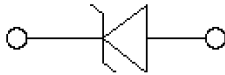
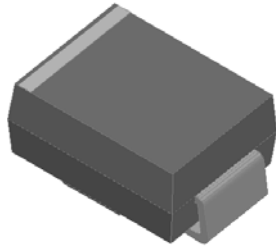
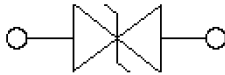
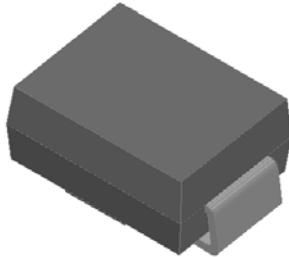


Surface Mount Transient Voltage Suppressors

Uni-directional



Bi-directional



Features

- For surface mounted applications
- Low-profile package
- Ideal for automated placement
- Available in Unidirectional and Bidirectional
- 1000 W peak pulse power capability with a 10/1000 μ s waveform
- Low incremental surge resistance, excellent clamping capability
- Very fast response time
- High temperature soldering guaranteed: 260 °C/10 s at terminals
- Meets MSL level 1
- Component in accordance to RoHS

Typical Applications

Use in sensitive electronics protection against voltage transients induced by inductive load switching and lighting on ICs, MOSFET, signal lines of sensor units for consumer, computer, industrial, telecommunication.

Mechanical Data

- **Package:** DO-214AA (SMB)
Molding compound meets UL 94 V-0 flammability rating, RoHS-compliant, halogen-free
- **Terminals:** Matte tin plated leads, solderable per J-STD-002B and JESD22-B102D
- **Polarity:** For uni-directional types the band denotes cathode end, no marking on bi-directional types

■Maximum Ratings ($T_a=25^\circ\text{C}$ Unless otherwise specified)

| PARAMETER | SYMBOL | UNIT | Max |
|---------------------------------------------------------------------------------------------|----------------|------------------|----------------|
| Peak power dissipation, with a 10/1000us waveform ⁽¹⁾ ⁽²⁾ (Fig.1) | P_{PPM} | W | 1000 |
| Peak pulse current, with a 10/1000us waveform ⁽¹⁾ | I_{PPM} | A | See Next Table |
| Power dissipation, on infinite heat sink at $T_L=75^\circ\text{C}$ | P_D | W | 5.0 |
| Peak forward surge current, 8.3 ms single half sine-wave unidirectional only ⁽²⁾ | I_{FSM} | A | 100 |
| Operating junction and storage temperature range | T_J, T_{STG} | $^\circ\text{C}$ | -55 to +150 |

■Electrical Characteristics ($T_a=25^\circ\text{C}$ Unless otherwise specified)

| PARAMETER | SYMBOL | UNIT | VALUE |
|---------------------------------------------------------------------------|--------|------|-------|
| Maximum instantaneous forward voltage @ at 50A for unidirectional only | V_F | V | 3.5 |



1.0SMB SERIES

■ Thermal Characteristics (T_A=25°C Unless otherwise specified)

| PARAMETER | SYMBOL | UNIT | Conditions | VALUE |
|-----------------------------|------------------|------|---------------------|-------|
| Thermal resistance(Typical) | R _{θJL} | °C/W | junction to lead | 20 |
| | R _{θJA} | °C/W | junction to ambient | 100 |

Notes:

- (1) Non-repetitive current pulse, per Fig. 3 and derated above T_A= 25°C per Fig.2.
- (2) Mounted on 0.2 x 0.2" (5.0 x 5.0 mm) copper pads to each terminal.

