

Features

- ◆ Bi-directional crowbar transient voltage protection
- ◆ High surge capability
- ◆ High off-state impedance
- ◆ Low leakage current
- ◆ Low on-state voltage
- ◆ Short-circuit failure mode



DO-214AA(SMB)

Main Application

Jinkaisheng's thyristor surge protector devices are designed to help protect sensitive telecommunication equipment from the hazards caused by lightning ,power contact,and power induction. These devices enable equipment to comply with various regulatory requirements including GR 1089,ITU K.20,K.21and K.45,IEC 60950,UL 60950,and TIA-968-A(formerly known as FCC Part 68).

Typical application including:

- Central office switching equipment. Analog and digital linecards(xDSL,T1/E1,ISDN.....)
- Customer Premises Equipment (CPE) such as phones, fax machines, modems, POS terminals, PBX systems and caller ID adjunct boxes.
- Primary protection modules including Main Distribution Frames(MDF),building entrance equipment and station protection modules.
- Access network equipment such as remote terminals,line repeaters,multiplexers,cross-connects,WAN equipment,Network Interface Devices(NID).
- Data lines and security systems.
- CATV line amplifiers and power inserters.
- Sprinkler systems.

Electrcal Parameters (Tamb=25°C)

| Part Number | VDRM | IDRM | VBO | IBO | VT | IT | Co | IH |
|-------------|------|------|------|------|------|------|------|------|
| | Min. | Max. | Max. | Max. | Max. | Max. | Max. | Min. |
| | V | uA | V | mA | V | A | pF | mA |
| P0080SB | 6 | 5 | 25 | 800 | 4 | 2.2 | 75 | 50 |
| P0300SB | 25 | 5 | 40 | 800 | 4 | 2.2 | 75 | 50 |
| P0640SB | 58 | 5 | 77 | 800 | 4 | 2.2 | 65 | 120 |
| P0720SB | 65 | 5 | 88 | 800 | 4 | 2.2 | 65 | 120 |
| P0900SB | 75 | 5 | 98 | 800 | 4 | 2.2 | 60 | 120 |
| P1100SB | 90 | 5 | 130 | 800 | 4 | 2.2 | 60 | 120 |

| Part Number | V _{DRM} | I _{DRM} | V _{BO} | I _{BO} | V _T | I _T | C _o | I _H |
|-------------|------------------|------------------|-----------------|-----------------|----------------|----------------|----------------|----------------|
| | Min. | Max. | Max. | Max. | Max. | Max. | Max. | Min. |
| | V | uA | V | mA | V | A | pF | mA |
| P1300SB | 120 | 5 | 160 | 800 | 4 | 2.2 | 60 | 120 |
| P1500SB | 140 | 5 | 180 | 800 | 4 | 2.2 | 60 | 120 |
| P1800SB | 170 | 5 | 220 | 800 | 4 | 2.2 | 60 | 120 |
| P2000SB | 180 | 5 | 220 | 800 | 4 | 2.2 | 60 | 120 |
| P2300SB | 190 | 5 | 260 | 800 | 4 | 2.2 | 55 | 120 |
| P2600SB | 220 | 5 | 300 | 800 | 4 | 2.2 | 50 | 120 |
| P3100SB | 275 | 5 | 350 | 800 | 4 | 2.2 | 40 | 120 |
| P3500SB | 320 | 5 | 400 | 800 | 4 | 2.2 | 40 | 120 |
| P3800SB | 360 | 5 | 460 | 800 | 4 | 2.2 | 35 | 120 |
| P4200SB | 400 | 5 | 540 | 800 | 4 | 2.2 | 35 | 120 |

Electrical Characteristics

| | | | |
|------------------|--|-----------------|--------------------|
| V _{DRM} | Stand-off voltage, is measured at I _{DRM} | I _H | Holding current. |
| V _{BO} | Breakover voltage, is measured at 100V/μs. | I _{BO} | Breakover current. |
| C _o | Off-state capacitance is measured in V _{DC} =2V@1MHz. | I _T | ON-state current |
| I _{DRM} | Leakage current, is measured at V _{DRM} . | V _T | On-state voltage. |

Part Numbering System

P XXX S B
(A) (B) (C) (D)

(A) Semiconductor Surge Arrester.

(B) Series: 0060, 0300, 0640.....3500, 3800, 4200 etc.

