

Transient Voltage Suppressor
Features

- IEC 61000-4-2(ESD) $\pm 15\text{KV}$ (air), $\pm 8\text{KV}$ (contact)
- 3000Watts peak pulse power ($t_p=10/1000 \mu\text{S}$)
- Quick response to surge voltage
- Low clamping voltage
- Moisture sensitivity level: Level 1

Exterior


DO-214AB

Application information

- DC Port
- RS485/232/422
- I/O Port

Agency Approvals

| Icon | Description |
|-------------|------------------------------------|
| RoHS | Compliance with 2011/65/EU |
| HF | Compliance with IEC61249-2-21:2003 |

Schematic symbol


BI-directional



UNI-directional

Part Number and Electrical Parameter

| Part Number | | Marking | | V_R (V) | V_{BR} min.(V) | V_{BR} max.(V) | I_t (mA) | Max $V_C@I_{PP}^{\text{①}}$ (V) | $I_{PP}^{\text{①}}$ (A) | $I_R@V_R$ (μA) |
|--------------|-------------|---------|------|-----------|---------------------|---------------------|---------------|------------------------------------|-------------------------|--------------------------------|
| BI | UNI | BI | UNI | | | | | | | |
| BV-SMDJ5CA | BV-SMDJ5A | D5C | D5 | 5 | 6.4 | 7 | 10 | 9.2 | 326.1 | 800 |
| BV-SMDJ6CA | BV-SMDJ6A | D6C | D6 | 6 | 6.67 | 7.37 | 10 | 10.3 | 291.3 | 800 |
| BV-SMDJ6.5CA | BV-SMDJ6.5A | D6.5C | D6.5 | 6.5 | 7.22 | 7.98 | 10 | 11.2 | 267.9 | 500 |
| BV-SMDJ7CA | BV-SMDJ7A | D7C | D7 | 7 | 7.78 | 8.6 | 10 | 12 | 250.0 | 200 |
| BV-SMDJ7.5CA | BV-SMDJ7.5A | D7.5C | D7.5 | 7.5 | 8.33 | 9.21 | 1 | 12.9 | 232.6 | 100 |
| BV-SMDJ8CA | BV-SMDJ8A | D8C | D8 | 8 | 8.89 | 9.83 | 1 | 13.6 | 220.6 | 50 |
| BV-SMDJ8.5CA | BV-SMDJ8.5A | D8.5C | D8.5 | 8.5 | 9.44 | 10.4 | 1 | 14.4 | 208.3 | 20 |
| BV-SMDJ9CA | BV-SMDJ9A | D9C | D9 | 9 | 10 | 11.1 | 1 | 15.4 | 194.8 | 10 |
| BV-SMDJ10CA | BV-SMDJ10A | D10C | D10 | 10 | 11.1 | 12.3 | 1 | 17 | 176.5 | 5 |
| BV-SMDJ11CA | BV-SMDJ11A | D11C | D11 | 11 | 12.2 | 13.5 | 1 | 18.2 | 164.8 | 2 |
| BV-SMDJ12CA | BV-SMDJ12A | D12C | D12 | 12 | 13.3 | 14.7 | 1 | 19.9 | 150.8 | 1 |
| BV-SMDJ13CA | BV-SMDJ13A | D13C | D13 | 13 | 14.4 | 15.9 | 1 | 21.5 | 139.5 | 1 |

