



**THE DATASHEET OF  
SESD0402S-005-054**



**Specification Status: Released**

**BENEFITS**

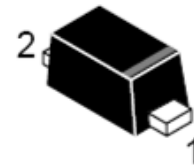
- Small-size ESD protection diode for high speed signals
- Appropriate for ESD protection in space-constrained portable electronics and mobile handsets
- Helps protect electronic circuits against damage from Electrostatic Discharge (ESD) events
- Assist equipment to pass IEC61000-4-2, level 4 testing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

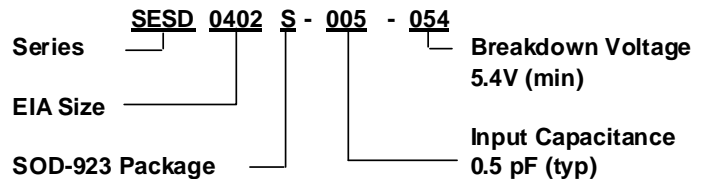
- Cellular phones and portable electronics
- High speed data lines and low voltage antenna ports
- USB 2.0/3.0, HDMI 1.3/1.4, and DisplayPort
  - Less than 0.5dB insertion loss up to 3.0GHz
- Digital cameras and camcorders
- Applications requiring ESD performance in a small package



**SOD-923**



**PART NUMBERING**



**MATERIALS INFORMATION**

**RoHS Compliant**

**ELV Compliant**

**Halogen Free \***



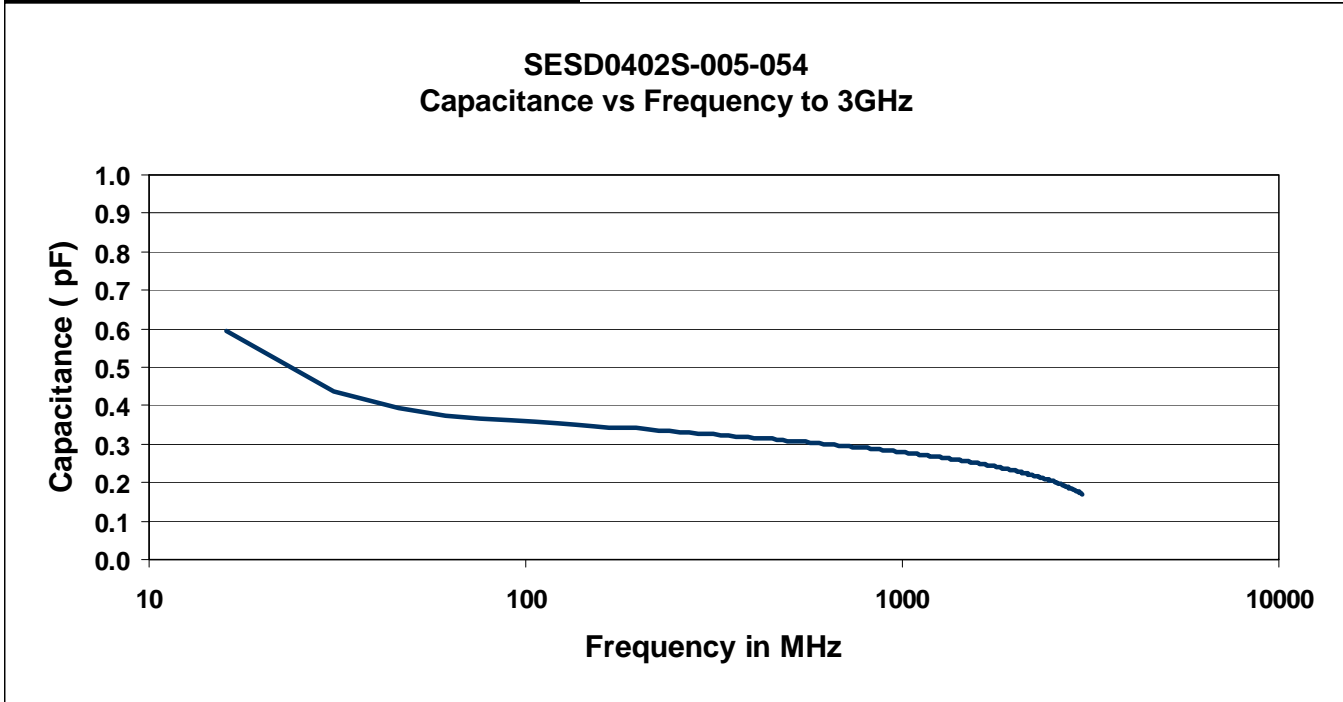
\* Halogen Free refers to: Br≤900ppm, Cl≤900ppm, Br+Cl≤1500ppm  
SOD-923 case epoxy material meets UL 94 V-0  
Terminal finish: 100% Matte Tin (Sn)  
SESD0402S-005-054 device meets MSL-1 Requirements

