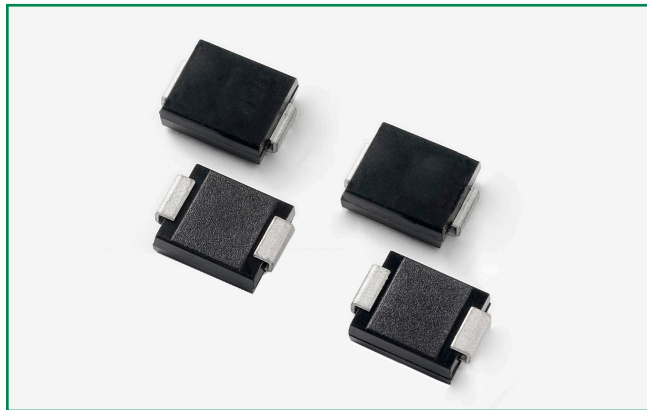


SIDACtor® Series - DO-214AB



**Description**

SIDACtor® Series DO-214AB (Surface Mount) package are designed to protect low data rate interface and outdoor data interface such as RS-232 or RS-423 in industrial market. They provide a surface mount solution that enables equipment to comply with global regulatory standards. The component's switching threshold  $V_s$  and on-state voltage  $V_T$  are much lower than traditional Gas Discharge Tube (GDT) technology.

**Features and Benefits**

- Low voltage overshoot
- Low on-state voltage
- Component properties do not degrade after multiple surge events within its limits
- Fails short circuit when surged in excess of ratings
- Fast response in microseconds
- 2nd level interconnect is Pb-free per IPC/JEDEC J-STD-609A.01

**Applicable Global Standards**

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

**Agency Approvals**

Agency	Agency File Number
	E133083

**Pinout Designation**

Not Applicable

**Schematic Symbol**



**Electrical Characteristics**

Part Number	Marking	$V_{DRM}$ @ $I_{DRM} = 5\mu A$	$V_S$ @ 100V/ $\mu s$	$I_H$	$I_S$	$I_T$	$V_T$ @ $I_T = 2.2A$	Capacitance @ 1MHz, 2V bias	
		V min	V max	mA min	mA max	A max	V max	pf min	pF max
P0080S3NLRP	P-8N	6	25	50	800	2.2	4	80	150
P0300S3NLRP	P03N	30	45	50	800	2.2	4	80	150

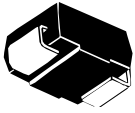
Notes:  
 - Absolute maximum ratings measured at  $T_A = 25^\circ C$  (unless otherwise noted).  
 - Components are bi-directional (unless otherwise noted).

**Surge Ratings**

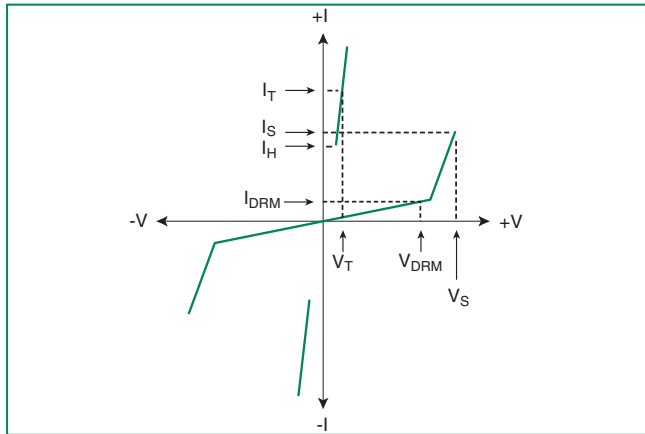
Series	$I_{PP}$	$I_{FSM}$ 50 / 60 Hz	di/dt
	8/20 <sup>1</sup> 1.2/50 <sup>2</sup>		
	A min	A min	A/ $\mu s$ max
N	2500	250	630

Notes:  
 1 Current waveform in  $\mu s$   
 2 Voltage waveform in  $\mu s$   
 - Peak pulse current rating ( $I_{pp}$ ) is repetitive and guaranteed for the life of the product.  
 -  $I_{pp}$  ratings applicable over temperature range of  $-40^\circ C$  to  $+85^\circ C$   
 - The device must initially be in thermal equilibrium with  $-40^\circ C \leq T_J \leq +150^\circ C$