(C) T: Package: DO-214AA(SMB)

(D) Rating Sure Voltage: B: $\geq 4KV(10/700\mu s)$

Electrical Characteristics Curves

Figure1 V-I Characteristics

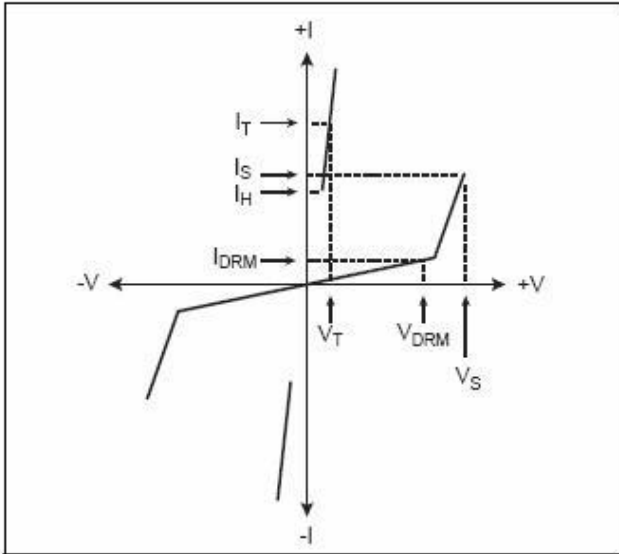


Figure2 tr x td Pulse Wave-form

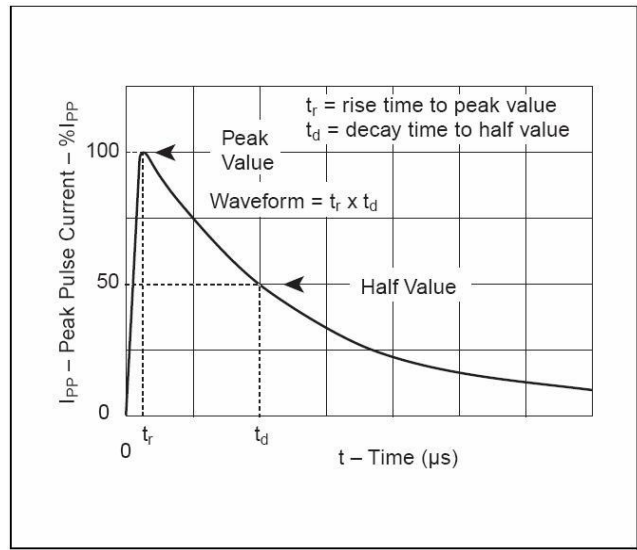


Figure 3 Normalized V_S Change versus Junction Temperature

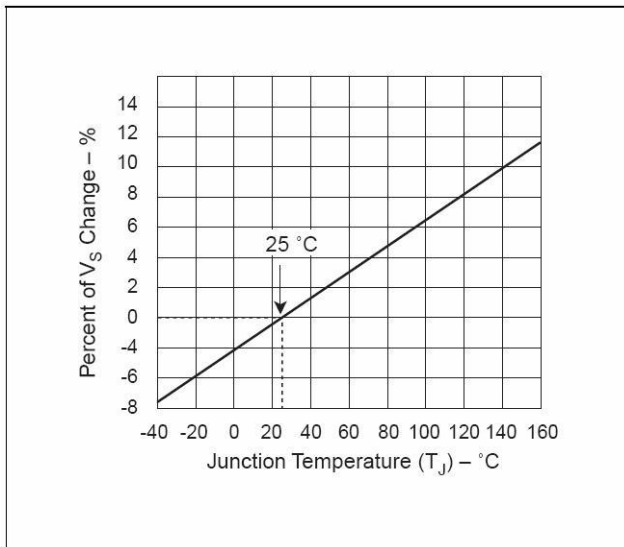
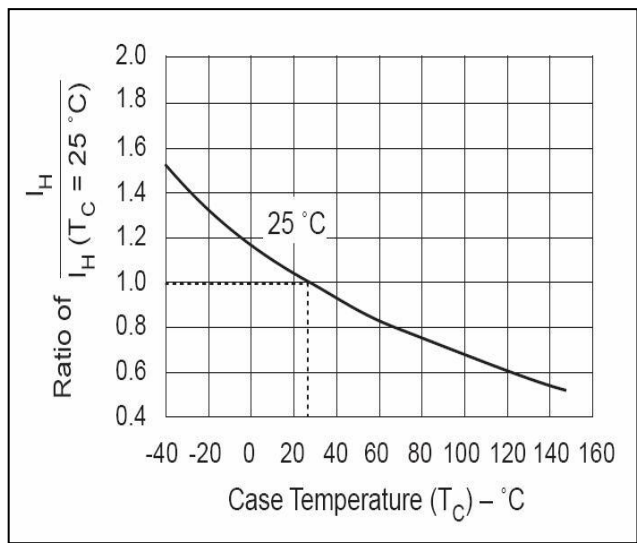



