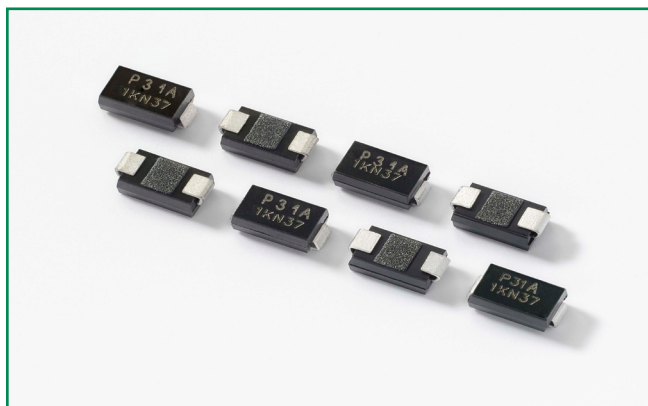




**THE DATASHEET OF
P0080S1ALRP**



SIDACtor® Series - SMA



Agency Approvals

Agency	Agency File Number
	E133083

Applicable Global Standards

- TIA-968-A*
- TIA-968-B*
- ITU K.20/21/45 Enhanced Level*
- ITU K.20/21/45 Basic Level
- GR 1089 Inter-building*
- GR 1089 Intra-building
- IEC 61000-4-5 2nd edition
- YD/T 1082
- YD/T 993
- YD/T 950

* Line impedance required to pass operationally

Electrical Characteristics

Part Number	Marking	V_{DRM}	V_S	I_H	I_S	I_T	V_T	Capacitance	
		@ $I_{DRM}=5\mu A$ V min	@ 100V/ μs V max	mA min	mA max	A max	@ $I_T=2.2$ Amps V max	pF min	pF max
P0080S1ALRP	P-8A	6	25	50	800	2.2	4	25	35
P0220S1ALRP	P22A	15	32	50	800	2.2	4	10	30
P0300S1ALRP	P03A	25	40	50	800	2.2	4	10	30
P0640S1ALRP	P06A	58	77	150	800	2.2	4	10	30
P1800S1ALRP	P18A	170	220	150	800	2.2	4	10	30
P2300S1ALRP	P23A	190	260	150	800	2.2	4	10	30
P2600S1ALRP	P26A	220	300	150	800	2.2	4	10	30
P3100S1ALRP	P31A	275	350	150	800	2.2	4	10	30
P3500S1ALRP	P35A	320	400	150	800	2.2	4	10	30
P0080S1BLRP	P-8B	6	25	50	800	2.2	4	20	35
P0220S1BLRP	P22B	15	32	50	800	2.2	4	10	30
P0300S1BLRP	P03B	25	40	50	800	2.2	4	10	30
P0640S1BLRP	P06B	58	77	120	800	2.2	4	10	30
P1800S1BLRP	P18B	170	220	120	800	2.2	4	10	30
P2300S1BLRP	P23B	190	260	120	800	2.2	4	10	30
P2600S1BLRP	P26B	220	300	120	800	2.2	4	10	30
P3100S1BLRP	P31B	275	350	120	800	2.2	4	10	30
P3500S1BLRP	P35B	320	400	120	800	2.2	4	10	30

Notes:

- Absolute maximum ratings measured at $T_a = 25^\circ C$ (unless otherwise noted).

- Components are bi-directional (unless otherwise noted).

© 2017 Littelfuse, Inc.

Specifications are subject to change without notice.

Revised: 02/23/17

Description

SIDACtor® SMA Thyristors Series are designed to protect baseband equipment such as phones, faxes, modems, line cards, CPE and DSL from damaging overvoltage transients.

The series provides a surface mount solution that enables equipment to comply with global regulatory standards.