Device Characteristics @ T = 25°C	Min	Typ	Max	Unit
Input Capacitance @ V <sub>r</sub> = 0V, f= 1MHz	--	0.5	0.9	pF
Working Reverse Voltage (peak) - V <sub>wrv</sub>	--	--	5.0	V
Breakdown Voltage – V <sub>br</sub> @ I <sub>t</sub> = 1mA <sup>(1)</sup>	5.4	--	--	V
Leakage current @ V <sub>wrv</sub> = 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

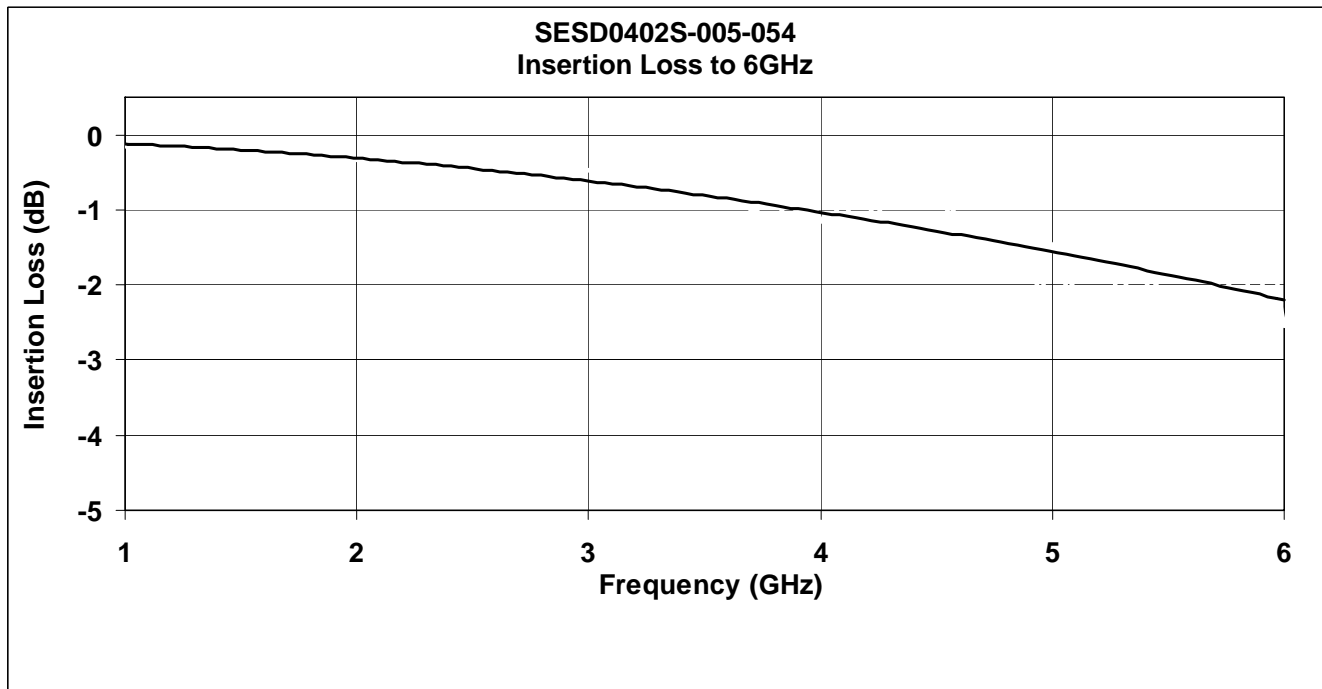
<sup>(1)</sup> V<sub>br</sub> is measured at test current I<sub>t</sub>

