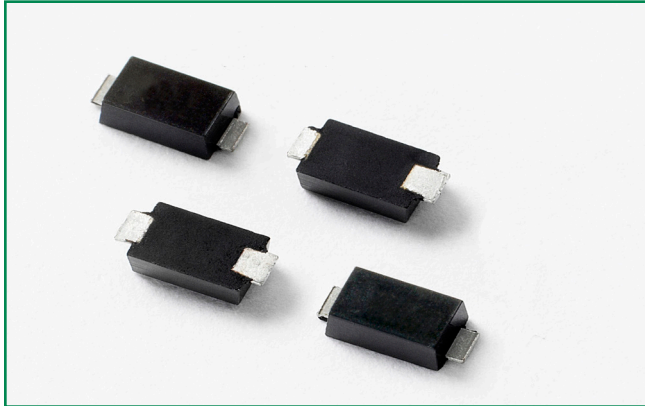


PxxxxS4xLRP Series - SOD-123FL, 100A SIDACtor® Component



Schematic Symbol



Description

The PxxxxS4LRP component series is used to protect equipment such as TV/camera CVBS and/or other low voltage data communication 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 its ratings.
- Fails short circuit when surged in excess of ratings
- Low capacitance
- 4kV 10/700 surge protection capability

Applicable Global Standards

- TIA-968-A*
- TIA-968-B*
- ITU K.20/21 Enhanced Level*
- ITU K.20/21 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} @ $I_{DRM}=5\mu A$	V_S @ 100V/ μs	I_H	I_S	I_T	V_T @ $I_T=2.2$ Amps	Capacitance @ 1MHz, 2V bias	
		V min	V max	mA min	mA max	A max	V max	pF min	pF max
P0080S4BLRP	P-8B	6	25	50	800	2.2	4	15	25

Notes:
- Absolute maximum ratings measured at $T_A=25^\circ C$ (unless otherwise noted).
- Component is bi-directional (unless otherwise noted).

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
B	20	150	150	90	50	75	75	50	100	20	500

Notes:

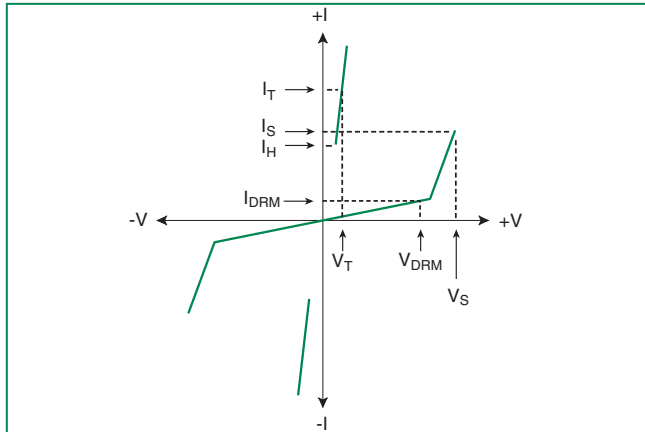
- 1 Current waveform in μs
- 2 Voltage waveform in μs

- Peak pulse current rating (I_{pp}) is repetitive and guaranteed for the life of the product.
- I_{pp} ratings applicable over temperature range of -40°C to +85°C
- The component must initially be in thermal equilibrium with -55°C ≤ T_J ≤ +150°C

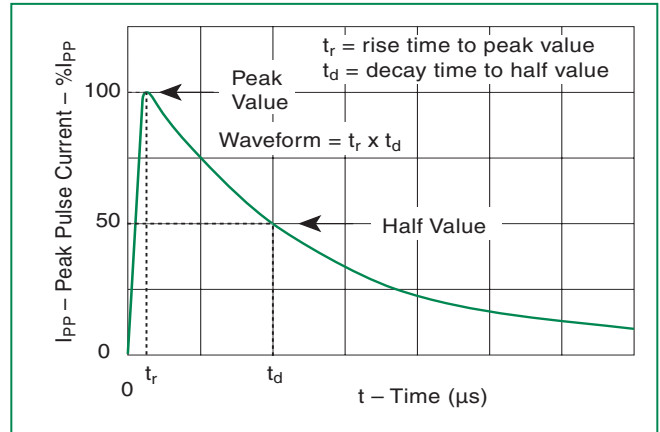
Thermal Considerations

Symbol	Parameter	Value	Unit
T_J	Operating Junction Temperature Range	-55 to +150	°C
T_S	Storage Temperature Range	-55 to +150	°C
$R_{\theta JA}$	Thermal Resistance: Junction to Ambient	90	°C/W