Features and Benefits

- Low voltage overshoot
- Low on-state voltage
- Does not degrade surge capability after multiple surge events within limit.
- RoHS Compliant and Halogen-Free
- Fails short circuit when surged in excess of ratings
- Low capacitance
- Pb-free E3 means 2nd level interconnect is Pb-free and the terminal finish material is tin(Sn) (IPC/JEDEC J-STD-609A.01)

Schematic Symbol

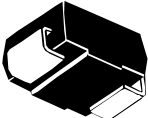


Surge Ratings

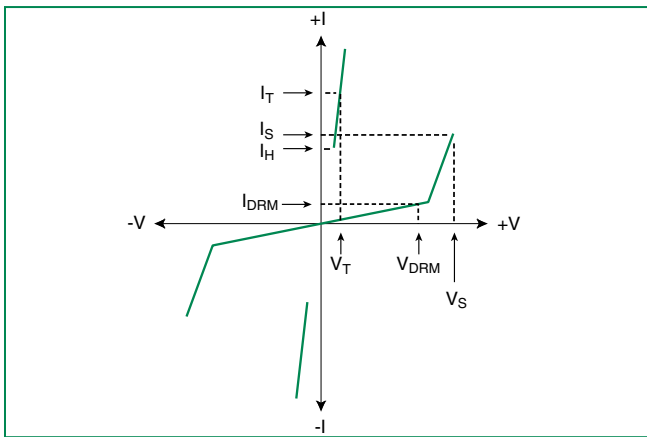
Series	I_{PP}									I_{TSM} 50/60 Hz	di/dt
	0.2/310 ¹	2/10 ¹	8/20 ¹	10/160 ¹	10/560 ¹	5/320 ¹	10/360 ¹	10/1000 ¹	5/310 ¹		
	0.5/700 ²	2/10 ²	1.2/50 ²	10/160 ²	10/560 ²	9/720 ²	10/360 ²	10/1000 ²	10/700 ²		
	A min	A min	A min	A min	A min	A min	A min	A min	A min	A min	Amps/μs max
A	20	150	150	90	50	75	75	50	75	20	500
B	-	250	250	90	60	75	75	55	75	25	500

Notes:
 1 Current waveform in μs - Peak pulse current rating (I_{pp}) is repetitive and guaranteed for the life of the product that remains in thermal equilibrium.
 2 Voltage waveform in μs - I_{pp} ratings applicable over temperature range of -40°C to +85°C
 - The component must initially be in thermal equilibrium with -40°C ≤ T_J ≤ +150°C

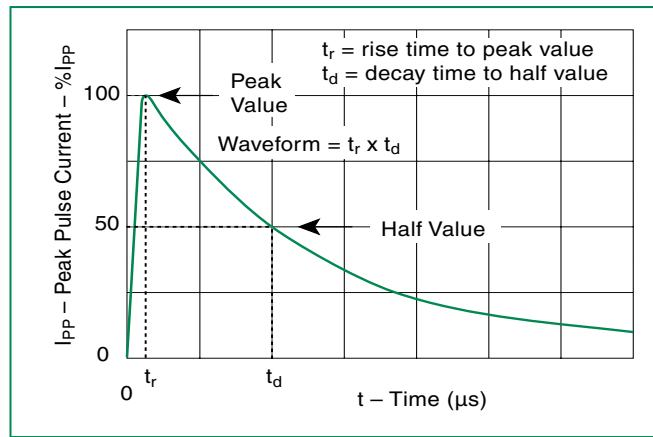
Thermal Considerations

Package	Symbol	Parameter	Value	Unit
 DO-214AC	T_J	Operating Junction Temperature Range	-40 to +150	°C
	T_S	Storage Temperature Range	-65 to +150	°C
	$R_{\theta JA}$	Thermal Resistance: Junction to Ambient	90	°C/W

