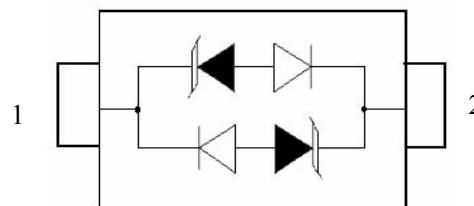


Transient Voltage Suppressor

Features

- IEC 61000-4-2(ESD)±15KV(air), ±8KV(contact)
- 350Watts peak pulse power (tp=8/20μS)
- low capacitance: 3pF maximum
- Low clamping voltage
- Moisture sensitivity level: level 1
- Weight 5.0 mg
- Small package:SOD323

Exterior




SOD323

Application information

- Ethernet

Agency Approvals

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

Part Number and Electrical Parameter

| Part Number | I _{DRM} @ V _{DRM} | | V _{BR} ^① @ I _R | | V _c @I _{pp} ^② | | V _c @I _{pp} ^② | | Co ^③ |
|-------------|-------------------------------------|---|---|----|--|---|--|----|-----------------|
| | μA | V | V | mA | V | A | V | A | pF |
| | MAX | | MIN | | MAX | | MAX | | MAX |
| BV03CL | 5 | 3 | 4 | 1 | 7 | 1 | 15 | 17 | 3 |

Absolute maximum ratings measured at T_A= 25°C RH = 45%-75% (unless otherwise noted).

① V_{BR}is measured at I_R=1mA

②Surge Waveform: 8/20 μ S.

③Off-state capacitance is measured in V_{DC}=0V, V_{RMS}=1V,f=1MHz

Part Numbering System

BV 03 CL
(1) (2) (3)

(1) Bencent Transient Voltage Suppressor

(2) Series:03 etc.

(3)Bi-directional TVS

Mark

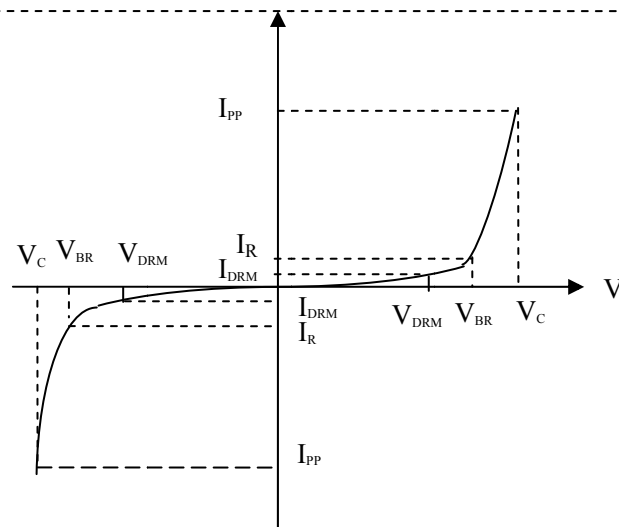


L3: Part Number

Transient Voltage Suppressor

V-I Curve

| Parameters | Definition |
|------------|------------------------------|
| V_C | Clamping Voltage |
| I_{PP} | Surge Waveform 8/20 μ s |
| V_{DRM} | Stand-off Voltage |
| V_{BR} | Breakdown Voltage |
| I_{DRM} | Reverse Leakage Current |
| I_R | Test Current |
| P_{pp} | Peak Pulse Power Dissipation |


Thermal Considerations

| symbol | Parameter | Value | Unit |
|--------|--------------------------------------|-------------|--------------|
| T_J | Operating Junction Temperature Range | -40 to +150 | $^{\circ}$ C |
| T_S | Storage Temperature Range | -40to +150 | $^{\circ}$ C |

