

Specification Status: Released

BENEFITS

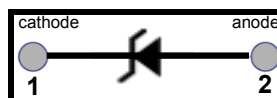
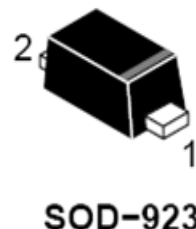
- Small-size ESD protection diode for high speed signals
- Appropriate for ESD protection in space-constrained portable electronics and mobile handsets
- Helps protect electronic circuits against damage from Electrostatic Discharge (ESD) events
- Assist equipment to pass IEC61000-4-2, level 4 testing
- RoHS compliant and Halogen Free

FEATURES

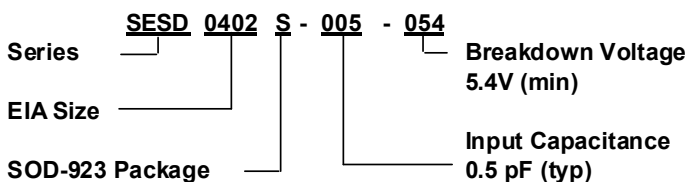
- Ultra-low Input capacitance – 0.5pF (typ)
- Low leakage current – 1.0µA (max)
- Low breakdown voltage – 5.4V (min)
- ESD maximum rating per IEC61000-4-2 standard
 - ± 10kV contact discharge
 - ± 15kV air discharge
- Capable of withstanding numerous ESD strikes
- Small SOD-923 package size: 1.00mm x 0.60mm
- Low package height: 0.40mm (max)

APPLICATIONS

- Cellular phones and portable electronics
- High speed data lines and low voltage antenna ports
- USB 2.0/3.0, HDMI 1.3/1.4, and DisplayPort
 - Less than 0.5dB insertion loss up to 3.0GHz
- Digital cameras and camcorders
- Applications requiring ESD performance in a small package



