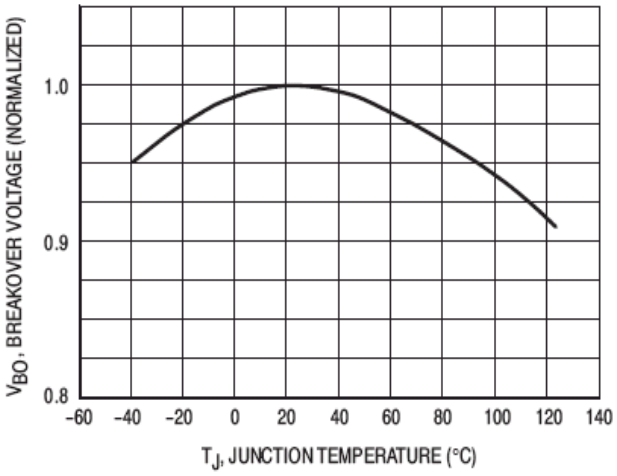


Figure 3. Typical Breakover Voltage

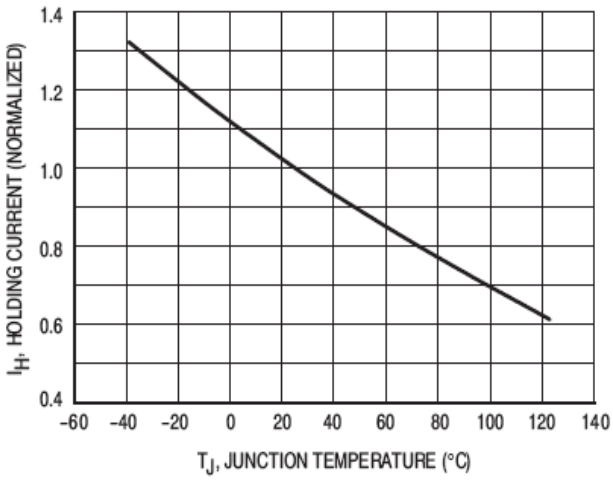


Figure 4. Typical Holding Current

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