Environmental Characteristics

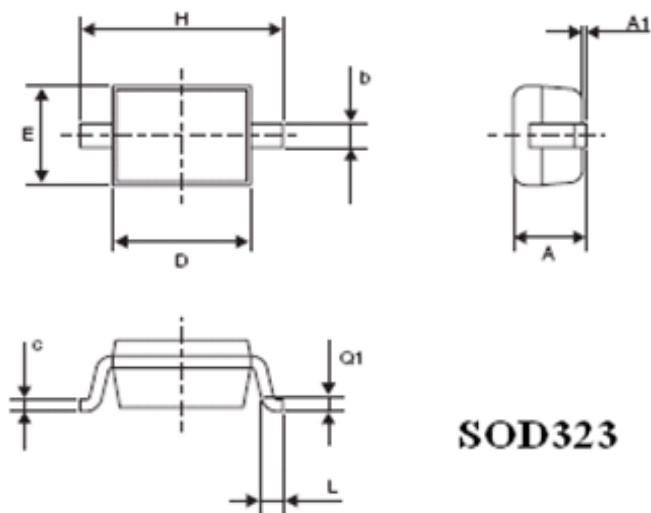
| Testing Items | Technical Standards |
|--------------------------------------|--|
| High Temperature Reverse Bias Test | Temperature: 150 \pm 3 $^{\circ}$ C, Bias=80% V_{DRM} Time:168H |
| High Temperature Life Test | Temperature: 150 $^{\circ}$ C Time:168H |
| High-low Temperature Cycle Test | Temperature:From -40 $^{\circ}$ C to125 $^{\circ}$ C Dwell time: 30min, 10-100 cycles |
| High Temperature &High Humidity Test | Temperature: 85 $^{\circ}$ C Humidity:85% Test time:168H |
| Pressure Cooker Test | Temperature: 121 $^{\circ}$ C, 2atm. Humidity:100% Test time: 24H to 168H |
| Resistance of Soldering Heat | Temperature: 260 \pm 5 $^{\circ}$ C Time of dip soldering: 10s, 3times |

Note:The above testing items can be specified by customers by contacting Bencent service

Transient Voltage Suppressor

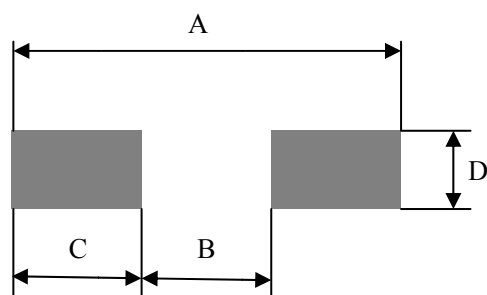
Version: A0 2014-02-17

Product Dimensions



| REF | mm | inch |
|-----|-----------|--------------|
| A | 1.17(max) | 0.046(max) |
| A1 | 0.1(max) | 0.004(max) |
| b | 0.3±0.1 | 0.012±0.004 |
| c | 0.17±0.08 | 0.007±0.0032 |
| D | 1.7±0.11 | 0.065±0.0055 |
| E | 1.3±0.1 | 0.050±0.0066 |
| H | 2.5±0.2 | 0.098±0.0079 |
| L | 0.28±0.18 | 0.011±0.0071 |
| Q1 | 0.25±0.15 | 0.010±0.0059 |

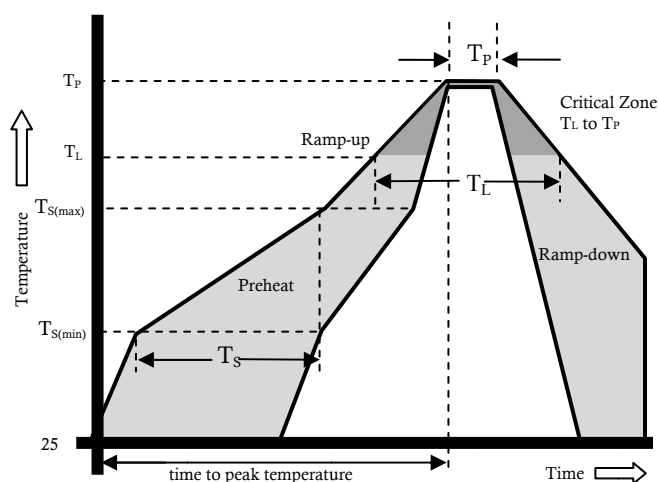
Recommended Soldering Pad



| REF | mm | inch |
|-----|------|-------|
| A | 3.20 | 0.126 |
| B | 1.08 | 0.043 |
| C | 1.06 | 0.042 |
| D | 0.54 | 0.021 |