SUPERSEDED  
NOT the LATEST  
REVISION

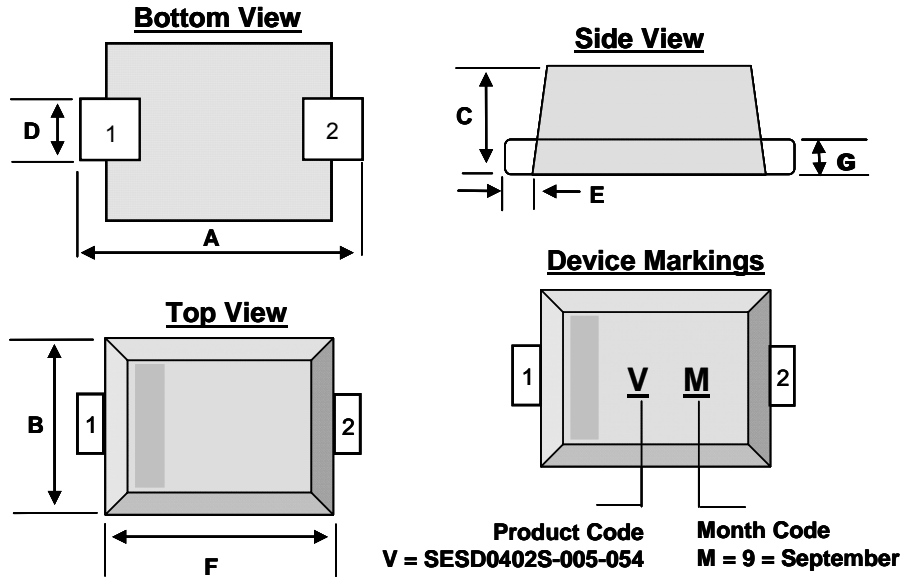
**LINE CAPACITANCE VS FREQUENCY**



**INSERTION LOSS**



**DEVICE DIMENSIONS**

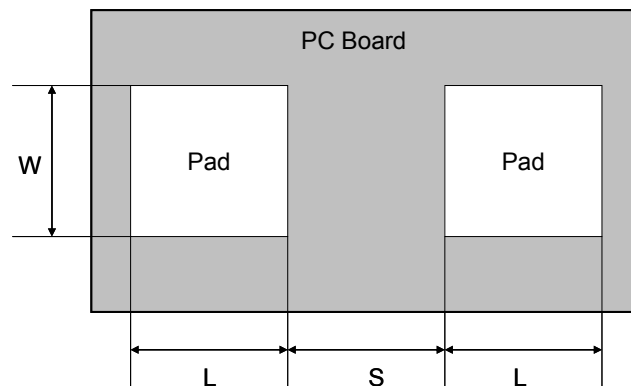


*Drawings Not To Scale*

	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:**



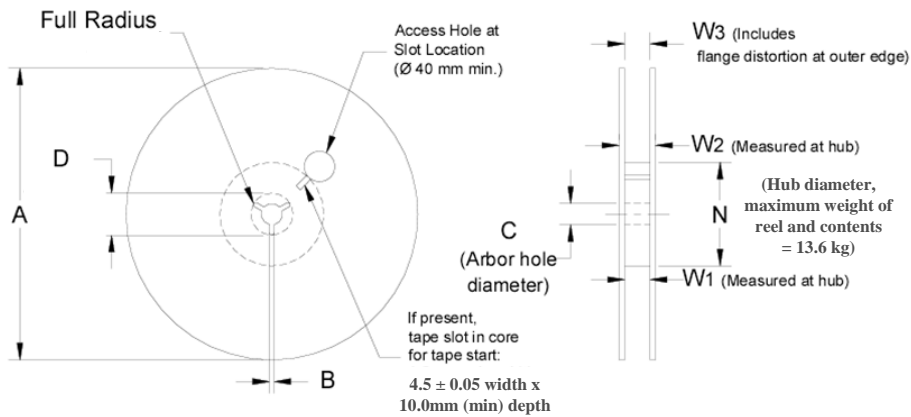
	L	S	W
mm	0.30 ± 0.01	0.30 ± 0.01	0.40 ± 0.01
mils*	11.8 ± 0.4	11.8 ± 0.4	15.7 ± 0.4