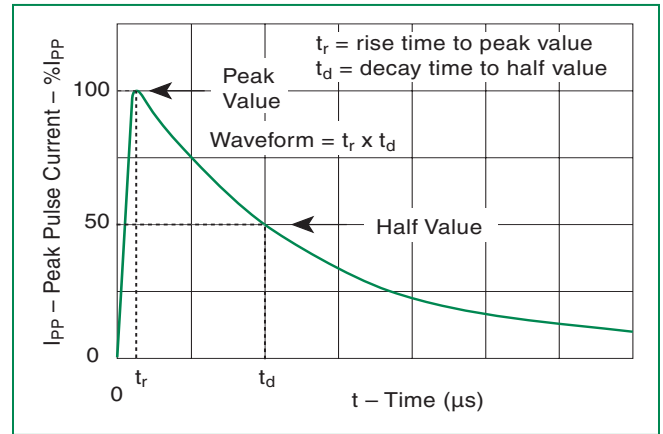
**Thermal Considerations**

Package	Symbol	Parameter	Value	Unit
DO-214AB 	$T_J$	Operating Junction Temperature Range	-65 to +150	°C
	$T_S$	Storage Temperature Range	-65 to +150	°C
	$R_{\theta JA}$	Thermal Resistance: Junction to Ambient	75	°C/W

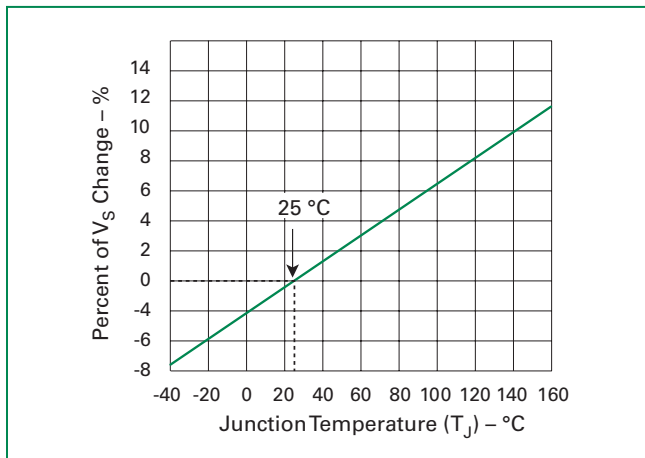
**V-I Characteristics**



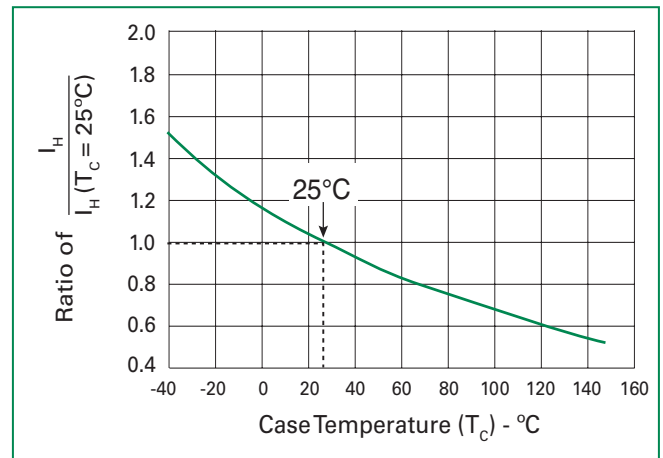
**$t_r \times t_d$  Pulse Waveform**



**Normalized  $V_S$  Change vs. Junction Temperature**

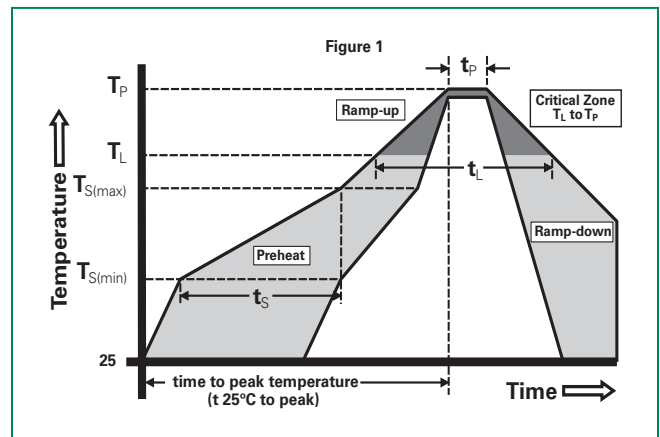


**Normalized DC Holding Current vs. Case Temperature**



**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 (LiquidusTemp ( $T_L$ ) 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 PeakTemp ( $t_p$ )	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	