PART NUMBERING



MATERIALS INFORMATION

RoHS Compliant ELV Compliant Halogen Free *

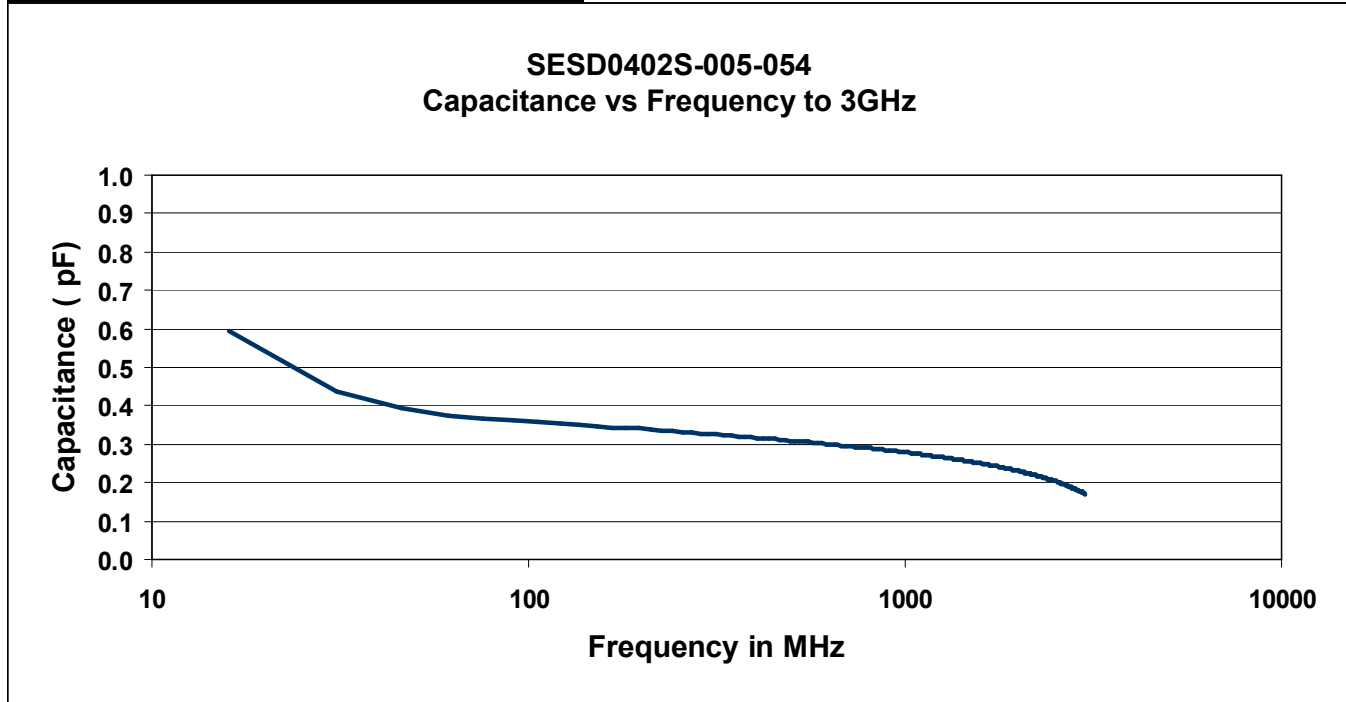


* Halogen Free refers to: Br≤900ppm, Cl≤900ppm, Br+Cl≤1500ppm
SOD-923 case epoxy material meets UL 94 V-0
Terminal finish: 100% Matte Tin (Sn)
SESD0402S-005-054 device meets MSL-1 Requirements

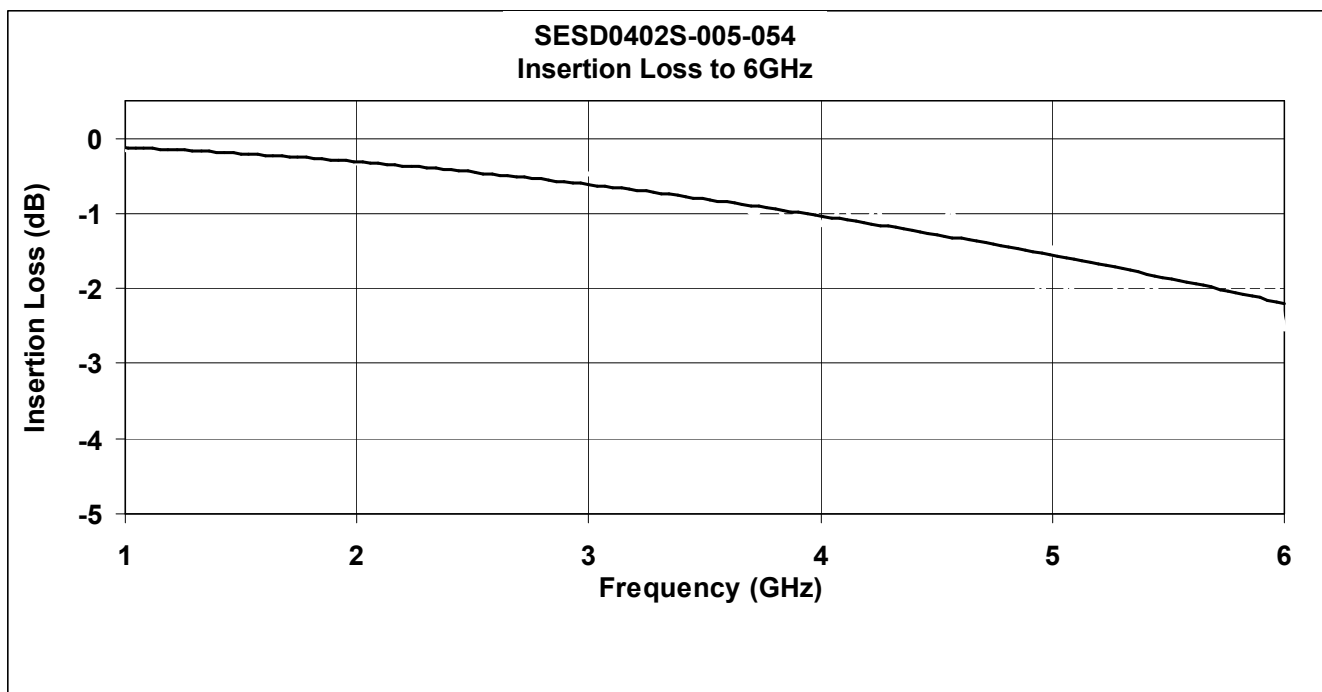
| Device Characteristics @ T = 25°C | Min | Typ | Max | Unit |
|---|-----|-----|-----|------|
| Input Capacitance @ V _f = 0V, f = 1MHz | -- | 0.5 | 0.9 | pF |
| Working Reverse Voltage (peak) - V _{wrv} | -- | -- | 5.0 | V |
| Breakdown Voltage - V _{br} @ I _t = 1mA ⁽¹⁾ | 5.4 | -- | -- | V |
| Leakage current @ V _{wrv} = 5.0V | -- | -- | 1.0 | µA |
| Total Power Dissipation - Pd (on 30mm x 30mm FR-4) | -- | -- | 150 | mW |
| ESD contact discharge per IEC61000-4-2 standard | -- | -- | ±10 | kV |
| ESD air discharge per IEC61000-4-2 standard | -- | -- | ±15 | kV |
| Temperature Range | | | | |
| Operating (junction temperature) | -55 | to | 125 | °C |
| Storage | -55 | to | 150 | °C |

