

ESD3Z24CA

Transient Voltage Suppressors for ESD Protection



| | | |
|-------------|------|-------|
| V_{RWM} : | 24.0 | Volts |
|-------------|------|-------|

| | | |
|------------|---|--------|
| I_{pp} : | 3 | Ampers |
|------------|---|--------|

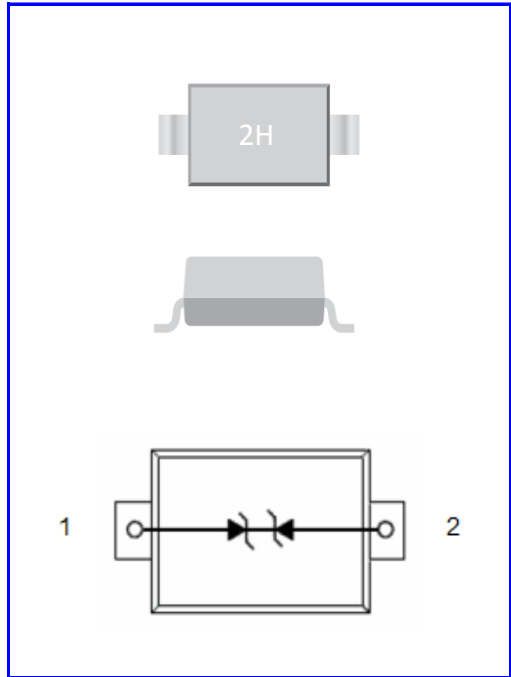
| | |
|---------|----------------------|
| SOD-323 | Marking and Polarity |
|---------|----------------------|

FEATURES

- Ultra low leakage current.
- Low clamping voltage.
- ESD protection diode.
- Complies with IEC 61000-4-2 level 4 (ESD).
- We declare that the material of product compliance with RoHS requirements and Halogen Free.

DEVICE MARKING

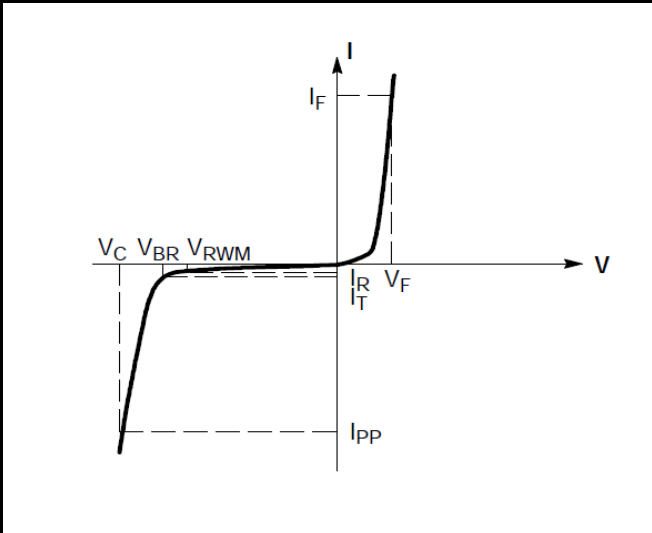
| Device MODEL | Marking |
|--------------|---------|
| ESD3Z24CA | 2H |



ABSOLUTE RATINGS (Ta = 25°C)

| Parameter | Symbol | Limits | Unit |
|--|-----------|---------------------|-----------|
| ESD per IEC 61000-4-2 (Air) ESD per IEC 61000-4-2 (Contact) | V_{ESD} | ± 15 ± 8 | KV |
| Peak Pulse Power (tp = 8/20µs) | P_{PP} | 320 | W |
| Peak pulse current @8/20 µs | I_{PP} | 3 | A |
| Maximum Junction Temperature | T_J | 150 | °C |
| Lead Solder Temperature - Maximum(10 Second Duration) | T_L | 260 (10 sec) | °C |
| Storage temperature | T_{STG} | -55 ~ +150 | °C |

ELECTRICAL CHARACTERISTICS (Ta= 25°C)



| Symbol | Parameter |
|-----------|---|
| I_{PP} | Maximum Reverse Peak Pulse Current |
| V_C | Clamping Voltage @ I_{PP} |
| V_{RWM} | Working Peak Reverse Voltage |
| I_R | Maximum Reverse Leakage Current @ V_{RWM} |
| I_T | Test Current |
| I_F | Forward Current |
| V_F | Forward Voltage @ I_F |
| P_{pk} | Peak Power Dissipation |
| C | Capacitance @ $V_R = 0$ and $f = 1.0$ MHz |

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ELECTRICAL CHARACTERISTICS (TA=25°C unless otherwise noted)

| DEVICE | V _{RWM} | I _R @±V _{RWM} | V _{BR} @I _T | | I _T | V _C @I _{PP} =1A | V _C @Max.I _{PP} | I _{PP} | P _{PK} | C _J |
|-----------|------------------|--------------------------------------|---------------------------------|------|----------------|--|--|-----------------|-----------------|----------------|
| | Max. | Max. | Min. | Max. | mA | Typ. | Max. | Max. | Max. | Typ. |
| | V | uA | V | | | V | V | A | W | pF |
| ESD3Z24CA | 24.0 | 1.0 | 26.7 | / | 1.0 | 43.0 | 52 | 6 | 320 | 25 |

Note:VBR is measured with a pluse test current IT at an ambient temperature of 25°C .

