

ESD Protection Diode : TEDSD3205140B



SOD323 package

■ Features

1. RoHS compliant and halogen-free
2. Working voltage: 5V
3. Capacitance: 14pF
4. Low clamping voltage
5. Low leakage current
6. IEC 61000-4-2 (ESD) ±30KV (air), ±30KV (contact)



■ Recommended Applications

1. Notebooks, Desktops, Servers
2. USB interface
3. Personal Digital Assistant (PDA)
4. Networking and Telecom(Ethernet 10/100/1000 Base T)

■ Mechanical Data

1. Case: SOD-323, molded plastic meets UL flammability rating 94V-0
2. High temperature soldering guaranteed:260°C/10 seconds
3. Meets MSL level 1, per J-STD-020

■ Part Number Code

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|----|----|----|----|
| T | E | D | S | D | 3 | 2 | 0 | 5 | 1 | 4 | 0 | B |
| 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 |

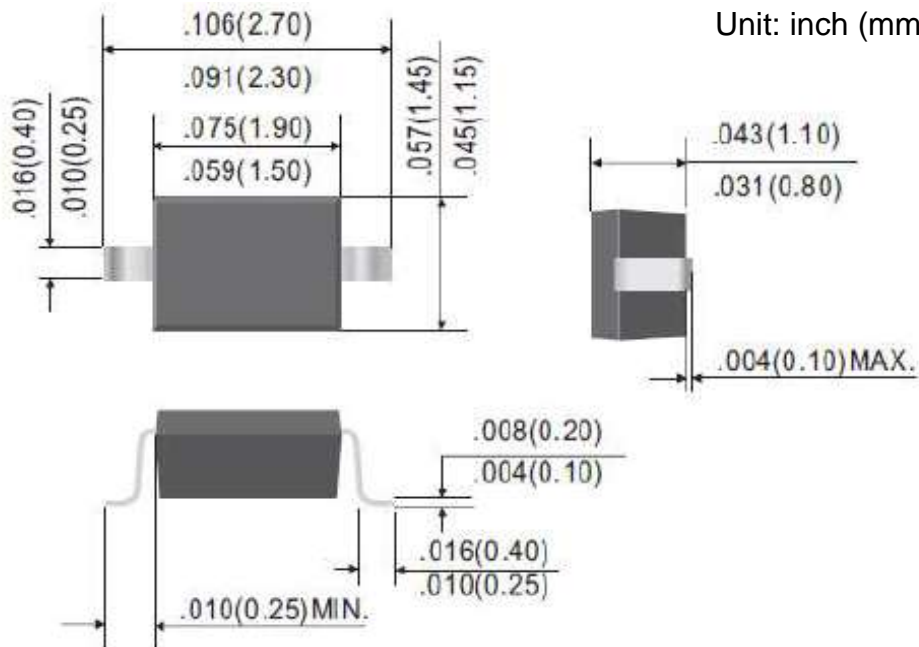
| | | | | | | | | | | | |
|----------------|---|-----------|-----------------------------|---------|----------------|--|----|-------------------------------|-------|-----------|-----------------|
| Product Series | | Type code | | Package | | Reverse Stand off Voltage(V_{RWM}) | | Junction Capacitance(C_j) | | Type Code | |
| TE | THINKING ESD Transient Voltage Suppression Diodes | D | Standard Capacitance >10pF | SD32 | SOD-323, 2pins | 05 | 5V | 0R8 | 0.8pF | U | Uni-directional |
| | | L | Low Capacitance >1pF, ≤10pF | D102 | DFN1006, 2pins | | | 030 | 3.0pF | B | Bi-directional, |
| | | U | Ultra-low Capacitance ≤1pF | D062 | DFN0603, 2pins | | | 03D | 3.3pF | | |
| | | | | | | | | 140 | 14pF | | |

SOD323 package

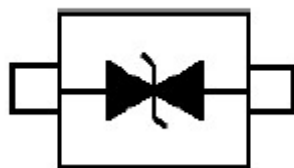
Structures and Dimensions

SOD-323

Unit: inch (mm)



