



Chipsmall Limited consists of a professional team with an average of over 10 year of expertise in the distribution of electronic components. Based in Hongkong, we have already established firm and mutual-benefit business relationships with customers from,Europe,America and south Asia,supplying obsolete and hard-to-find components to meet their specific needs.

With the principle of “Quality Parts,Customers Priority,Honest Operation,and Considerate Service”,our business mainly focus on the distribution of electronic components. Line cards we deal with include Microchip,ALPS,ROHM,Xilinx,Pulse,ON,Everlight and Freescale. Main products comprise IC,Modules,Potentiometer,IC Socket,Relay,Connector.Our parts cover such applications as commercial,industrial, and automotives areas.

We are looking forward to setting up business relationship with you and hope to provide you with the best service and solution. Let us make a better world for our industry!



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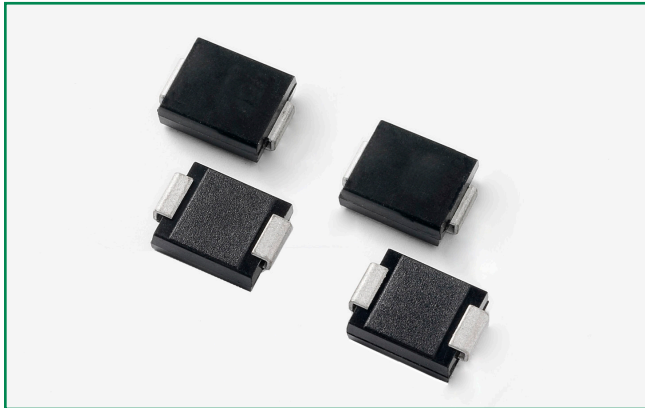
Tel: +86-755-8981 8866 Fax: +86-755-8427 6832

Email & Skype: info@chipsmall.com Web: www.chipsmall.com

Address: A1208, Overseas Decoration Building, #122 Zhenhua RD., Futian, Shenzhen, China



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

Agency Approvals

| Agency | Agency File Number |
|--------|--------------------|
| | E133083 |

Pinout Designation

Not Applicable

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 Intra-building
- IEC 61000-4-5
- YD/T 1082
- YD/T 993
- YD/T 950

Electrical Characteristics

| Part Number | Marking | V_{DRM} @ $I_{DRM} = 5\mu A$ | V_S @ 100V/ μs | I_H | I_S | I_T | V_T @ $I_T = 2.2A$ | 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 |

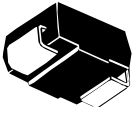
Notes:
 - Absolute maximum ratings measured at $T_A = 25^\circ C$ (unless otherwise noted).
 - Components are bi-directional (unless otherwise noted).

Surge Ratings

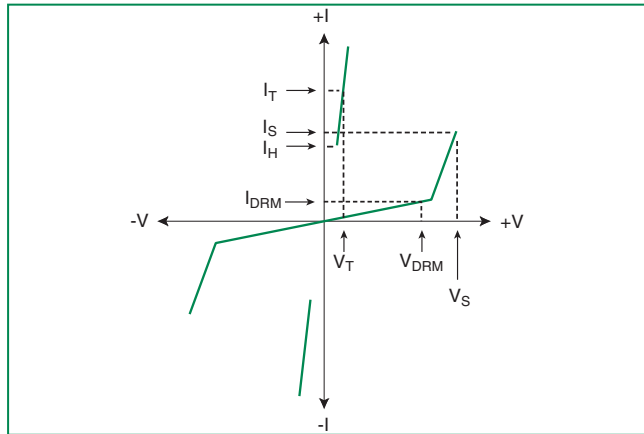
| Series | I_{PP} | I_{FSM} 50 / 60 Hz | di/dt |
|--------|--|-------------------------|----------------|
| | 8/20 ¹ 1.2/50 ² | | |
| | A min | A min | A/ μs max |
| N | 2500 | 250 | 630 |

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 $-40^\circ C$ to $+85^\circ C$
 - The device must initially be in thermal equilibrium with $-40^\circ C \leq T_J \leq +150^\circ C$