ELECTRICAL CHARACTERISTICS CURVES

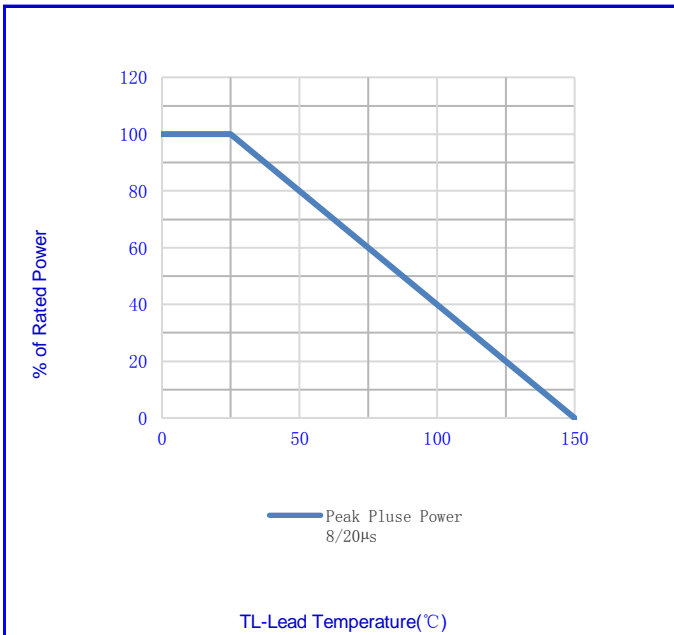


Fig.1- Power Derating

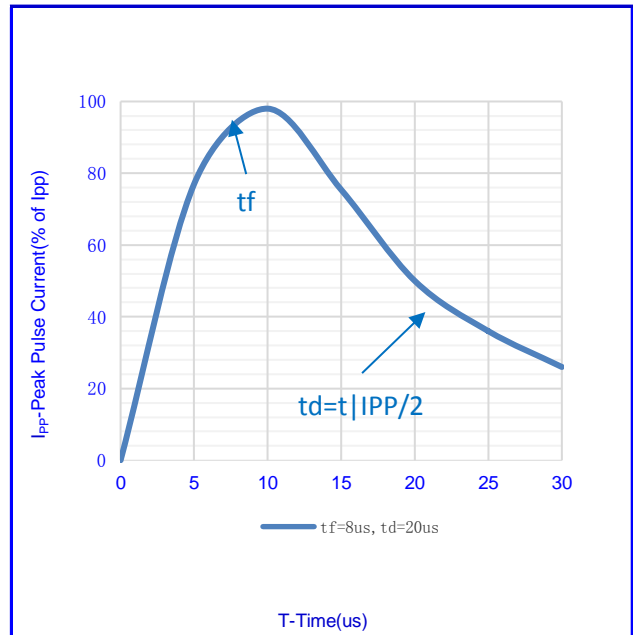


Fig.2-Pulse Waveform

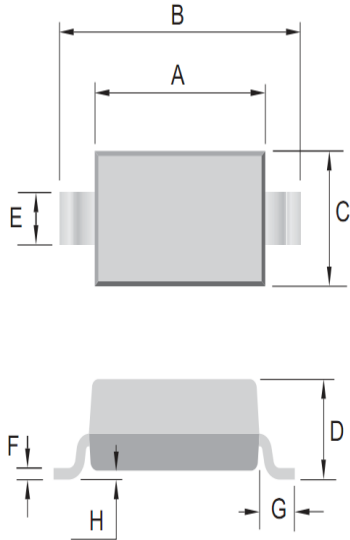
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OUTLINE DRAWINGS

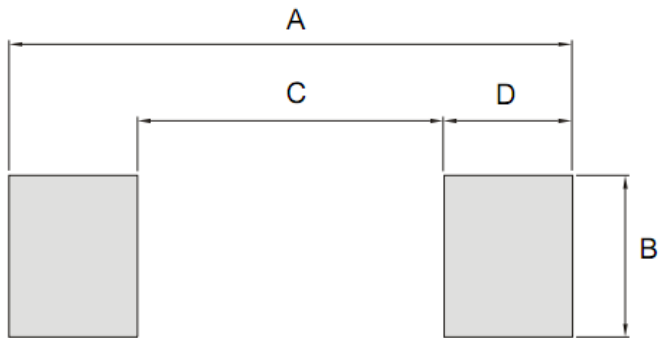
SOD-323



| OUTLINE DIMENSIONS | | | | | | |
|--------------------|------------|-------|-------|--------|-------|-------|
| Dim. | Milimeters | | | Inches | | |
| | Min. | Typ. | Max. | Min. | Typ. | Max. |
| A | 1.600 | - | 1.800 | 0.063 | - | 0.071 |
| B | 2.400 | - | 2.700 | 0.094 | - | 0.106 |
| C | 1.200 | - | 1.400 | 0.047 | - | 0.055 |
| D | - | - | 1.000 | - | - | 0.039 |
| E | 0.250 | - | 0.350 | 0.010 | - | 0.014 |
| F | 0.080 | - | 0.150 | 0.003 | - | 0.006 |
| G | - | 0.475 | - | - | 0.019 | - |
| H | - | - | 0.120 | - | - | 0.005 |