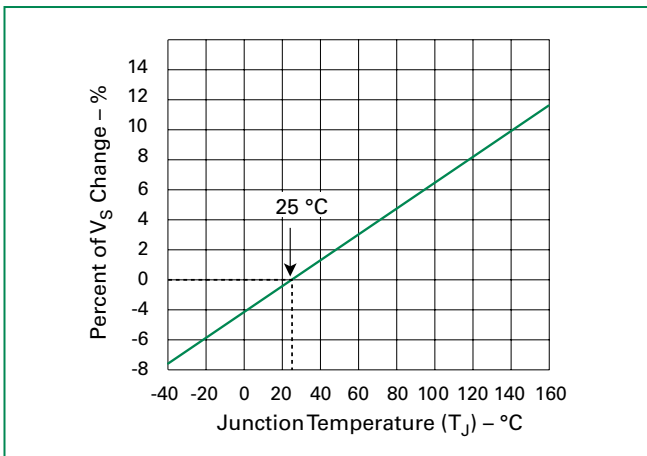
V-I Characteristics



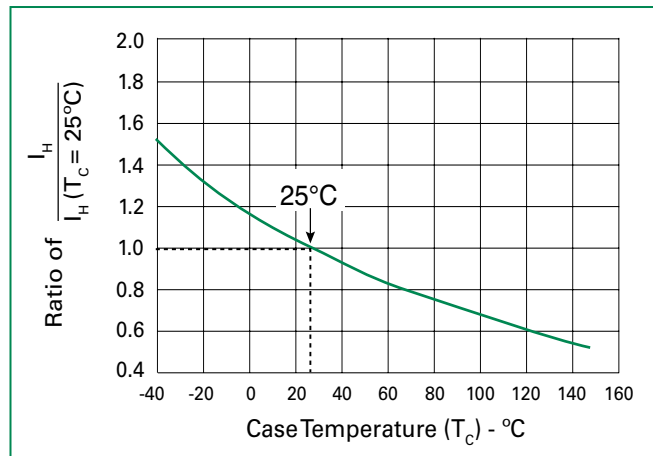
$t_r \times t_d$ Pulse Waveform



Normalized V_S Change vs. Junction Temperature

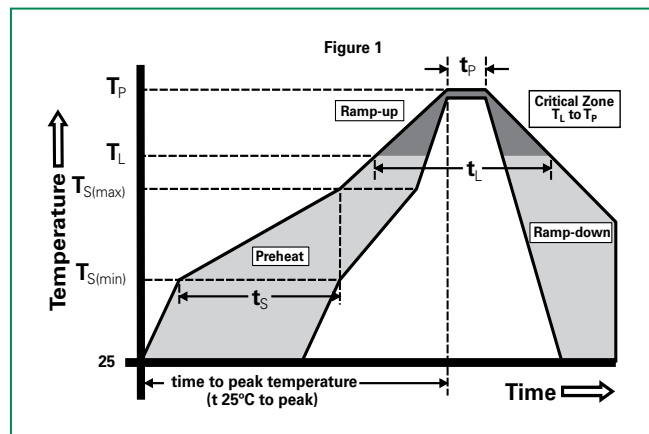


Normalized DC Holding Current vs. Case Temperature



Soldering Parameters

Reflow Condition	Pb-Free assembly (see Fig. 1)	
Pre Heat	- Temperature Min ($T_{s(min)}$)	+150°C
	- Temperature Max ($T_{s(max)}$)	+200°C
	- Time (Min to Max) (t_s)	60-180 secs.
Average ramp up rate (Liquidus Temp (T_L) to peak)	3°C/sec. Max.	
$T_{s(max)}$ to T_L - Ramp-up Rate	3°C/sec. Max.	
Reflow	- Temperature (T_L) (Liquidus)	+217°C
	- Temperature (t_L)	60-150 secs.
Peak Temp (T_p)	+260(+0/-5)°C	
Time within 5°C of actual Peak Temp (t_p)	30 secs. Max.	
Ramp-down Rate	6°C/sec. Max.	
Time 25°C to Peak Temp (T_p)	8 min. Max.	
Do not exceed	+260°C	



Physical Specifications

Lead Material	Copper Alloy
Terminal Finish	100% Matte-Tin Plated
Body Material	UL Recognized epoxy meeting flammability classification V-0

Environmental Specifications

High Temp Voltage Blocking	80% Rated V_{DRM} ($V_{AC, Peak}$) +125°C or +150°C, 504 or 1008 hrs. MIL-STD-750 (Method 1040) JEDEC, JESD22-A-101
Temp Cycling	-65°C to +150°C, 15 min. dwell, 10 up to 100 cycles. MIL-STD-750 (Method 1051) EIA/JEDEC, JESD22-A104
Biased Temp & Humidity	52 V_{DC} (+85°C) 85%RH, 504 up to 1008 hrs. EIA/JEDEC, JESD22-A-101
High Temp Storage	+150°C 1008 hrs. MIL-STD-750 (Method 1031) JEDEC, JESD22-A-101
Low Temp Storage	-65°C, 1008 hrs.
Thermal Shock	0°C to +100°C, 5 min. dwell, 10 sec. transfer, 10 cycles. MIL-STD-750 (Method 1056) JEDEC, JESD22-A-106
Autoclave (Pressure Cooker Test)	+121°C, 100%RH, 2atm, 24 up to 168 hrs. EIA/JEDEC, JESD22-A-102
Resistance to Solder Heat	+260°C, 30 secs. MIL-STD-750 (Method 2031)
Moisture Sensitivity Level	85%RH, +85°C, 168 hrs., 3 reflow cycles (+260°C Peak). JEDEC-J-STD-020, Level 1