| Part Number | | Marking | | V _R (V) | V _{BR} min.(V) | V _{BR} max.(V) | I _t (mA) | Max V _c @I _{PP} ^① (V) | I _{PP} ^① (A) | I _R @V _R (uA) |
|--------------|-------------|---------|------|--------------------|----------------------------|----------------------------|------------------------|---|----------------------------------|--|
| BI | UNI | BI | UNI | | | | | | | |
| BV-SMDJ14CA | BV-SMDJ14A | D14C | D14 | 14 | 15.6 | 17.2 | 1 | 23.2 | 129.3 | 1 |
| BV-SMDJ15CA | BV-SMDJ15A | D15C | D15 | 15 | 16.7 | 18.5 | 1 | 24.4 | 123.0 | 1 |
| BV-SMDJ16CA | BV-SMDJ16A | D16C | D16 | 16 | 17.8 | 19.7 | 1 | 26 | 115.4 | 1 |
| BV-SMDJ17CA | BV-SMDJ17A | D17C | D17 | 17 | 18.9 | 20.9 | 1 | 27.6 | 108.7 | 1 |
| BV-SMDJ18CA | BV-SMDJ18A | D18C | D18 | 18 | 20 | 22.1 | 1 | 29.2 | 102.7 | 1 |
| BV-SMDJ20CA | BV-SMDJ20A | D20C | D20 | 20 | 22.2 | 24.5 | 1 | 32.4 | 92.6 | 1 |
| BV-SMDJ22CA | BV-SMDJ22A | D22C | D22 | 22 | 24.4 | 26.9 | 1 | 35.5 | 84.5 | 1 |
| BV-SMDJ24CA | BV-SMDJ24A | D24C | D24 | 24 | 26.7 | 29.5 | 1 | 38.9 | 77.1 | 1 |
| BV-SMDJ26CA | BV-SMDJ26A | D26C | D26 | 26 | 28.9 | 31.9 | 1 | 42.1 | 71.3 | 1 |
| BV-SMDJ28CA | BV-SMDJ28A | D28C | D28 | 28 | 31.1 | 34.4 | 1 | 45.4 | 66.1 | 1 |
| BV-SMDJ30CA | BV-SMDJ30A | D30C | D30 | 30 | 33.3 | 36.8 | 1 | 48.4 | 62.0 | 1 |
| BV-SMDJ33CA | BV-SMDJ33A | D33C | D33 | 33 | 36.7 | 40.6 | 1 | 53.3 | 56.3 | 1 |
| BV-SMDJ36CA | BV-SMDJ36A | D36C | D36 | 36 | 40 | 44.2 | 1 | 58.1 | 51.6 | 1 |
| BV-SMDJ40CA | BV-SMDJ40A | D40C | D40 | 40 | 44.4 | 49.1 | 1 | 64.5 | 46.5 | 1 |
| BV-SMDJ43CA | BV-SMDJ43A | D43C | D43 | 43 | 47.8 | 52.8 | 1 | 69.4 | 43.2 | 1 |
| BV-SMDJ45CA | BV-SMDJ45A | D45C | D45 | 45 | 50 | 55.3 | 1 | 72.7 | 41.3 | 1 |
| BV-SMDJ48CA | BV-SMDJ48A | D48C | D48 | 48 | 53.3 | 58.9 | 1 | 77.4 | 38.8 | 1 |
| BV-SMDJ51CA | BV-SMDJ51A | D51C | D51 | 51 | 56.7 | 62.7 | 1 | 82.4 | 36.4 | 1 |
| BV-SMDJ54CA | BV-SMDJ54A | D54C | D54 | 54 | 60 | 66.3 | 1 | 87.1 | 34.4 | 1 |
| BV-SMDJ58CA | BV-SMDJ58A | D58C | D58 | 58 | 64.4 | 71.2 | 1 | 93.6 | 32.1 | 1 |
| BV-SMDJ60CA | BV-SMDJ60A | D60C | D60 | 60 | 66.7 | 73.7 | 1 | 96.8 | 31.0 | 1 |
| BV-SMDJ64CA | BV-SMDJ64A | D64C | D64 | 64 | 71.1 | 78.6 | 1 | 103 | 29.1 | 1 |
| BV-SMDJ70CA | BV-SMDJ70A | D70C | D70 | 70 | 77.8 | 86 | 1 | 113 | 26.5 | 1 |
| BV-SMDJ75CA | BV-SMDJ75A | D75C | D75 | 75 | 83.3 | 92.1 | 1 | 121 | 24.8 | 1 |
| BV-SMDJ78CA | BV-SMDJ78A | D78C | D78 | 78 | 86.7 | 95.8 | 1 | 126 | 23.8 | 1 |
| BV-SMDJ85CA | BV-SMDJ85A | D85C | D85 | 85 | 94.4 | 104 | 1 | 137 | 21.9 | 1 |
| BV-SMDJ90CA | BV-SMDJ90A | D90C | D90 | 90 | 100 | 111 | 1 | 146 | 20.5 | 1 |
| BV-SMDJ100CA | BV-SMDJ100A | D100C | D100 | 100 | 111 | 123 | 1 | 162 | 18.5 | 1 |
| BV-SMDJ110CA | BV-SMDJ110A | D110C | D110 | 110 | 122 | 135 | 1 | 177 | 16.9 | 1 |