■ Electrical Characteristics (T_A=25°C Unless otherwise specified)

| Part Number (Uni) | Part Number (Bi) | Breakdown Voltage V _{BR@IT} | | | Maximum Reverse Leakage I _R ⁽⁵⁾ @ V _{RWM} (μA) | Working Peak Reverse Voltage V _{RWM} (V) | Maximum Reverse Surge Current I _{PP} ⁽⁴⁾ (A) | Maximum Clamping Voltage V _c @ I _{PP} (V) |
|-------------------|------------------|--------------------------------------|---------|------------------------------------|-------------------------------------------------------------------------------|---------------------------------------------------|------------------------------------------------------------------|---------------------------------------------------------------|
| | | Min(V) | Max (V) | I _T ⁽³⁾ (mA) | | | | |
| 1.0SMB6.8A | 1.0SMB6.8CA | 6.46 | 7.14 | 10 | 1000 | 5.8 | 95.2 | 10.5 |
| 1.0SMB7.5A | 1.0SMB7.5CA | 7.13 | 7.88 | 10 | 500 | 6.4 | 88.5 | 11.3 |
| 1.0SMB8.2A | 1.0SMB8.2CA | 7.79 | 8.61 | 10 | 200 | 7.0 | 82.6 | 12.1 |
| 1.0SMB9.1A | 1.0SMB9.1CA | 8.65 | 9.56 | 1 | 50 | 7.8 | 74.6 | 13.4 |
| 1.0SMB10A | 1.0SMB10CA | 9.50 | 10.50 | 1 | 10 | 8.6 | 69.0 | 14.5 |
| 1.0SMB11A | 1.0SMB11CA | 10.45 | 11.55 | 1 | 5 | 9.4 | 64.1 | 15.6 |
| 1.0SMB12A | 1.0SMB12CA | 11.40 | 12.60 | 1 | 5 | 10.2 | 59.9 | 16.7 |
| 1.0SMB13A | 1.0SMB13CA | 12.35 | 13.65 | 1 | 5 | 11.1 | 54.9 | 18.2 |
| 1.0SMB15A | 1.0SMB15CA | 14.25 | 15.75 | 1 | 5 | 12.8 | 47.2 | 21.2 |
| 1.0SMB16A | 1.0SMB16CA | 15.20 | 16.80 | 1 | 5 | 13.6 | 44.4 | 22.5 |
| 1.0SMB18A | 1.0SMB18CA | 17.10 | 18.90 | 1 | 5 | 15.3 | 39.7 | 25.2 |
| 1.0SMB20A | 1.0SMB20CA | 19.00 | 21.00 | 1 | 5 | 17.1 | 36.1 | 27.7 |
| 1.0SMB22A | 1.0SMB22CA | 20.90 | 23.10 | 1 | 5 | 18.8 | 32.7 | 30.6 |
| 1.0SMB24A | 1.0SMB24CA | 22.80 | 25.20 | 1 | 5 | 20.5 | 30.1 | 33.2 |
| 1.0SMB27A | 1.0SMB27CA | 25.65 | 28.35 | 1 | 5 | 23.1 | 26.7 | 37.5 |
| 1.0SMB30A | 1.0SMB30CA | 28.50 | 31.50 | 1 | 5 | 25.6 | 24.2 | 41.4 |
| 1.0SMB33A | 1.0SMB33CA | 31.35 | 34.65 | 1 | 5 | 28.2 | 21.9 | 45.7 |
| 1.0SMB36A | 1.0SMB36CA | 34.20 | 37.80 | 1 | 5 | 30.8 | 20.0 | 49.9 |
| 1.0SMB39A | 1.0SMB39CA | 37.05 | 40.95 | 1 | 5 | 33.3 | 18.6 | 53.9 |
| 1.0SMB43A | 1.0SMB43CA | 40.85 | 45.15 | 1 | 5 | 36.8 | 16.9 | 59.3 |
| 1.0SMB47A | 1.0SMB47CA | 44.65 | 49.35 | 1 | 5 | 40.2 | 15.4 | 64.8 |
| 1.0SMB51A | 1.0SMB51CA | 48.45 | 53.55 | 1 | 5 | 43.6 | 14.3 | 70.1 |
| 1.0SMB56A | 1.0SMB56CA | 53.20 | 58.80 | 1 | 5 | 47.8 | 13.0 | 77.0 |
| 1.0SMB62A | 1.0SMB62CA | 58.90 | 65.10 | 1 | 5 | 53.0 | 11.8 | 85.0 |
| 1.0SMB68A | 1.0SMB68CA | 64.60 | 71.40 | 1 | 5 | 58.1 | 10.9 | 92.0 |