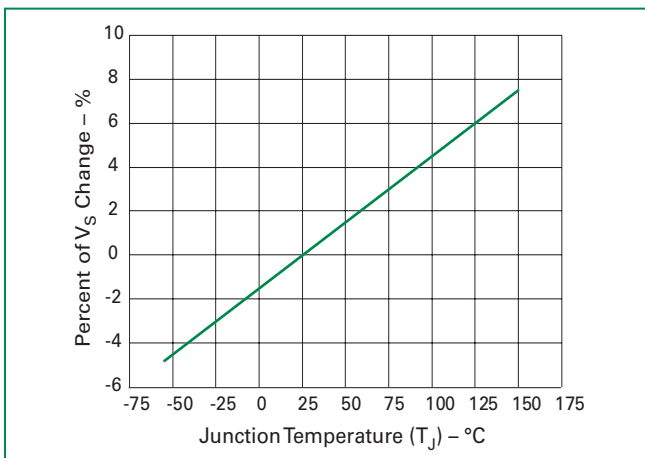
V-I Characteristics



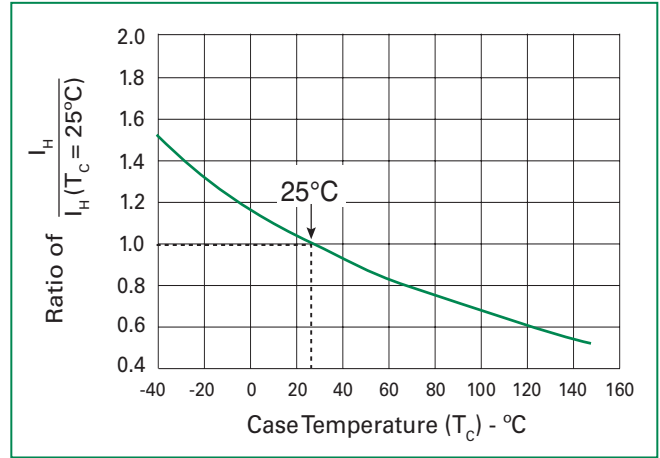
$t_r \times t_d$ Pulse Waveform



Normalized V_S Change vs. Junction Temperature

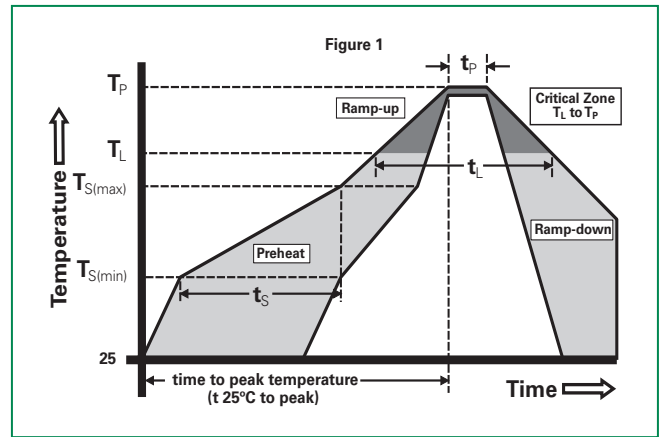


Normalized DC Holding Current vs. Case Temperature



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	



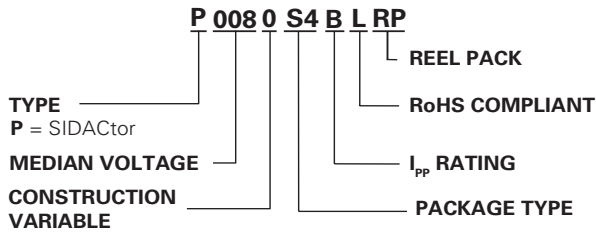
Physical Specifications

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

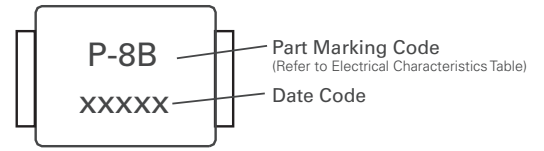
Environmental Specifications

High Temp Voltage Blocking	80% Rated V_{DRM} ($V_{AC Peak}$) T_J , 1008 hrs. MIL-STD-750 (Method 1040) JEDEC, JESD22-A-101
Temp Cycling	1000 cycles. JEDEC, JESD22-A104
Biased Temp & Humidity	52 V_{DC} (+85°C) 85%RH, 1008 hrs. EIA/JEDEC, JESD22-A-101
High Temp Storage	+150°C 1008 hrs. MIL-STD-750 (Method 1031) JEDEC, JESD22-A-101
