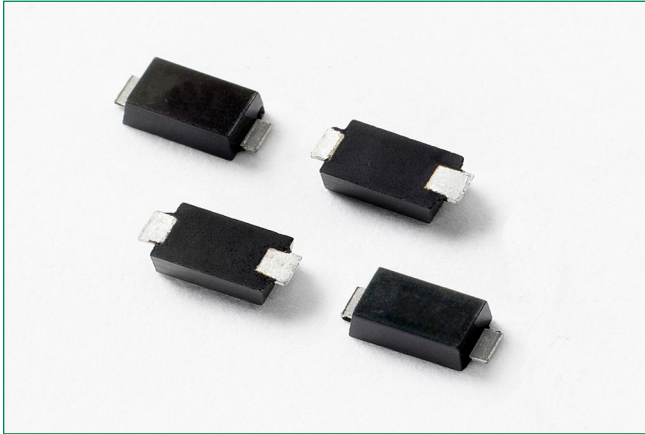


PxxxxS4xLRP Series

SOD-123FL, 100A SIDACtor® Component



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

Schematic Symbol



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
P0220S4BLRP	P02B	15	32	50	800	2.2	4	10	30

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

PxxxxS4xLRP Series

SOD-123FL, 100A SIDACtor® Component

Surge Ratings

Series	I_{PP}										I_{TSM} 50/60 Hz	di/dt Amps/ μ s max
	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	10/700 ²		
	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	10/700 ²		
B	20	200	200	90	60	75	75	55	100	25	500	

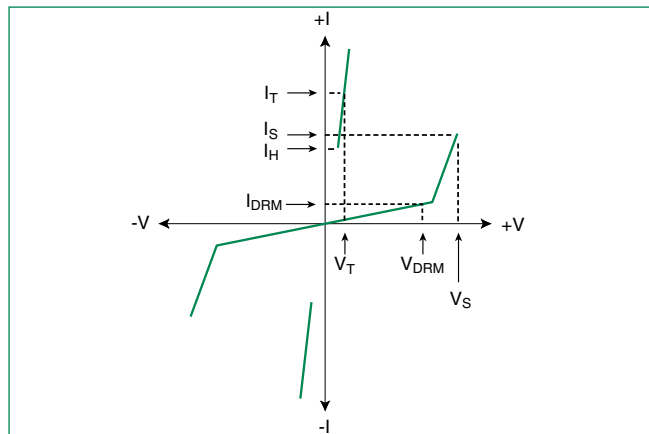
Notes:

- 1 Current waveform in μ s
- 2 Voltage waveform in μ s
- 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 $\leq T_j \leq$ +150°C