\* Round off approximation

### Packaging

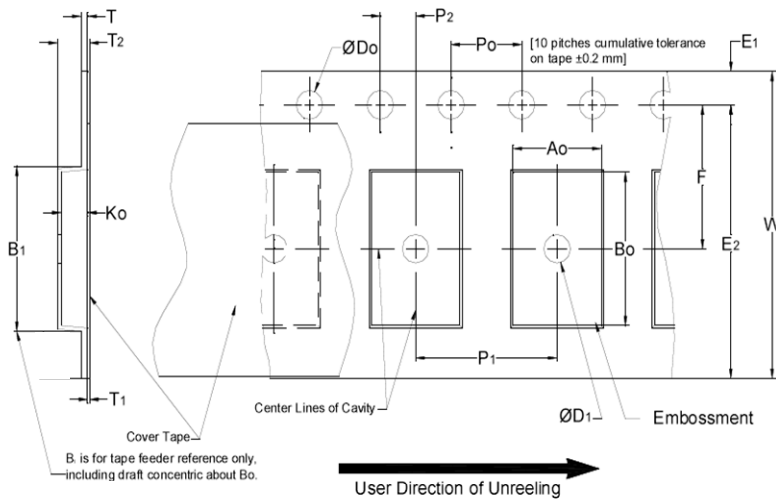
Device Packaging	Tape & Reel Quantity	Standard Box (MOQ)	Standard Box (POQ)
SOD-923 (0402)	8,000	16,000 (2 reels)	80,000 (10 reels)

### Reel Dimensions



EIA Size	A	B	C	D	N	W <sub>1</sub>	W <sub>2</sub>	W <sub>3</sub>
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 <sub>0</sub>	B <sub>0</sub>	D <sub>0</sub>	D <sub>1</sub>	E <sub>1</sub>	E <sub>2</sub>	F	P <sub>0</sub>	P <sub>1</sub>	P <sub>2</sub>	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 <sub>1</sub>	K <sub>0</sub>	T	T <sub>1</sub>	T <sub>2</sub>						
mm	1.06 ± 0.05	0.48 ± 0.05	0.60 (max)	0.10 (min)	1.05 ± 0.03						

**ESD Protector**  
**Overvoltage Protection Device*****Circuit Protection Products*****PRODUCT: SESD0402S-005-054**DOCUMENT: SCD 27717  
REV LETTER: A  
REV DATE: SEPTEMBER 11, 2009  
PAGE NO.: Page 5 of 5

Information furnished is believed to be accurate and reliable. However, users should independently evaluate the suitability of each product for their applications. Tyco Electronics reserves the right to change or update, without notice, any information contained in this publication; to change, without notice, the design, construction, processing, or specification of any product; and to discontinue or limit production or distribution of any product. This publication supersedes and replaces all information previously supplied. Without expressed or written consent by an officer of Tyco Electronics, Tyco Electronics does not authorize the use of any of its products as components in nuclear facility applications, aerospace, or in critical life support devices or systems. Tyco Electronics' only obligations are those in the Tyco Electronics Standard Terms and Conditions of Sale and in no case will Tyco Electronics be liable for any incidental, indirect, or consequential damages arising from the sale, resale, use, or misuse of its products.

**DisplayPort** is a trademark of VESA

**USB** is a trademark of USB.org

**HDMI** is a trademark of HDMI Licensing LLC

TE (logo) and Tyco Electronics are trademarks of the Tyco Electronics group of companies and its licensors.

© 2009 Tyco Electronics Corporation. All rights reserved.

## Looking for pricing, stock, or lifecycle information?

Click below to explore more details on WIN SOURCE:

 [View SESD0402S-005-054 on WIN SOURCE](#)

 [Littelfuse Inc. Information](#)

## Optimize Your Supply Chain with WIN SOURCE Solutions

-  Global Sourcing Solution
-  Obsolete Management
-  Cost Control Management
-  Shortage Management
-  Alternative Solution
-  Excess Inventory Management