



SD05CS

Bi-directional ESD Protection Diode

1. Features

- IEC61000-4-2 (ESD) $\pm 30\text{kV}$ (Contact), $\pm 30\text{kV}$ (Air)
- 500 Watts peak pulse power ($t_p = 8/20\mu\text{s}$)
- Low reverse clamping voltage
- RoHS compliant with Halogen-free
- Low clamping voltage
- Working voltages : 5V

2. Application

- Cellular Handsets and Accessories
- Personal Digital Assistants
- Notebooks and Handhelds
- Portable Instrumentation
- Peripherals

3. Mechanical Data

- SOD-323 package
- Flammability Rating: UL 94V-0
- Packaging: Tape and Reel
- High temperature soldering guaranteed: $260^\circ\text{C}/10\text{s}$
- Reel size: 7 inch

4. Ordering Information

- Device: SD05CS
- Package: SOD-323
- Marking: 5CS
- Material: Halogen free
- Packing: Tape & Reel
- Quantity per reel: 3,000pcs

5. Absolute Maximum Rating

Parameter	Symbol	Value	Unit
ESD per IEC 61000-4-2 (Contact) ESD per IEC 61000-4-2 (Air)	V_{ESD}	± 30 ± 30	KV
Peak Pulse Power(8/20 μs)	P_{PP}	500	W
Operating Temperature	T_{OPT}	$-55\sim+125$	$^\circ\text{C}^\circ$
Storage Temperature	T_{stg}	$-55\sim+150$	C

6. Pinning information

Pin	Symbol	Description	Simplified outline	Equivalent Circuit	Marking	Package
1	A	Anode			5CS	SOD-323
2	A	Anode				

7. Electrical Characteristics (Tamb=25°C)

Parameter	Symbols	Condition	Min	Typ	Max	Unit
Reverse Working Voltage	V_{RWM}		—	—	5.0	V
Reverse Breakdown Voltage	V_{BR}	$I_T=1mA$	6.0	—	8.0	V
Reverse Leakage Current	I_R	$V_{RWM}=5V$	—	—	1.0	μA
Clamping Voltage	V_C	$I_{PP}=1A, t_p=8/20\mu s$	—	—	8.0	V
		$I_{PP}=32A, t_p=8/20\mu s$	—	—	16	V
Junction Capacitance	C_J	$V_R=0V, f=1MHz$	—	60	75	pF

