

# SD1A150A(LS)

## SIDAC HIGH VOLTAGE SILICON UNIDIRECTIONAL THYRISTORS

**1 AMPERE  
150 VOLTS**

### FEATURES

- $V_{BO}$  range is from 142 to 157 Vdc
- $V_{DRM}$  with stand 120V
- $I_H$  is under 60mA
- Compact package for spacing saving.
- **Lead-Free Finish; RoHS Compliant (Notes 1 & 2)**
- **Halogen and Antimony Free. "Green" Device (Note 3)**

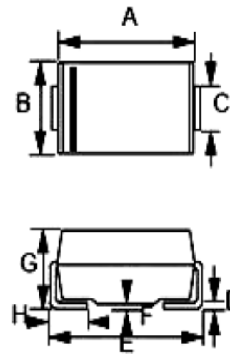
### APPLICATION

- Gas Igniters

### MECHANICAL DATA

- Package: SMA
- Package Material: JEDEC DO-214AC molded plastic
- Moisture Sensitivity: Level 1 per J-STD-020
- Terminals: Finish – Matte Tin Plated Leads, Solderable per MIL-STD-202, Method 208 Ⓔ③
- Weight: 0.070 grams (Approximate)

### SMA



SMA		
DIM.	MIN.	MAX.
A	4.06	4.57
B	2.29	2.92
C	1.27	1.63
D	0.15	0.31
E	4.83	5.59
F	0.05	0.20
G	1.96	2.40
H	0.76	1.52

All Dimensions in millimeter



## MAXIMUM RATINGS AND ELECTRICAL CHARACTERISTICS

Ratings at +25°C ambient temperature unless otherwise specified.

### MAXIMUM RATINGS

PARAMETER	SYMBOL	VALUE	UNIT
Peak repetitive off-state voltage $T_J = -40$ to $+125^\circ\text{C}$ , Sine Wave, 50 to 60Hz	$V_{DRM}$	120	Volts
On-state RMS current $T_L = 80^\circ\text{C}$ , all conduction angles	$I_T(\text{RMS})$	1	Amp
Peak non-repetitive surge current $T_a = 25^\circ\text{C}$ , pulse width to = 10us, $f = 5\text{Hz}$ sine wave, repetitive peak value $f = 60\text{Hz}$	$I_{TSM}$	280 120	Amps
Maximum lead Solder Temperature (Lead Length $\geq 1/16$ " from Case, 10s Max)	$T_L$	260	$^\circ\text{C}$
Operating junction temperature range	$T_J$	-40 ~ +125	$^\circ\text{C}$
Storage temperature range	$T_{STG}$	-40 ~ +150	$^\circ\text{C}$

### Notes:

1. EU Directive 2002/95/EC (RoHS), 2011/65/EU (RoHS 2) & 2015/863/EU (RoHS 3) compliant. All applicable RoHS exemptions applied.
2. See <https://www.diodes.com/quality/lead-free/> for more information about Diodes Incorporated's definitions of Halogen- and Antimony-free, "Green" and Lead-free.
3. Halogen- and Antimony-free "Green" products are defined as those which contain <900ppm bromine, <900ppm chlorine (<1500ppm total Br + Cl) and <1000ppm antimony compounds.
4. 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.

**THERMAL CHARACTERISTICS**

PARAMETER	SYMBOL	TYP.	UNIT
Typical thermal resistance junction to case	$R_{thJC}$	15	°C/W

**OFF CHARACTERISTICS**

PARAMETER	SYMBOL	MAX	UNIT
Peak repetitive forward or reverse blocking current (50 to 60Hz) $V_{DRM}=120V$	$I_{DRM}$	10	uA

**ON CHARACTERISTICS**

PARAMETER	SYMBOL	MIN	TYP	MAX	UNIT
Peak On-State Voltage $I_T = 1A$	$V_{TM}$	---	1.1	1.5	Volts
Breakover Voltage $I_{BO} = 5uA$	$V_{BO}$	142	150	157	Volts
Break over current	$I_{BO}$	---	---	200	uA
Holding current	$I_H$	---	---	60	mA
Switching resistance	$R_s$	0.1	---	---	kΩ

**DYNAMIC CHARACTERISTICS**

PARAMETER	SYMBOL	MIN	TYP	MAX	UNIT
Critical rate of rise of on-state current	$di/dt$	---	80	---	A/μs