Schematic & PIN Configuration



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■ Maximum Rating (Rating at 25°C ambient temperature unless otherwise noted)

| Parameter | Symbol | Value | Unit |
|--|------------------|------------|------|
| Peak pulse power (tp= 8/20μs waveform) | P _{PPM} | 125 | W |
| Peak Pulse Current (tp= 8/20μs waveform) | I _{PP} | 8 | A |
| ESD per IEC61000-4-2 (Air) ESD per IEC61000-4-2 (Contact) | V _{ESD} | ±30 ±30 | KV |
| Operating junction temperature | T _J | -55~+125 | °C |
| Storage temperature range | T _{STG} | -55~+150 | °C |

■ Electrical Characteristics (T_A=25°C unless otherwise noted)

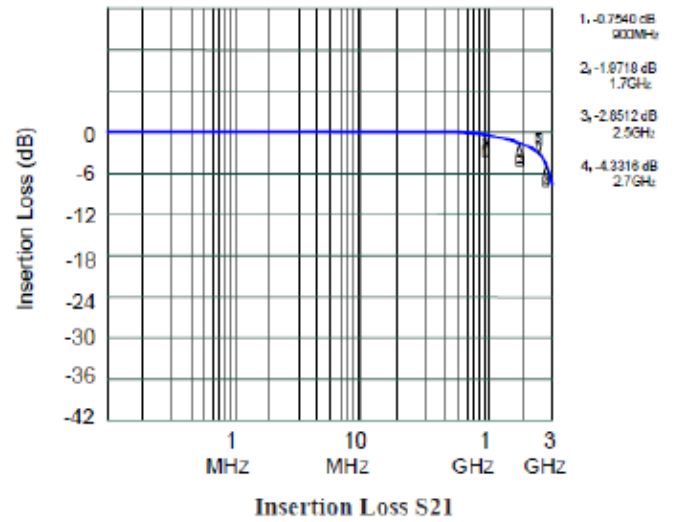
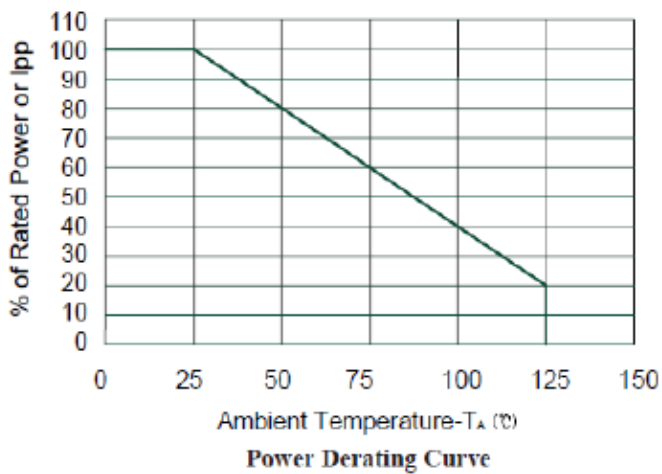
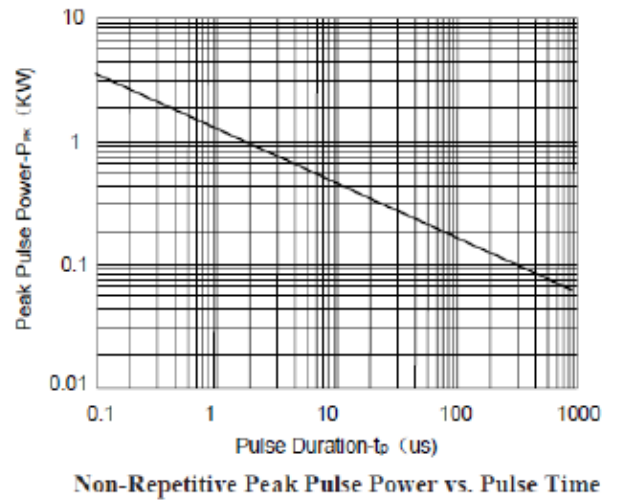
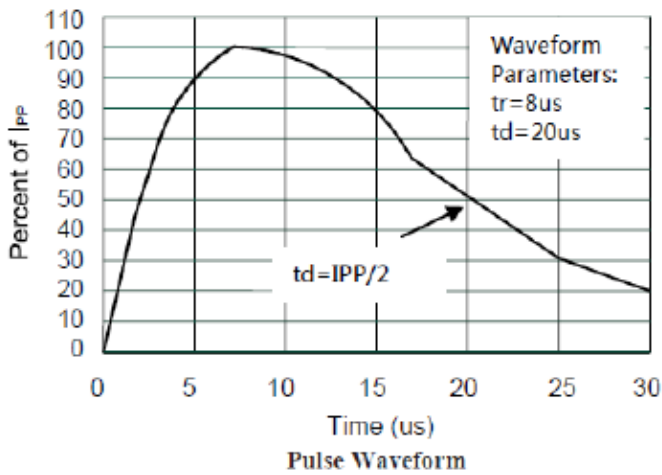
| Parameter | Symbol | Condition | Min. | Typ. | Max. | Unit |
|---------------------------|------------------|---------------------------------|------|------|------|------|
| Reverse Stand-off Voltage | V _{RWM} | - | | | 5 | V |
| Breakdown Voltage | V _{BR} | I _R =1mA | 5.6 | | | V |
| Reverse Leakage Current | I _R | V _{RWM} =5V | | | 1 | μA |
| Clamping Voltage | V _C | I _{pp} =1A, tp= 8/20μs | | | 17 | V |
| Junction Capacitance | C _j | V _R =0V , f=1MHz | | 14 | 20 | pF |