8. Typical Characteristics

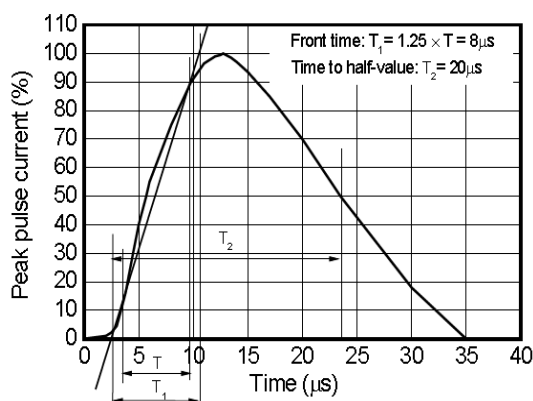


Fig 1 8/20 μs waveform per IEC61000-4-5

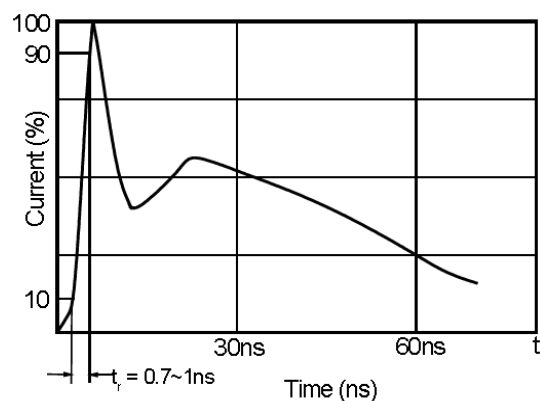


Fig 2 ESD pulse waveform according to IEC61000-4-2

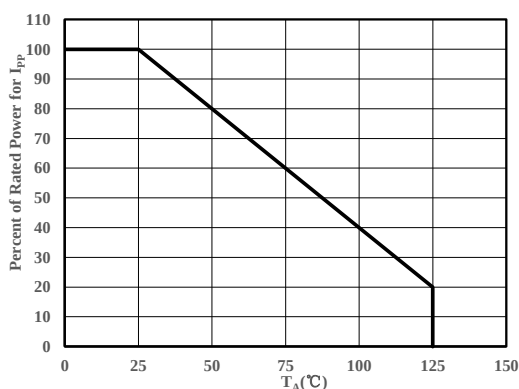
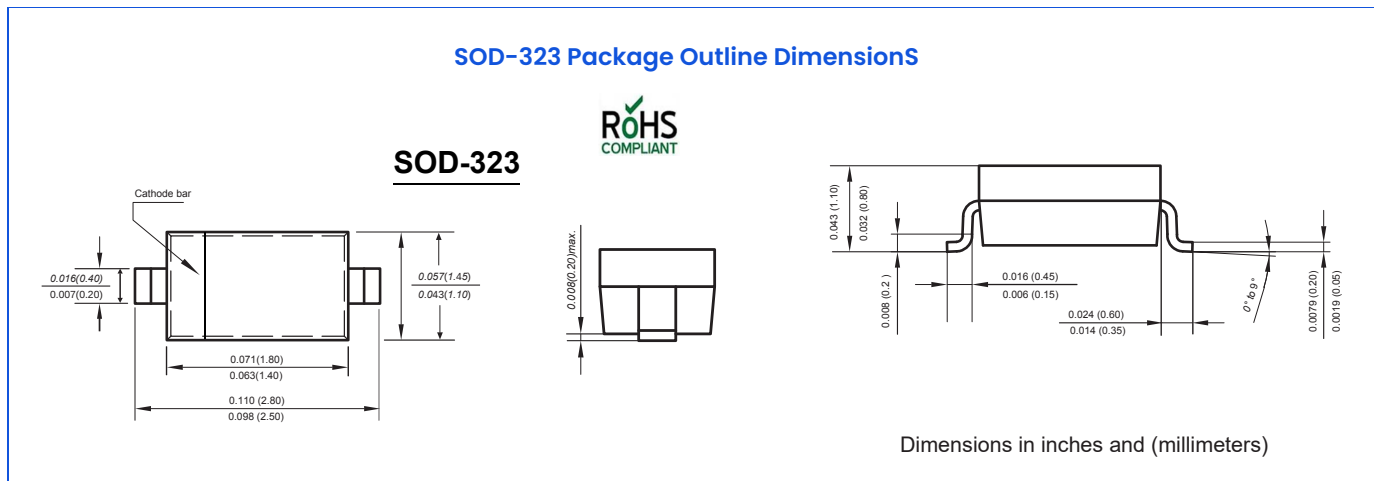