Additional Information



Datasheet

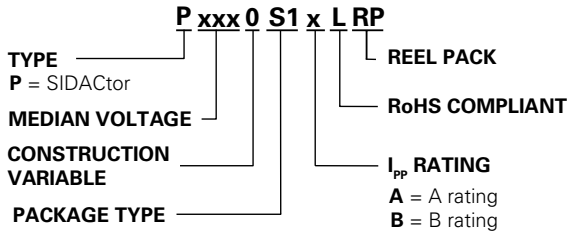


Resources

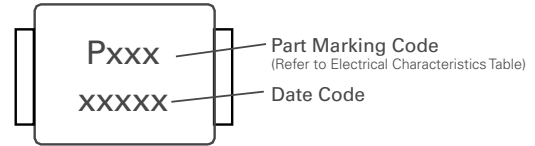


Samples

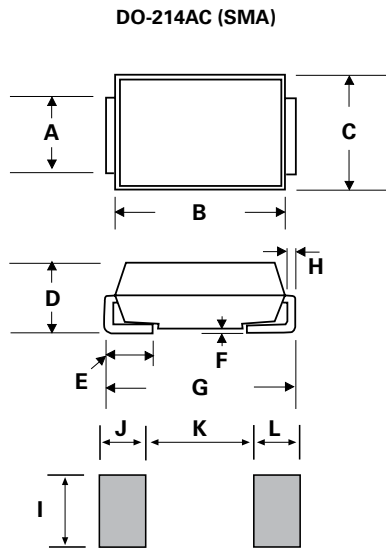
Part Numbering



Part Marking



Dimensions

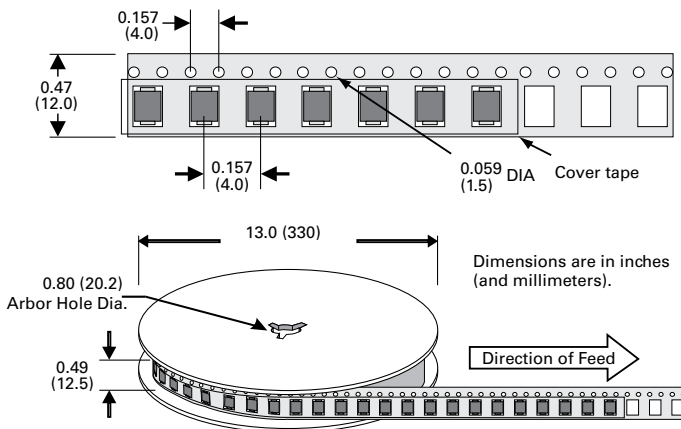


Dimensions	Inches		Millimeters	
	Min	Max	Min	Max
A	0.049	0.065	1.250	1.650
B	0.157	0.177	3.990	4.500
C	0.100	0.110	2.540	2.790
D	0.078	0.090	1.980	2.290
E	0.030	0.060	0.780	1.520
F	-	0.008	-	0.203
G	0.194	0.208	4.930	5.280
H	0.006	0.012	0.152	0.305
I	0.070	-	1.800	-
J	0.082	-	2.100	-
K	-	0.090	-	2.300
L	0.082	-	2.100	-

Packing Options

Package Type	Description	Packing Options Quantity	Added Suffix	Industry Standard
S1	DO-214AC Tape & Reel Pack 12mm/13" tape	5000	RP	EIA-481

Tape and Reel Specification — DO-214AC



Disclaimer Notice - Information furnished is believed to be accurate and reliable. However, users should independently evaluate the suitability of and test each product selected for their own applications. Littelfuse products are not designed for, and may not be used in, all applications. Read complete Disclaimer Notice at www.littelfuse.com/disclaimer-electronics.

Looking for pricing, stock, or lifecycle information?

Click below to explore more details on WIN SOURCE:

 [View P0080S1ALRP on WIN SOURCE](#)

 [Littelfuse Inc. Information](#)

Optimize Your Supply Chain with WIN SOURCE Solutions

-  Global Sourcing Solution
-  Obsolete Management
-  Cost Control Management
-  Shortage Management
-  Alternative Solution
-  Excess Inventory Management