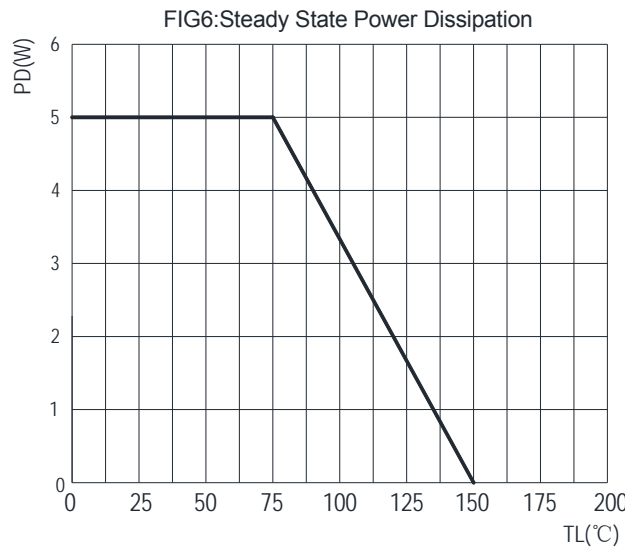
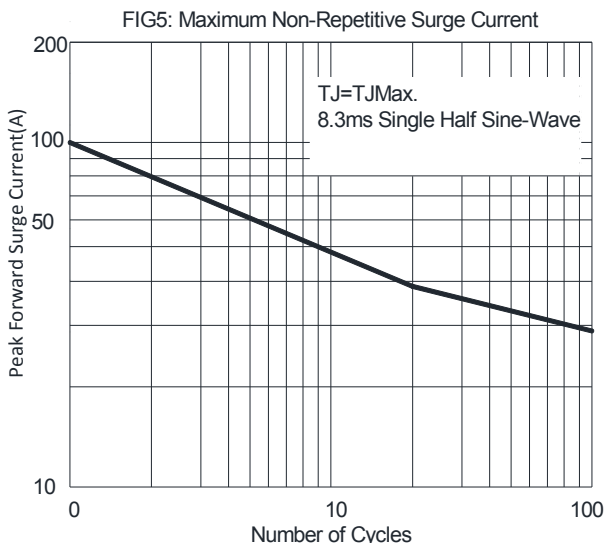
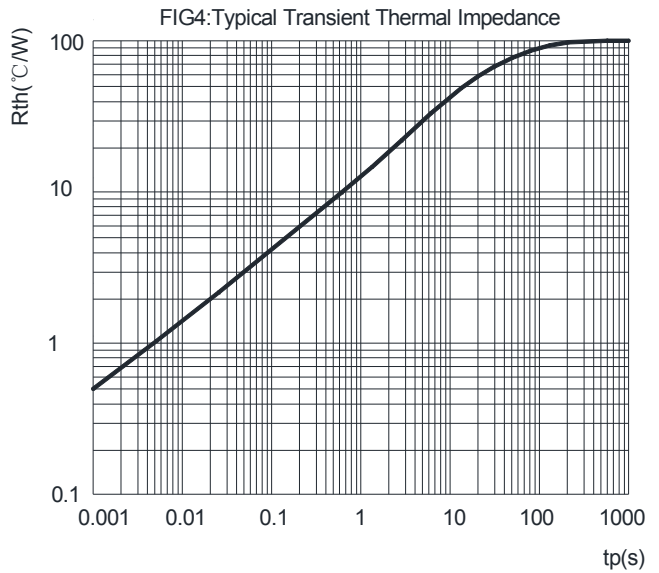