**RATING AND CHARACTERISTIC CURVES**  
**SD1A150A(LS)**

Fig.1- TYPICAL FORWARD VOLTAGE

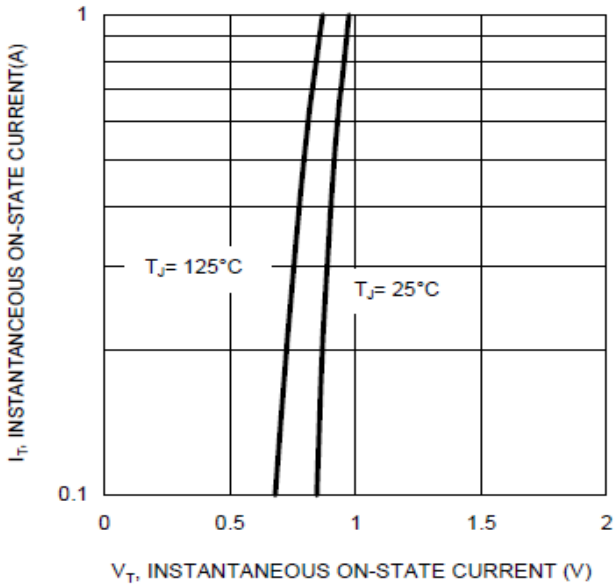


Fig.2- TYPICAL POWER DISSIPATION

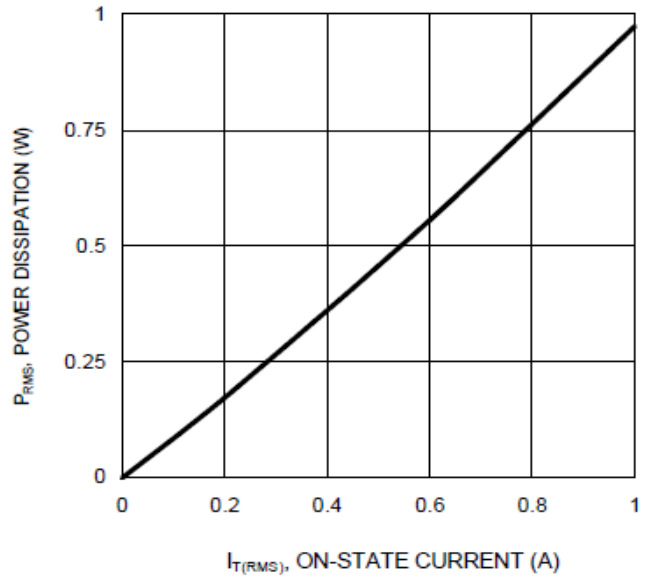


FIG.3- TYPICAL BREAKOVER VOLTAGE

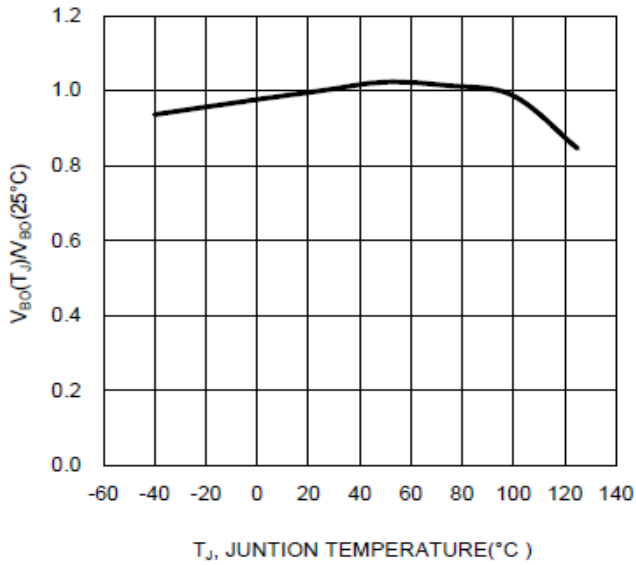
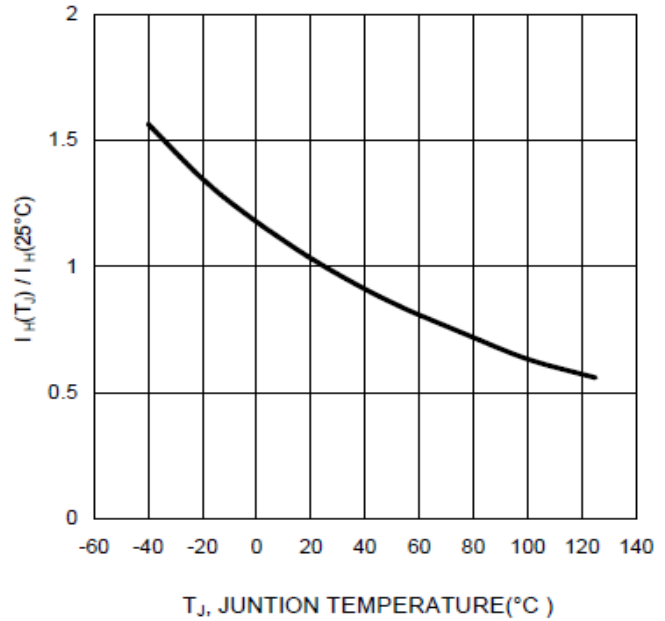


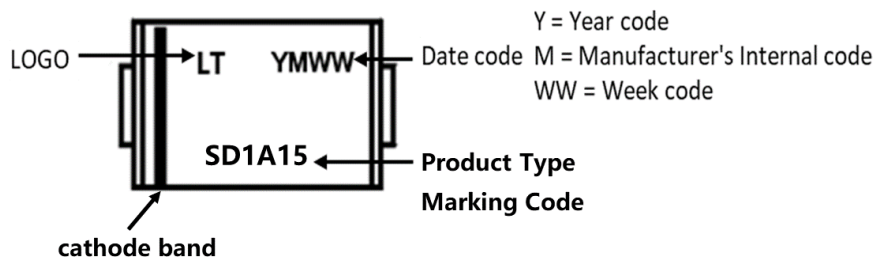
Fig.4- TYPICAL HOLDING CURRENT



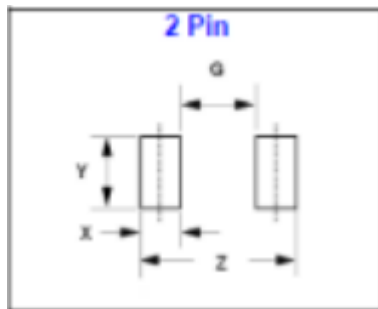
### Ordering Information:

Part Number	Package	Packing	
		Qty.	Carrier
SD1A150A	SMA	5000pcs	13"Reel

### Marking Information:



### Suggested Pad Layout:



Dimensions	Value (In mm)
G	2.9
X	2.3
Y	2.4
Z	7.5

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