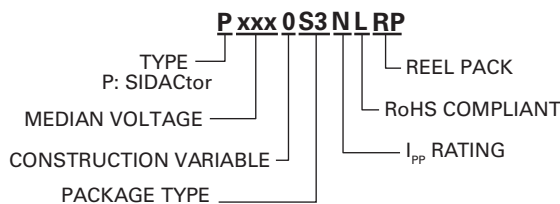
**Physical Specifications**

<b>Lead Material</b>	Copper Alloy
<b>Terminal Finish</b>	100% Matte-Tin Plated
<b>Body Material</b>	UL recognized epoxy meeting flammability classification V-0

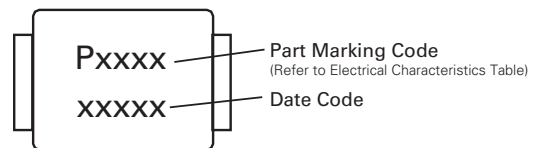
**Environmental Specifications**

<b>High Temp Voltage Blocking</b>	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
<b>Temp Cycling</b>	-65°C to +150°C, 15 min. dwell, 10 up to 100 cycles. MIL-STD-750 (Method 1051) EIA/JEDEC, JESD22-A-104
<b>Biased Temp &amp; Humidity</b>	52 $V_{DC}$ (+85°C) 85%RH, 504 up to 1008 hrs. EIA/JEDEC, JESD22-A-101
<b>High Temp Storage</b>	+150°C 1008 hrs. MIL-STD-750 (Method 1031) JEDEC, JESD22-A-101
<b>Low Temp Storage</b>	-65°C, 1008 hrs.
<b>Thermal Shock</b>	0°C to +100°C, 5 min. dwell, 10 sec. transfer, 10 cycles. MIL-STD-750 (Method 1056) JEDEC, JESD22-A-106
<b>Autoclave (Pressure Cooker Test)</b>	+121°C, 100%RH, 2atm, 24 up to 168 hrs. EIA/JEDEC, JESD22-A-102
<b>Resistance to Solder Heat</b>	+260°C, 30 secs. MIL-STD-750 (Method 2031)
<b>Moisture Sensitivity Level</b>	85%RH, +85°C, 168 hrs., 3 reflow cycles (+260°C Peak). JEDEC-J-STD-020, Level 1

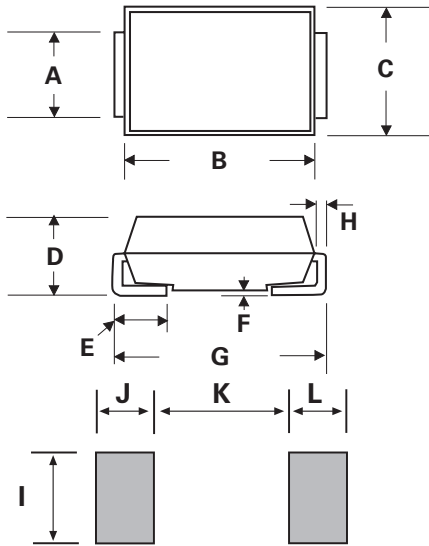
**Part Numbering**



**Part Marking**



**Dimensions — DO-214AB**

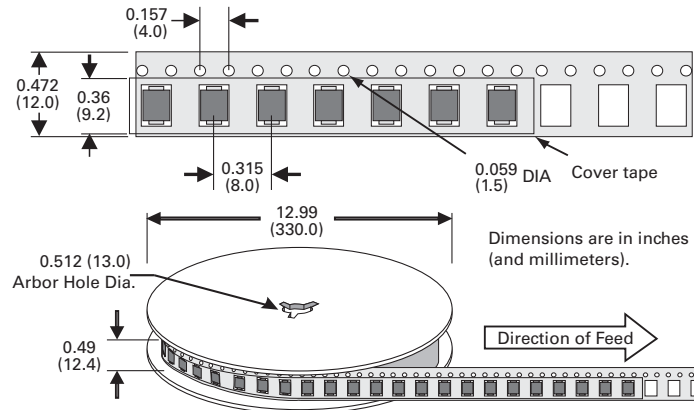


Dimensions	Inches		Millimeters	
	Min	Max	Min	Max
A	0.114	0.126	2.900	3.200
B	0.260	0.280	6.600	7.110
C	0.220	0.245	5.590	6.220
D	0.079	0.103	2.060	2.620
E	0.030	0.060	0.760	1.520
F	-	0.008	-	0.203
G	0.305	0.320	7.750	8.130
H	0.006	0.012	0.152	0.305
I	0.129	-	3.300	-
J	0.094	-	2.400	-
K	-	0.165	-	4.200
L	0.094	-	2.400	-

**Packing Options**

Package Type	Description	Quantity	Added Suffix	Industry Standard
S3	DO-214AB Tape and Reel Pack	3000	RP	EIA-481-D tape and reel specification

**Tape and Reel Specification — DO-214AB**



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