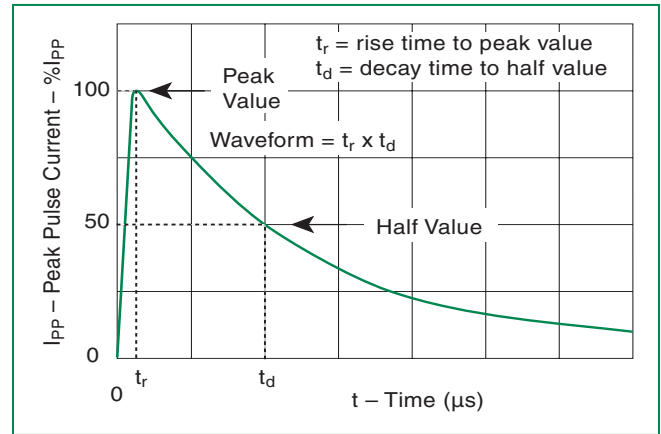
Thermal Considerations

| 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 |

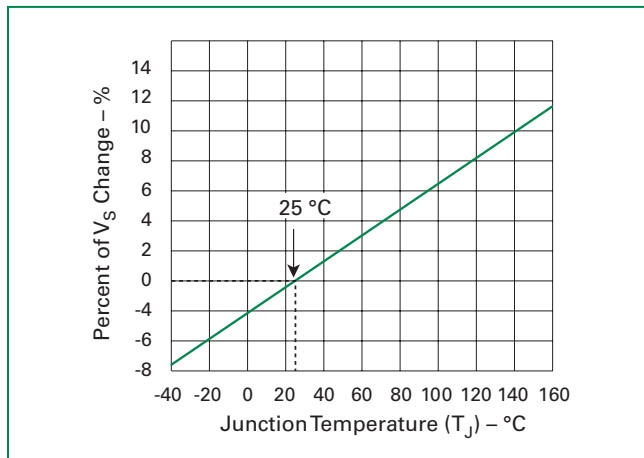
V-I Characteristics



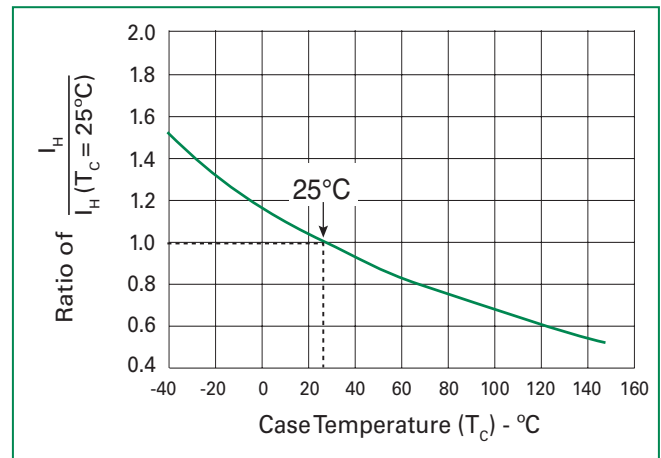
t_r x t_d Pulse Waveform



Normalized V_S Change vs. Junction Temperature

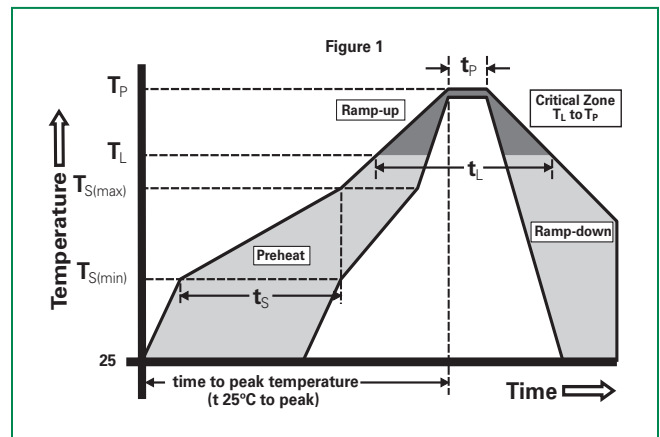


Normalized DC Holding Current vs. Case Temperature



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 | |



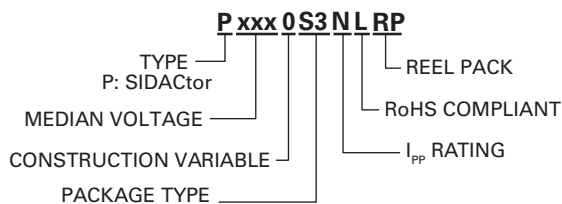
Physical Specifications

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

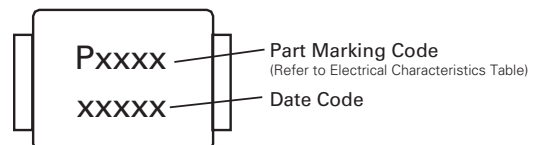
Environmental Specifications

| | |
|---|---|
| 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-A-104 |
| 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 |

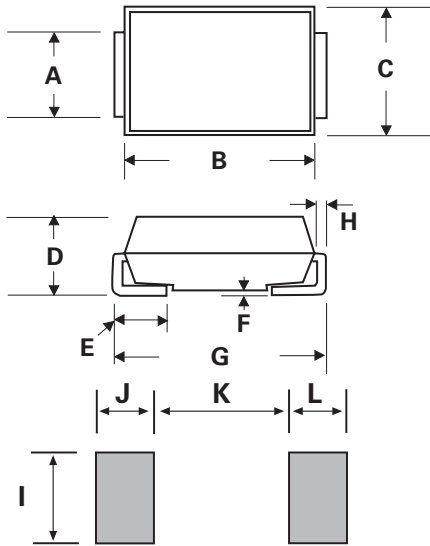
Part Numbering



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