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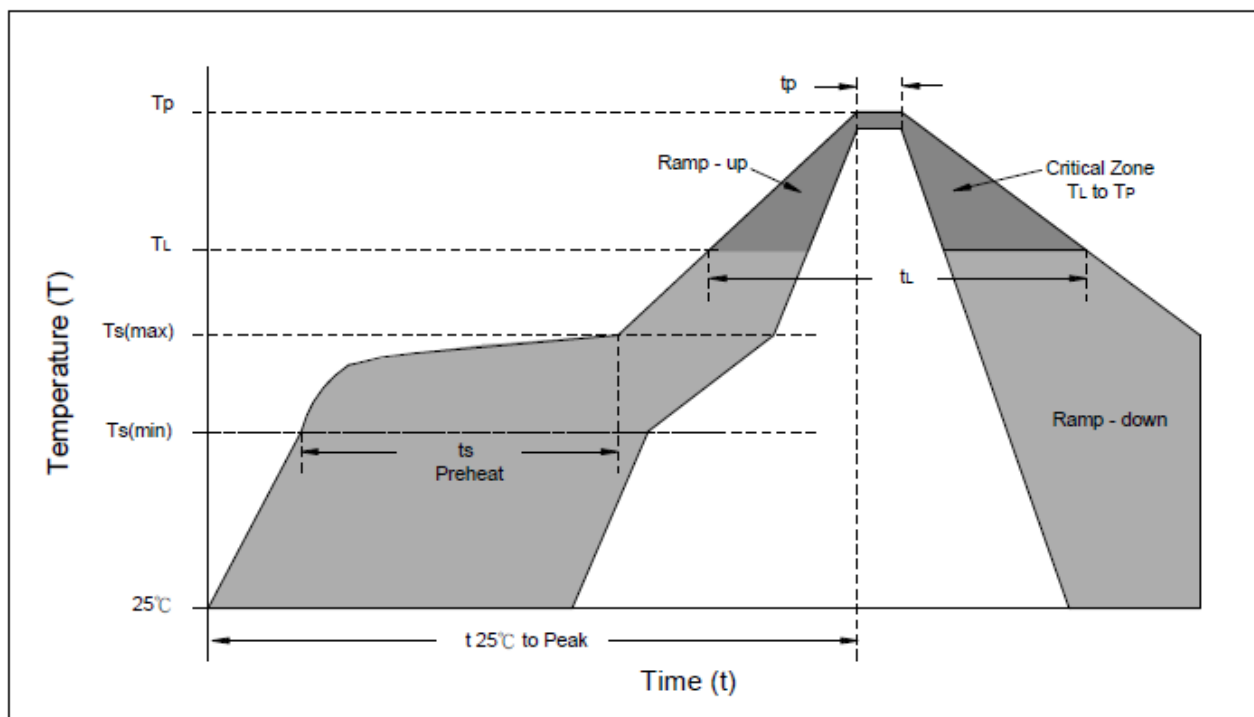
SOD323 package