Note: absolute maximum ratings measured at T= 25°C RH = 45%-75% (unless otherwise noted).

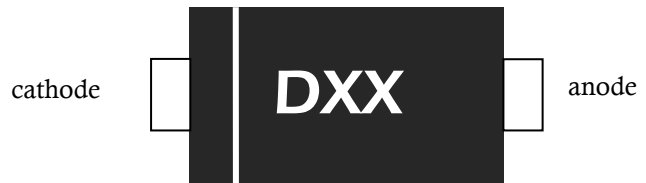
① Surge Waveform: 10/1000 μ S

Transient Voltage Suppressor

Mark



BI:DXXC



UNI:DXX

Part Number System

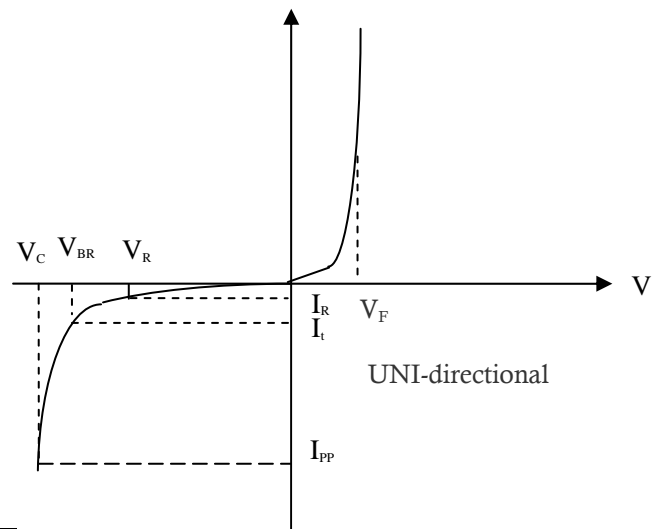
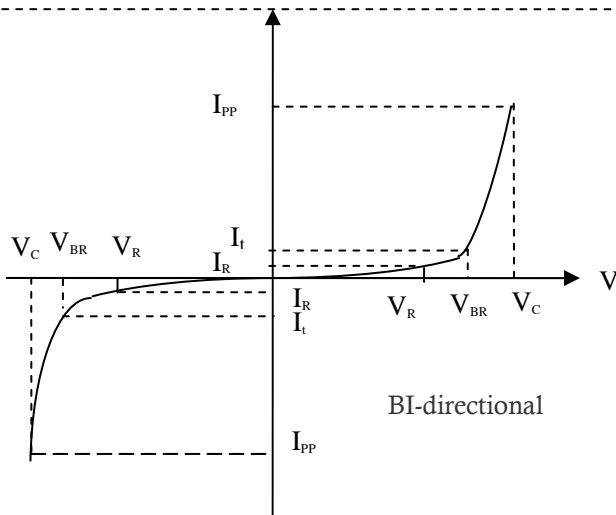
BV SMDJ XX C A
(1) (2) (3) (4) (5)