Autoclave (Pressure Cooker Test)	+121°C, 100%RH, 2atm, 96 hrs. EIA/JEDEC, JESD22-A-102
Resistance to Solder Heat	+260°C, 10 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

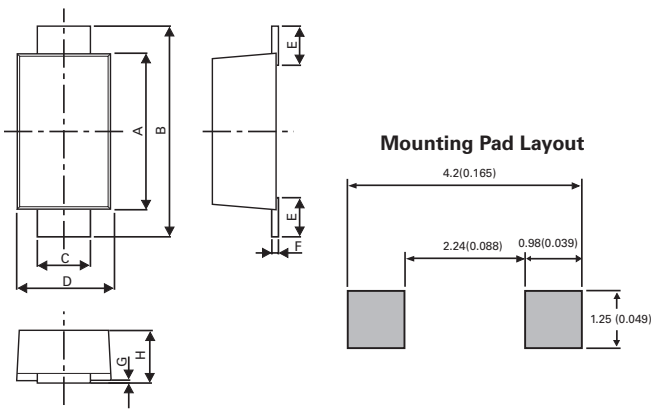
Part Numbering



Part Marking



Dimensions - SOD-123FL Package

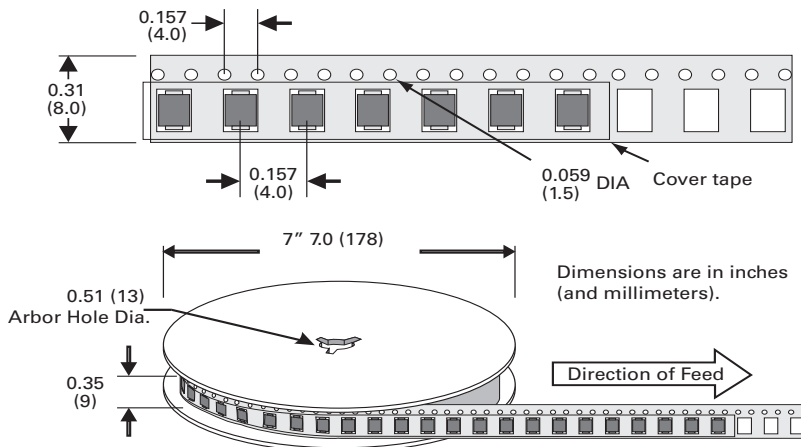


Dimensions	Millimeters		Inches	
	Min	Max	Min	Max
A	2.90	3.10	0.114	0.122
B	3.50	3.90	0.138	0.154
C	0.85	1.05	0.033	0.041
D	1.70	2.00	0.067	0.079
E	0.43	0.83	0.017	0.033
F	0.10	0.25	0.004	0.010
G	0.00	0.10	0.000	0.004
H	0.90	1.08	0.035	0.043

Packing Option

Package Type	Description	Packing Options Quantity	Added Suffix	Industry Standard
S4	SOD-123FL Tape & Reel Pack 8mm/7" tape	3000	RP	EIA-481

Tape and Reel Specification



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