Rate and Characteristic Curve ($T_A=25^\circ\text{C}$ unless otherwise noted)



SOD323 package

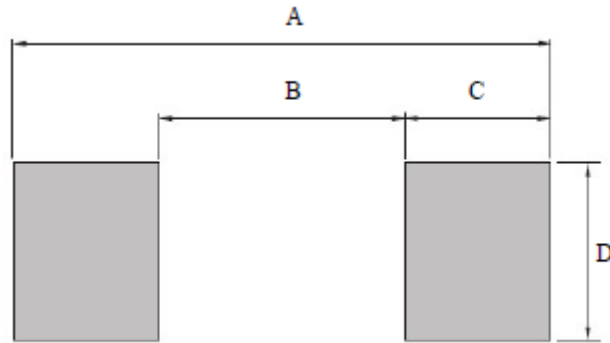
■ Soldering Recommendation



| Reflow Condition | Lead-free assembly |
|---|------------------------------------|
| Preheat -Temperature Min(Ts min) -Temperature Min(Ts max) -Time (min to max) (ts) | 150°C 200°C 60 – 180 seconds |
| Average ramp up rate -Temperature Liquidus (TL) to peak | 3°C/second max |
| Ts(max) to TL -Ramp-up Rate | 3°C/second max. |
| Reflow -Temperature Liquidus (TL) -Time (tL) | 217°C 60 – 150 seconds |
| Peak Temperature (TP) | 260°C |
| Time within 5°C of actual peak Temperature(TP) | 20 – 40 seconds |
| Ramp-down Rate | 6°C/second max. |
| Time 25°C to peak Temperature(TP) | 8 minutes max. |
| Do not exceed | 260°C |