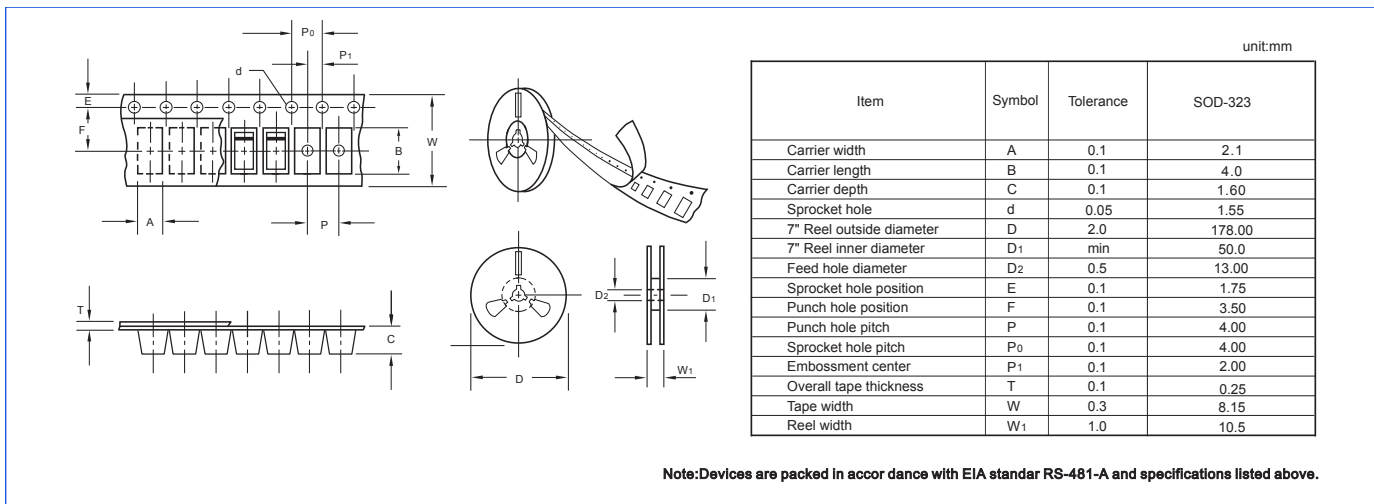
Fig 3 Power Derating Curve

The curve above is for reference only.

9. Outline Drawing



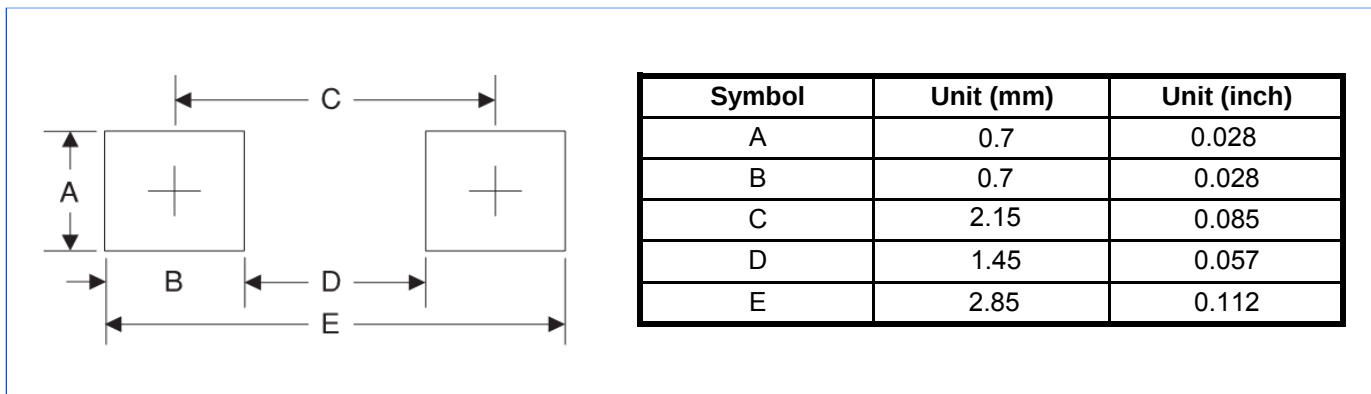
10. Packing information



11. Reel packing

PACKAGE	REEL SIZE	REEL (pcs)	COMPONENT SPACING (m/m)	BOX (pcs)	INNER BOX (m/m)	REEL DIA, (m/m)	CARTON SIZE (m/m)	CARTON (pcs)	APPROX. GROSS WEIGHT (kg)
SOD-323	7"	3,000	4.0	45,000	210*208*203	178	430*430*235	180,000	

12. Suggested Pad Layout



13. Important Notice and Disclaimer

Microdiode Electronics (Shenzhen) reserves the right to make changes to this document and its products and specifications at any time without notice. Customers should obtain and confirm the latest product information and specifications before final design, purchase or use.

Microdiode Electronics (Shenzhen) makes no warranty, representation or guarantee regarding the suitability of its products for any particular purpose, nor does Microdiode Electronics (Shenzhen) assume any liability for application assistance or customer product design. Microdiode Electronics (Shenzhen) does not warrant or accept any liability with products which are purchased or used for any unintended or unauthorized application.

No license is granted by implication or otherwise under any intellectual property rights of Microdiode Electronics (Shenzhen).

Microdiode Electronics (Shenzhen) products are not authorized for use as critical components in life support devices or systems without express written approval of Microdiode Electronics (Shenzhen).