(1) Bencent Transient Voltage Suppressor (2) Series Code

(3) $V_R=XXV$ (4) BI-directional

(5) Suffix 'A' denotes 5% tolerance devices

V-I Curve



| Parameters | Definition |
|------------|--|
| V_F | Forward Voltage drop for UNI-directional |
| V_C | Clamping Voltage |
| I_{pp} | Surge Waveform 10/1000 μs |
| V_R | Stand-off Voltage |
| V_{BR} | Breakdown Voltage |
| I_R | Reverse Leakage Current |
| I_t | Test Current |
| P_{pp} | Peak Pulse Power Dissipation |

Transient Voltage Suppressor

Thermal Considerations

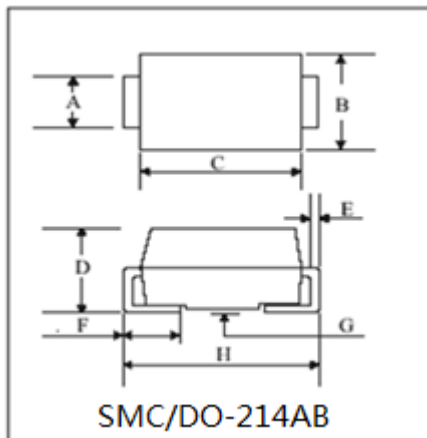
| symbol | Parameter | Value | Unit |
|--------|--------------------------------------|-------------|------|
| T_J | Operating Junction Temperature Range | -55 to +150 | °C |
| T_S | Storage Temperature Range | -55 to +150 | °C |

Environmental Characteristics

| Testing items | Technical standards |
|---------------------------------------|---|
| High Temperature Reverse Bias Test | Temperature: $150 \pm 3^\circ\text{C}$ Bias=80% V_R Time:168H |
| High Temperature Life Test | Temperature: 150°C Time:168H |
| High-low Temperature Cycle Test | Temperature: From -40°C to 125°C Dwell time : 30min,10cycles |
| High Temperature & High Humidity Test | Temperature: 85°C Humidity:85% Time:168H |
| Pressure Cooker Test | Temperature: 121°C , 2atm. Humidity:100% Time:24H |
| Resistance of Soldering Heat | Temperature: $260 \pm 5^\circ\text{C}$ Time of dip soldering: 10s, 3times |

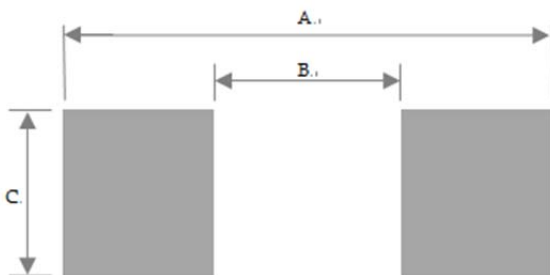
Note: The above testing items can be specified by customer's special request

Product Dimensions



| REF | mm | inch |
|-----|------------|--------------|
| A | 2.85--3.05 | 0.112--0.120 |
| B | 5.85--6.15 | 0.230--0.242 |
| C | 6.75--7.05 | 0.266--0.278 |
| D | 2.45--2.95 | 0.096--0.116 |
| E | 0.15--0.25 | 0.006--0.012 |
| F | 0.90--1.60 | 0.035--0.063 |
| G | 0.00--0.40 | 0.000--0.016 |
| H | 7.75--8.25 | 0.305--0.325 |