Reflow Profile

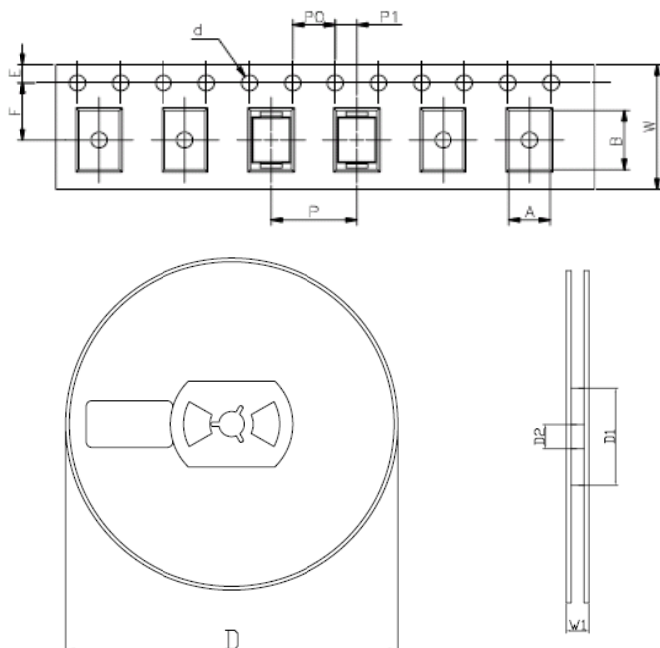
| Reflow Condition | | Pb-Free Assembly |
|--|------------------------------------|------------------|
| Pre Heat | Temperature Min. | +150°C |
| | Temperature Max. | +200°C |
| | Time(Min to Max) | 60 – 180 secs. |
| Average ramp up rate(Liquidus Temp(T_L) to peak) | | 3°C/sec. Max. |
| Ts(max) to T_L - 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 Peak Temp (T_P) | | 8 – 15 secs. |
| Ramp-down Rate | | 6°C/sec. Max. |
| Time 25°C to peak Temp (T_P) | | 8 min. Max. |
| Do not exceed | | +260°C |



Transient Voltage Suppressor

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Package Reel Information



| REF | mm | inch |
|-----|------------|---------------|
| A | 1.46+/-0.1 | 0.057+/-0.004 |
| B | 2.9+/-0.1 | 0.114+/-0.004 |
| d | 1.25+/-0.1 | 0.049+/-0.004 |
| D | 178+/-1.0 | 7.01+/-0.039 |
| D1 | 55+/-3 | 2.165+/-0.118 |
| D2 | 13+/-0.5 | 0.512+/-0.020 |
| E | 1.75+/-0.1 | 0.069+/-0.004 |
| F | 3.5+/-0.2 | 0.138+/-0.008 |
| P | 4.0+/-0.2 | 0.158+/-0.008 |
| P0 | 4.0+/-0.2 | 0.158+/-0.008 |
| P1 | 2.0+/-0.2 | 0.079+/-0.008 |
| W | 8.0+/-0.2 | 0.315+/-0.008 |
| W1 | 14.4+/-0.5 | 0.567+/-0.020 |

| Outline | Reel (pcs) | Per Carton (pcs) | Reel Diameters (mm) | Carton Size(mm) | | |
|---------|------------|------------------|---------------------|-----------------|-----|-----|
| | | | | L | W | H |
| Taping | 3,000 | 90,000 | 177 | 390 | 370 | 220 |