RECOMMENDED LAYOUT DRAWINGS

SOD-323



| RECOMMENDED MOUNTING PAD DIMENSIONS | | | | | | |
|-------------------------------------|------------|-------|------|--------|-------|------|
| Dim. | Milimeters | | | Inches | | |
| | Min. | Typ. | Max. | Min. | Typ. | Max. |
| A | -- | 2.900 | -- | -- | 0.114 | -- |
| B | -- | 0.500 | -- | -- | 0.020 | -- |
| C | -- | 1.440 | -- | -- | 0.057 | -- |
| D | -- | 0.730 | -- | -- | 0.029 | -- |

PACKING INFORMATION

SOD-323

| Package Method | Reel Size (mm) | Quantity (pcs/reel) | Inner Box Size LxWxH(mm) | Quantity (pcs/Inner Box) | Carton Size LxWxH(mm) | Quantity (pcs/carton) |
|----------------|----------------|---------------------|--------------------------|--------------------------|-----------------------|-----------------------|
| Tape Reel | Φ180 | 3000 | 185x185x90 | 21000 | 400x400x300 | 252000 |

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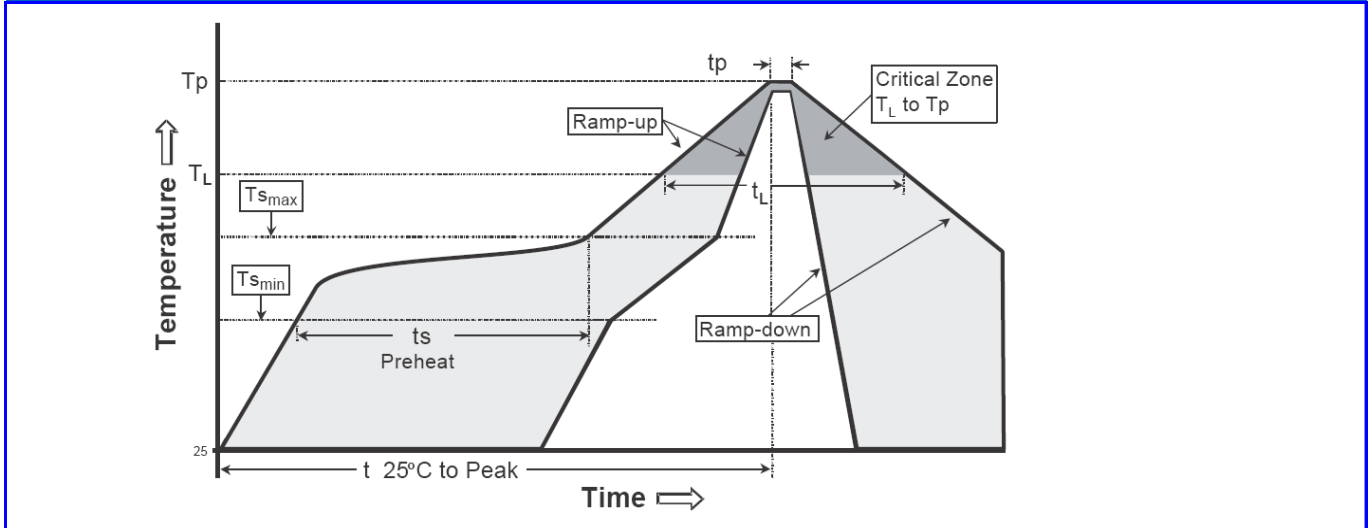
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Recommended wave soldering condition

| | | |
|-----------------|------------------|-----------------|
| Product | Peak Temperature | Soldering Time |
| Pb-free devices | 260 +0/-5 °C | 5 +1/-1 seconds |

Recommended temperature profile for IR reflow



| Profile feature | Sn-Pb eutectic Assembly | Pb-free Assembly |
|---|----------------------------------|----------------------------------|
| Average ramp-up rate (T _{smax} to T _p) | 3°C/second max. | 3°C/second max. |
| Preheat -Temperature Min(T _{s min}) -Temperature Max(T _{s max}) -Time(t _{s min} to t _{s max}) | 100°C 150°C 60-120 seconds | 150°C 200°C 60-180 seconds |
| Time maintained above: -Temperature (T _L) - Time (t _L) | 183°C 60-150 seconds | 217°C 60-150 seconds |
| Peak Temperature(T _p) | 240 +0/-5 °C | 260 +0/-5 °C |
| Time within 5°C of actual peak temperature(t _p) | 10-30 seconds | 20-40 seconds |
| Ramp down rate | 6°C/second max. | 6°C/second max. |
| Time 25 °C to peak temperature | 6 minutes max. | 8 minutes max. |

Note : All temperatures refer to topside of the package, measured on the package body surface.

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