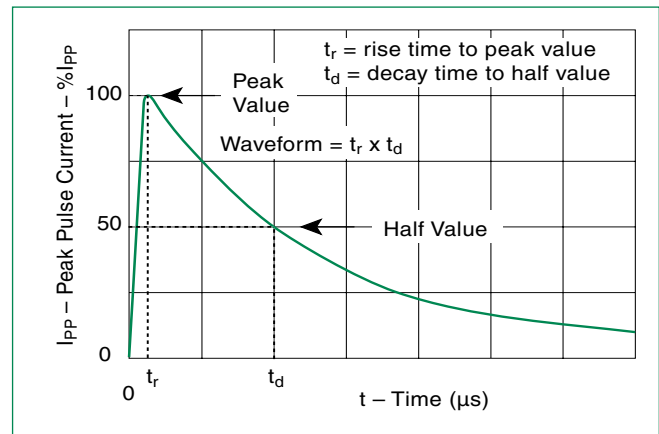
Thermal Considerations

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

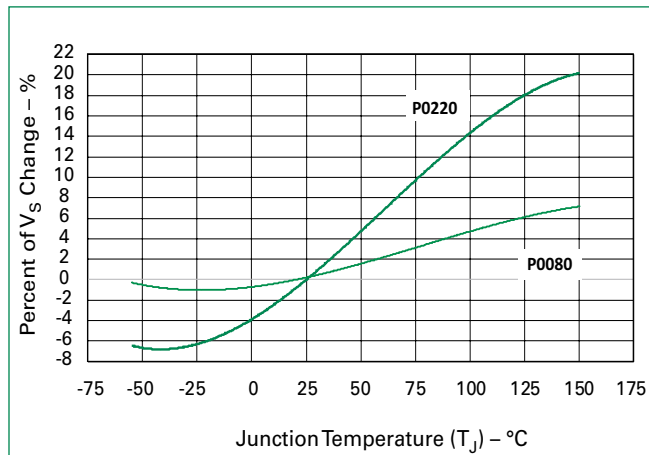
V-I Characteristics



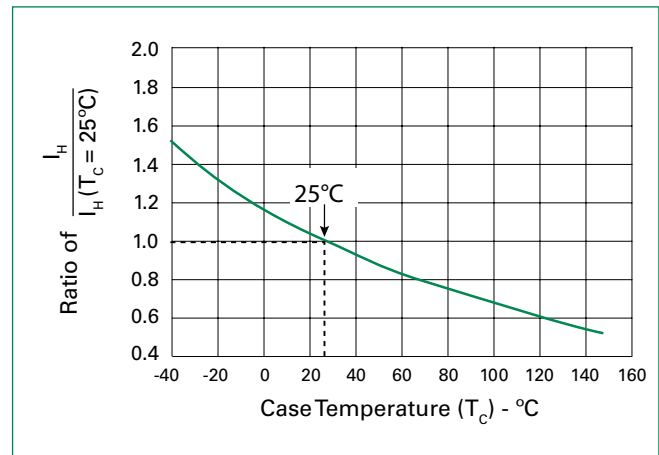
tr x td Pulse Waveform



Normalized VS Change vs. Junction Temperature



Normalized DC Holding Current vs. Case Temperature

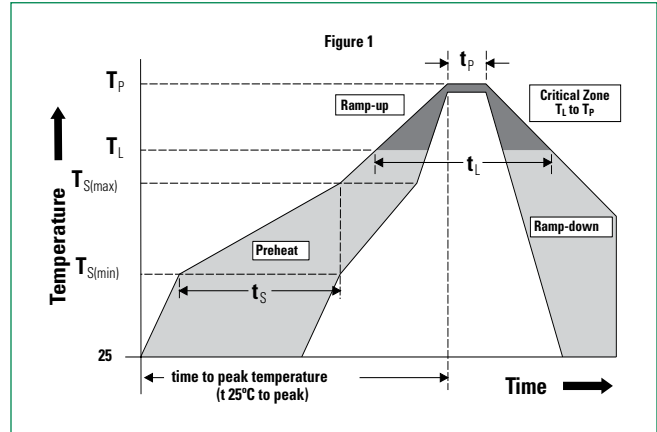


PxxxS4xLRP Series

SOD-123FL, 100A SIDACtor® Component

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)	60-120 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_r)	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



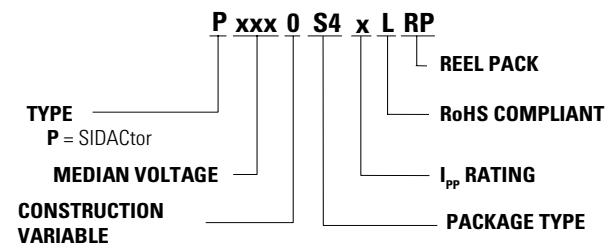
Physical Specifications

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

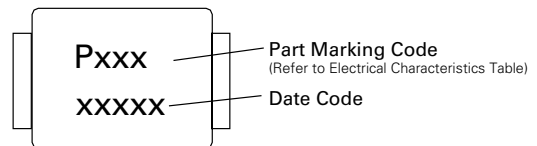
Environmental Specifications

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
UHASt	+130°C, 85%RH, 2atm, 96 hrs. EIA/ JEDEC, JESD22-A-118
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



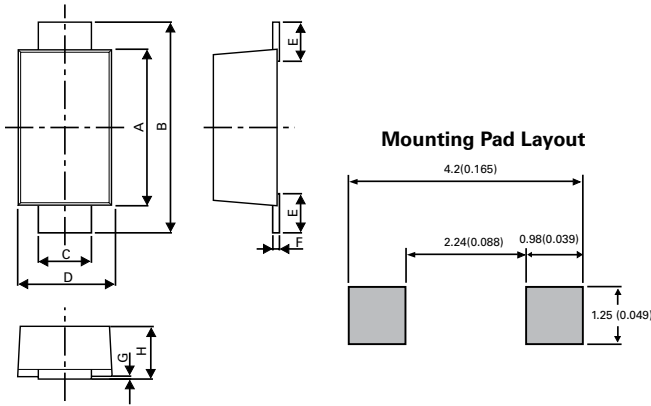
Part Marking



PxxxxS4xLRP Series

SOD-123FL, 100A SIDACtor® Component

Dimensions - SOD-123FL Package

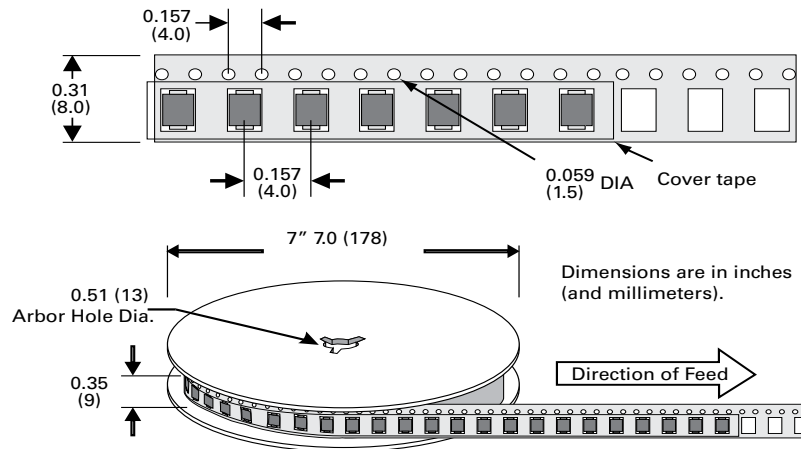


Dimensions	Millimeters		Inches	
	Min	Max	Min	Max
A	2.90	3.10	0.114	0.122
B	3.50	3.90	0.138	0.154
C	0.85	1.05	0.033	0.041
D	1.70	2.00	0.067	0.079
E	0.43	0.83	0.017	0.033
F	0.10	0.25	0.004	0.010
G	0.00	0.10	0.000	0.004
H	0.90	1.08	0.035	0.043

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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