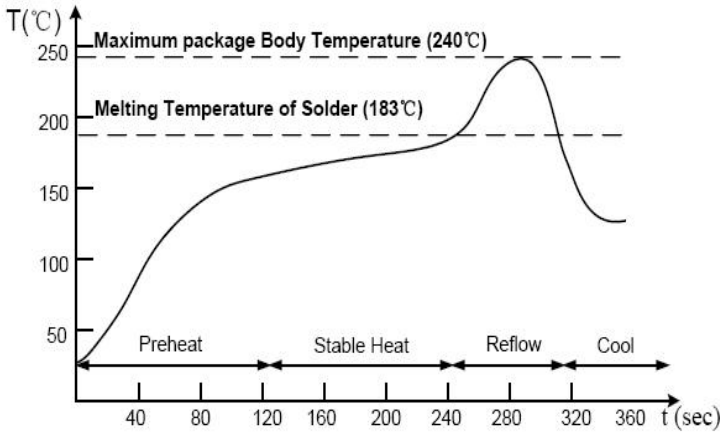
Figure 4 Normalized DC Holding Current



Thermal Considerations

| Package | DO-214AC/SMA | Symbol | Parameter | Value | Unit |
|---|-----------------|--|-------------|-------|------|
|  | T_J | Operating Junction Temperature | -40 to +150 | °C | |
| | T_S | Storage Temperature Range | -40 to +150 | °C | |
| | $R_{\theta JA}$ | Junction to Ambient on printed circuit | 90 | °C/W | |

Solder Reflow Recommendations

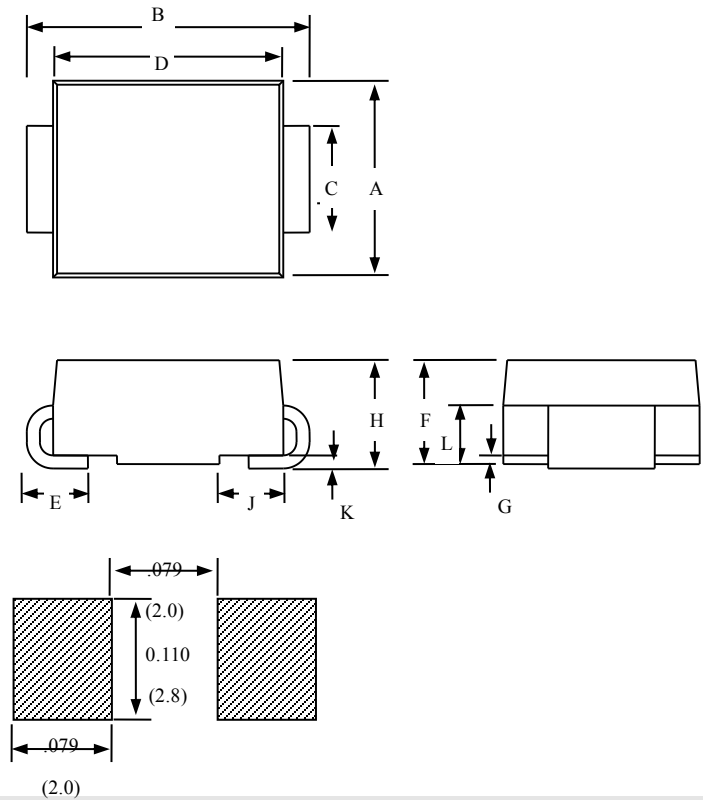


- Recommended reflow methods: IR, vapor phase oven, hot air oven, wave solder.
- The device can be exposed to a maximum temperature of 265°C for 10 seconds.
- Devices can be cleaned using standard industry methods and solvents.


Notes: If reflow temperatures exceed the recommended profile, devices may not meet the performance requirements.

Product Dimensions

| Dimension | Inches | | Millimeters | |
|-----------|--------|-------|-------------|------|
| | MIN | MAX | MIN | MAX |
| A | 0.134 | 0.155 | 3.40 | 3.94 |
| B | 0.205 | 0.22 | 5.21 | 5.59 |
| C | 0.075 | 0.083 | 1.90 | 2.11 |
| D | 0.166 | 0.185 | 4.22 | 4.70 |
| E | 0.036 | 0.056 | 0.91 | 1.42 |
| F | 0.073 | 0.087 | 1.85 | 2.2 |
| G | 0.002 | 0.008 | 0.05 | 0.20 |
| H | 0.077 | 0.094 | 1.95 | 2.40 |
| J | 0.043 | 0.053 | 1.09 | 1.35 |
| K | 0.008 | 0.014 | 0.20 | 0.35 |
| L | 0.039 | 0.049 | 0.99 | 1.24 |



Summary of Packing Options

| Package Type | Description | Packing Quantity | Industry Standard |
|--|----------------------------|------------------|-------------------|
| DO-214AA(SMB)  | Embossed Carrier Reel Pack | 3000PCS | EIA-481-D |