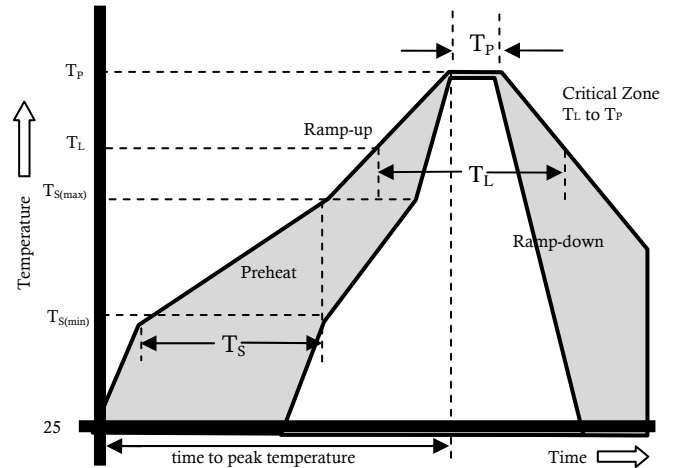
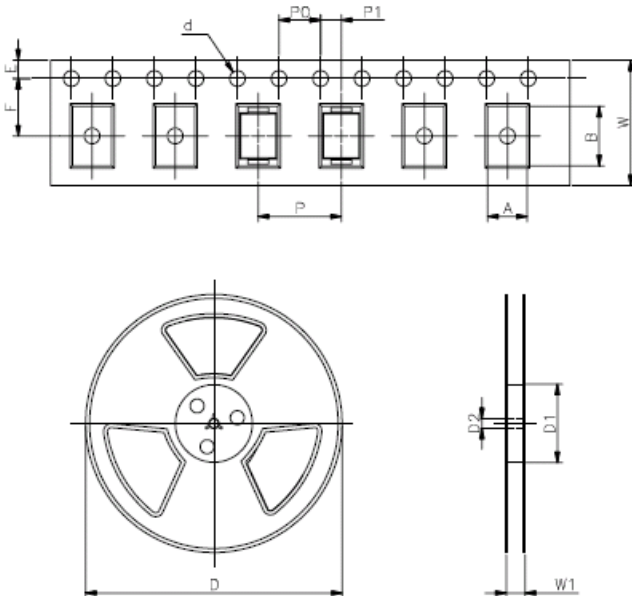
Recommended Soldering Pad



| REF | mm | inch |
|-----|------|-------|
| A | 8.25 | 0.325 |
| B | 5.05 | 0.199 |
| C | 3.05 | 0.12 |

Transient Voltage Suppressor
Reflow Profile

| Reflow Condition | | Pb-Free assembly |
|--|--|------------------|
| Pre Heat | Temperature Min | 150°C |
| | Temperature Max | 200°C |
| | Time (min to max) | 60 – 180 secs |
| Average ramp up rate (Liquidus) T _{amp} (T _L) to peak | | 3°C/s max |
| T _S (max) to T _L - Ramp-up Rate | | 3°C/s max |
| Reflow | - Temperature (T _L) (Liquidus) | 217°C |
| | - Temperature (T _L) | 60 – 150 secs |
| Peak Temperature (T _P) | | 260+0/-5 °C |
| Time within 5°C of actual peak Temperature (T _P) | | 30secs |
| Ramp-down Rate | | 6°C/s max |
| Time 25°C to peak Temperature (T _P) | | 8 min max. |
| Do not exceed | | 260°C |


Package Reel Information


| REF. | mm | inch |
|------|------------|---------------|
| A | 6.15+/-0.1 | 0.242+/-0.004 |
| B | 8.2+/-0.1 | 0.323+/-0.004 |
| d | 1.5+/-0.05 | 0.059+/-0.002 |
| D | 330.0 | 13.0 |
| D1 | 72+/-3 | 2.835+/-0.118 |
| D2 | 13+/-0.3 | 0.512+/-0.012 |
| E | 1.75+/-0.1 | 0.069+/-0.004 |
| F | 5.5+/-0.05 | 0.212+/-0.002 |
| P | 8.0+/-0.1 | 0.315+/-0.004 |
| P0 | 4.0+/-0.1 | 0.157+/-0.004 |
| P1 | 2.0+/-0.05 | 0.079+/-0.004 |
| W | 16+/-0.1 | 0.630+/-0.004 |
| W1 | 22+/-2.0 | 0.866+/-0.079 |

| Outline | Reel (pcs) | Per Carton (pcs) | Reel Diameters (mm) | Carton Size(mm) | | |
|---------|------------|------------------|---------------------|-----------------|-----|-----|
| | | | | L | W | H |
| Taping | 3,000 | 24,000 | 330 | 360 | 360 | 380 |

单击下面可查看定价，库存，交付和生命周期等信息

[>>Bencent \(槟城\)](#)