⁽¹⁾ V_{br} is measured at test current I_t

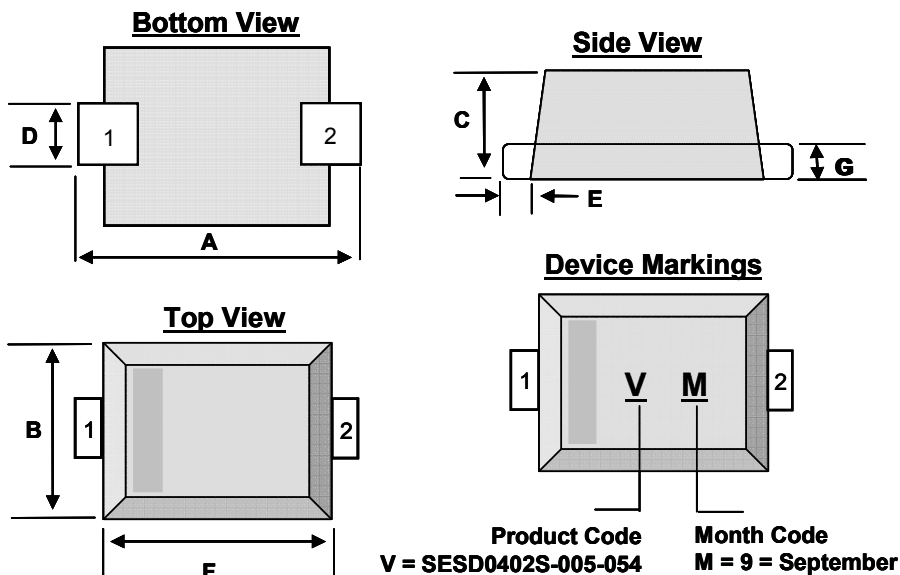
LINE CAPACITANCE VS FREQUENCY



INSERTION LOSS



DEVICE DIMENSIONS

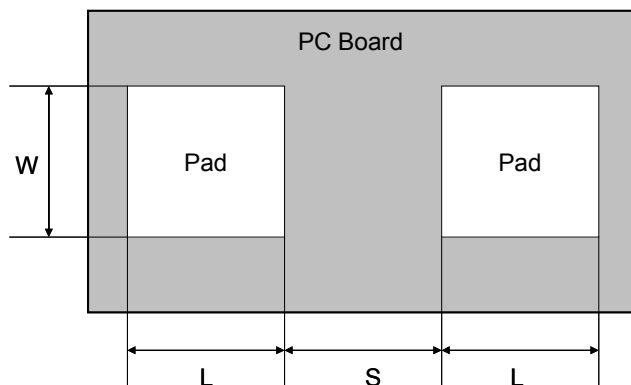


Drawings Not To Scale

| | A | B | C | D | E | F | G |
|-------|--------------|--------------|--------------|-------------|-------------|--------------|-------------|
| mm | 1.00 ± 0.01 | 0.60 ± 0.01 | 0.37 ± 0.03 | 0.20 ± 0.05 | 0.10 ± 0.05 | 0.80 ± 0.05 | 0.12 ± 0.05 |
| mils* | 39.37 ± 0.40 | 23.62 ± 0.40 | 14.57 ± 1.20 | 7.87 ± 2.00 | 3.94 ± 2.00 | 31.50 ± 2.00 | 4.72 ± 2.00 |

* Round off approximation

RECOMMENDED LANDING PATTERN:



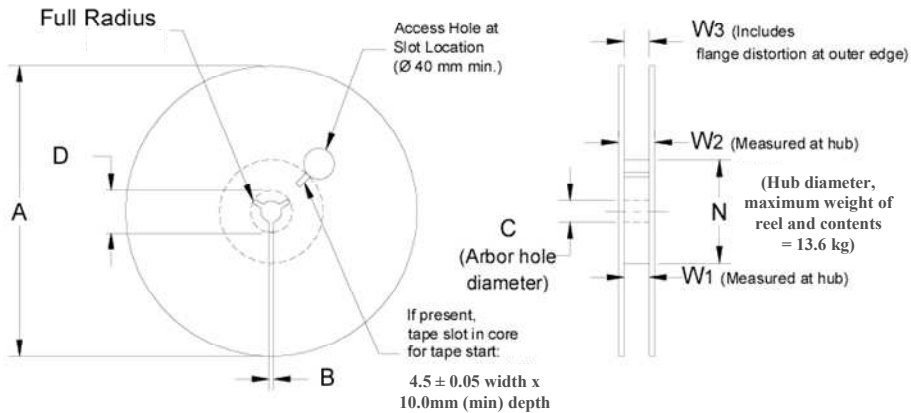
| | L | S | W |
|-------|-------------|-------------|-------------|
| mm | 0.30 ± 0.01 | 0.60 ± 0.01 | 0.40 ± 0.01 |
| mils* | 11.8 ± 0.4 | 23.6 ± 0.4 | 15.7 ± 0.4 |

* Round off approximation

Packaging

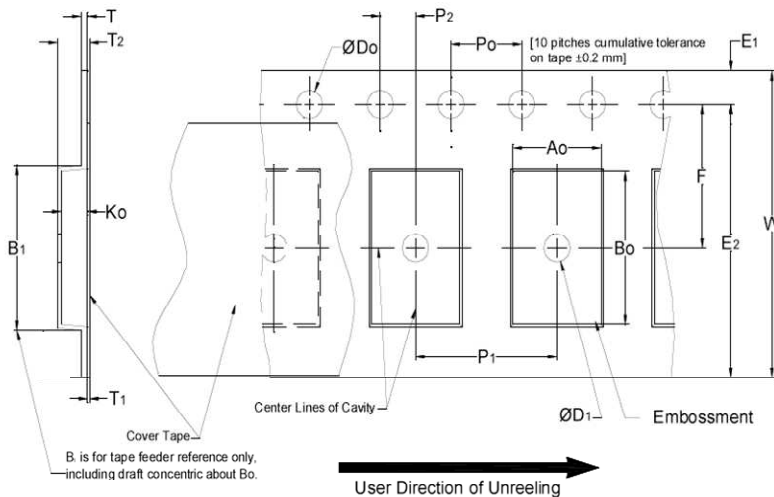
| Device Packaging | Tape & Reel Quantity | Standard Box (MOQ) | Standard Box (POQ) |
|------------------|----------------------|--------------------|--------------------|
| SOD-923 (0402) | 8,000 | 16,000 (2 reels) | 80,000 (10 reels) |

Reel Dimensions



| EIA Size | A | B | C | D | N | W ₁ | W ₂ | W ₃ |
|----------|-----------|------------|------------|------------|------------|----------------|----------------|----------------|
| mm | 178 (max) | 1.60 (min) | 13.0 ± 0.2 | 20.2 (min) | 50.0 (min) | 9.15 ± 0.75 | 14.4 (max) | 10.9 (max) |

Embossed Carrier Tape Dimensions



- **Leader & Trailer:**
 - Leader tape: 400mm (min)
 - Trailer tape: 160mm (min)

| Tape Dim | A ₀ | B ₀ | D ₀ | D ₁ | E ₁ | E ₂ | F | P ₀ | P ₁ | P ₂ | W |
|----------|----------------|----------------|----------------|----------------|----------------|----------------|-------------|----------------|----------------|----------------|-------------|
| mm | 0.66 ± 0.05 | 1.06 ± 0.05 | 1.60 (max) | 1.00 (min) | 1.75 ± 0.10 | 5.85 (min) | 3.50 ± 0.05 | 4.00 ± 0.10 | 2.00 ± 0.05 | 2.00 ± 0.10 | 8.00 ± 0.30 |

| Thickness | B ₁ | K ₀ | T | T ₁ | T ₂ |
|-----------|----------------|----------------|------------|----------------|----------------|
| mm | 1.06 ± 0.05 | 0.48 ± 0.05 | 0.60 (max) | 0.10 (min) | 1.05 ± 0.03 |

ESD Protector
Overvoltage Protection Device**PRODUCT: SESD0402S-005-054**DOCUMENT: SCD27717
REV LETTER: C
REV DATE: MAY 9, 2011
PAGE NO.: 5 OF 5

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