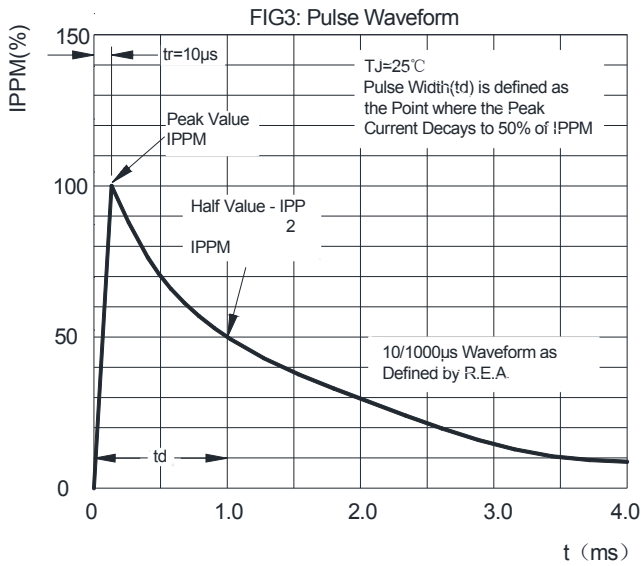
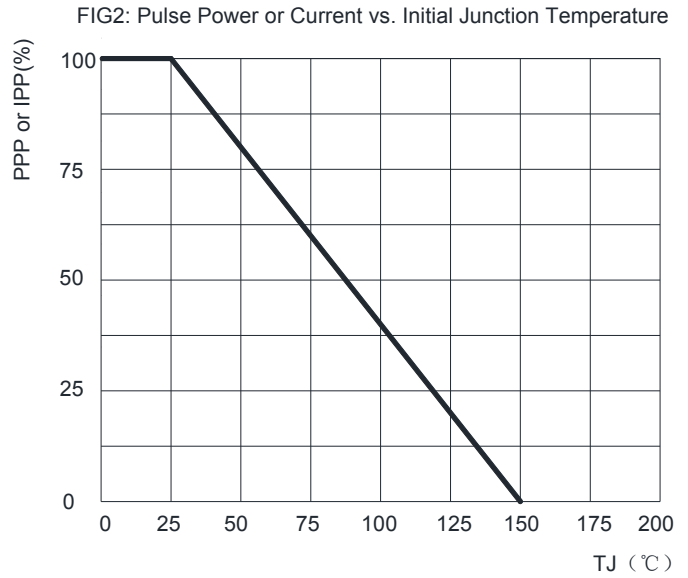
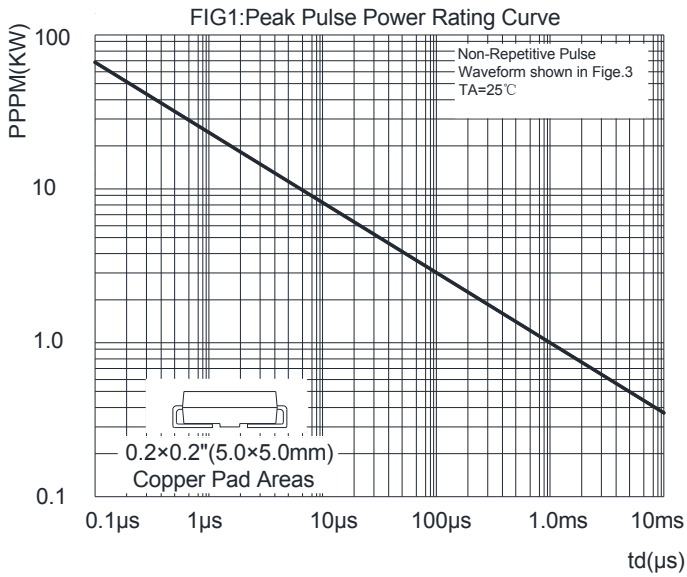
Notes:

- (3) Pulse test: t_p≤50ms.
- (4) Surge current waveform per Fig. 3 and derated per Fig.2.
- (5) For bi-directional types having VRWM of 10 V and less, the I_R limit is doubled.



1.0SMB SERIES

■ Characteristics (Typical)



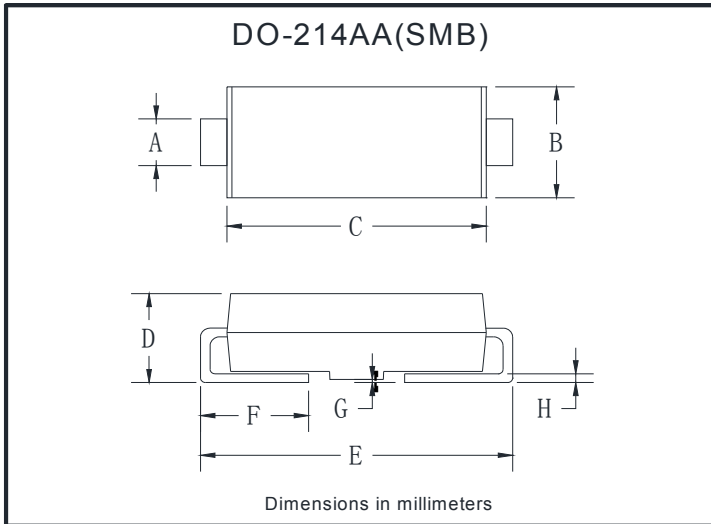


1.0SMB SERIES

Ordering Information (Example)

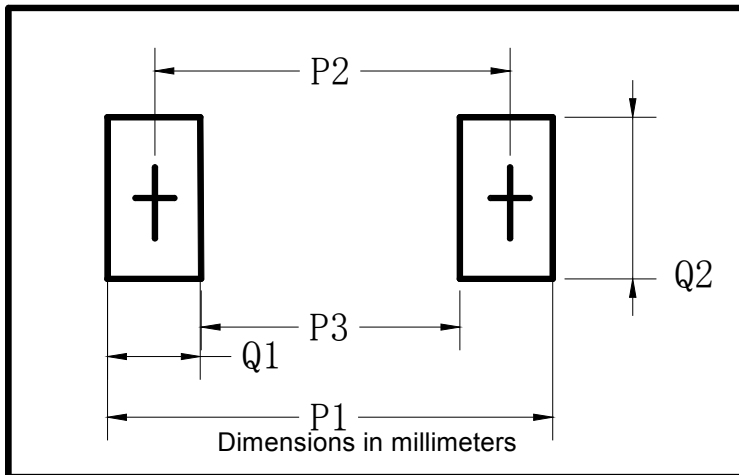
| PREFERED P/N | PACKING CODE | UNIT WEIGHT(g) | MINIMUM PACKAGE(pcs) | INNER BOX QUANTITY(pcs) | OUTER CARTON QUANTITY(pcs) | DELIVERY MODE |
|---------------|--------------|----------------|----------------------|-------------------------|----------------------------|---------------|
| 1.0SMB SERIES | F1 | 0.0975 | 3000 | 6000 | 48000 | 13" reel |
| 1.0SMB SERIES | F2 | 0.0975 | 750 | 3000 | 24000 | 7" reel |
| 1.0SMB SERIES | F3 | 0.0975 | 500 | 2000 | 16000 | 7" reel |

Outline Dimensions



| DO-214AA(SMB) | | |
|---------------|------|------|
| Dim | Min | Max |
| A | 1.85 | 2.15 |
| B | 3.30 | 3.94 |
| C | 4.05 | 4.75 |
| D | 1.99 | 2.61 |
| E | 5.21 | 5.59 |
| F | 0.90 | 1.41 |
| G | 0.10 | 0.20 |
| H | 0.15 | 0.31 |

Suggested pad layout



| DO-214AA(SMB) | |
|---------------|-------------|
| Dim | Millimeters |
| P1 | 6.8 |
| P2 | 4.3 |
| P3 | 1.8 |
| Q1 | 2.5 |
| Q2 | 2.3 |



1.0SMB SERIES

Disclaimer

The information presented in this document is for reference only. Yangzhou Yangjie Electronic Technology Co., Ltd. reserves the right to make changes without notice for the specification of the products displayed herein to improve reliability, function or design or otherwise.

The product listed herein is designed to be used with ordinary electronic equipment or devices, and not designed to be used with equipment or devices which require high level of reliability and the malfunction of which would directly endanger human life (such as medical instruments, transportation equipment, aerospace machinery, nuclear-reactor controllers, fuel controllers and other safety devices), Yangjie or anyone on its behalf, assumes no responsibility or liability for any damages resulting from such improper use of sale.

This publication supersedes & replaces all information previously supplied. For additional information, please visit our website [http:// www.21yangjie.com](http://www.21yangjie.com) , or consult your nearest Yangjie's sales office for further assistance.