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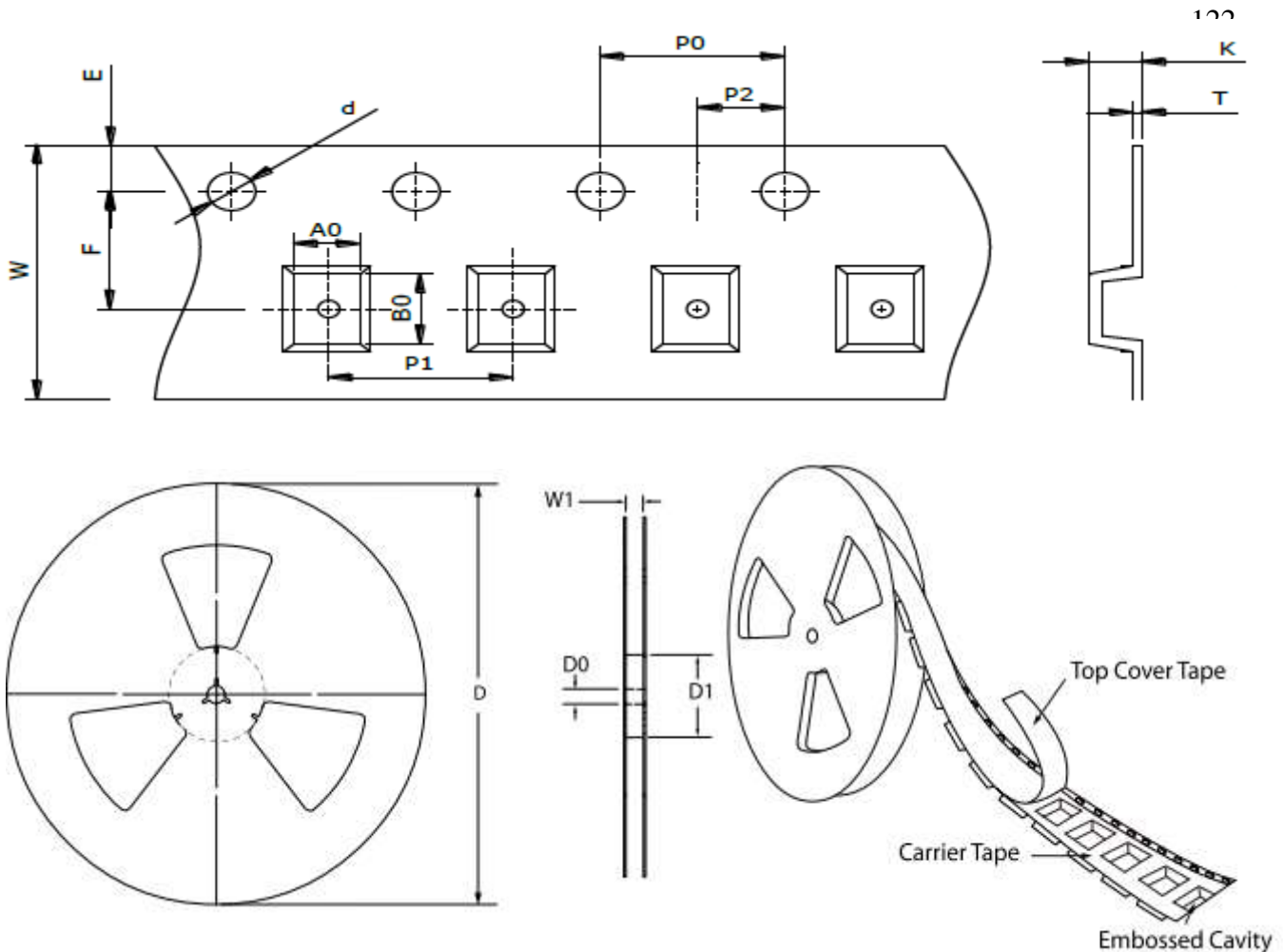
Recommended Soldering Pad Dimensions



Unit: mm

| Package Type | A | B | C | D |
|--------------|------|------|------|------|
| SOD-323 | 2.85 | 1.45 | 0.70 | 0.70 |

Packaging





| Item | Symbol | SOD-323 (Unit: mm) |
|------------------------|--------|--------------------|
| Carrier width | A0 | 1.50 ± 0.10 |
| Carrier length | B0 | 3.30 ± 0.10 |
| Carrier length | K0 | 0.95 ± 0.10 |
| Sprocket hole | D0 | 1.50 ± 0.10 |
| Reel outside diameter | E | 1.75 ± 0.10 |
| Feed hole width | F | 3.50 ± 0.10 |
| Reel inner diameter | P0 | 4.00 ± 0.10 |
| Sprocket hole position | P1 | 4.00 ± 0.10 |
| Punch hole position | P2 | 2.00 ± 0.10 |
| Sprocket hole pitch | T | 0.20 ± 0.05 |
| Punch hole pitch | W | 8.00 ± 0.20 |
| Embossment center | d (7") | 178.00 ± 2.00 |
| Overall tape thickness | d1 | MIN. 54.00 |
| Tape width | d0 | 13.00 ± 0.20 |
| Reel width | w1 | MAX. 13.50 |

■ Quantity

| Package Type | Reel Size (inch) | Reel (Kpcs) |
|--------------|------------------|-------------|
| SOD-323 | 7 | 3 |

■ Warehouse Storage Conditions of product

- Storage condition:
 1. Storage Temperature: -10°C ~ +40°C
 2. Relative Humidity: ≤ 75%RH
 3. Keep away from corrosive atmosphere and sunlight.
- Period of Storage: 1 year.