



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~+125	$^\circ\text{C}^\circ$
Storage Temperature	T_{stg}	-55~+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

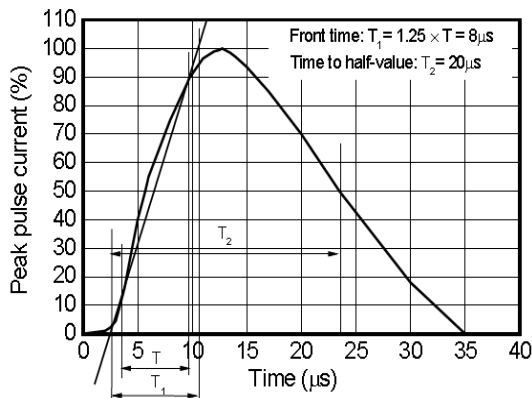


Fig 1 8/20µs waveform per IEC61000-4-5

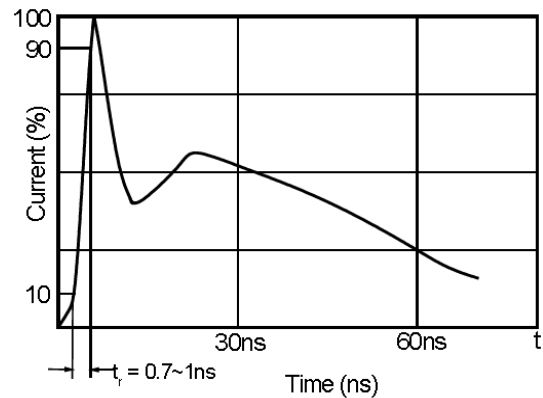


Fig 2 ESD pulse waveform according to IEC61000-4-2

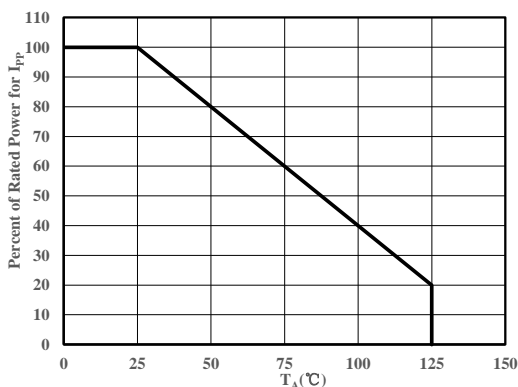
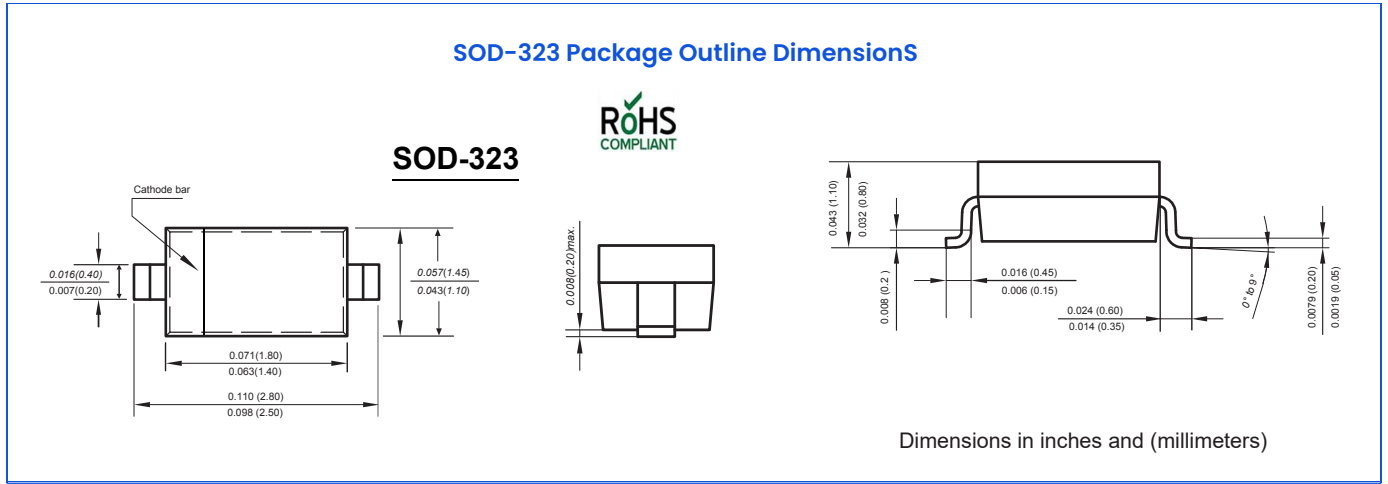


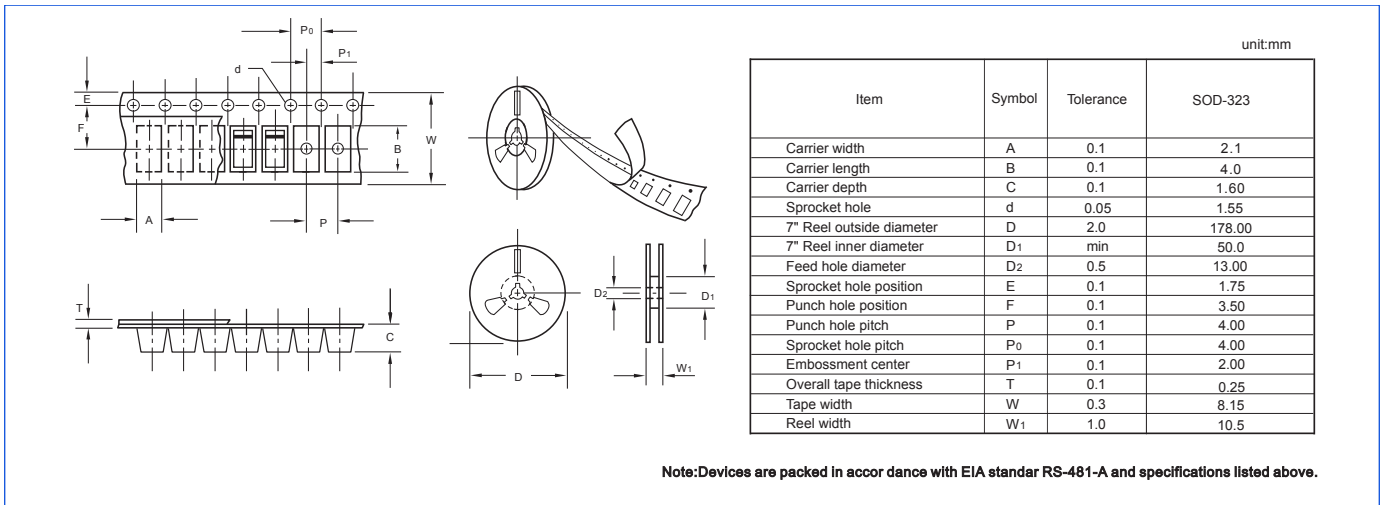
Fig 3 Power Derating Curve

The curve above is for reference only.

9. Outline Drawing



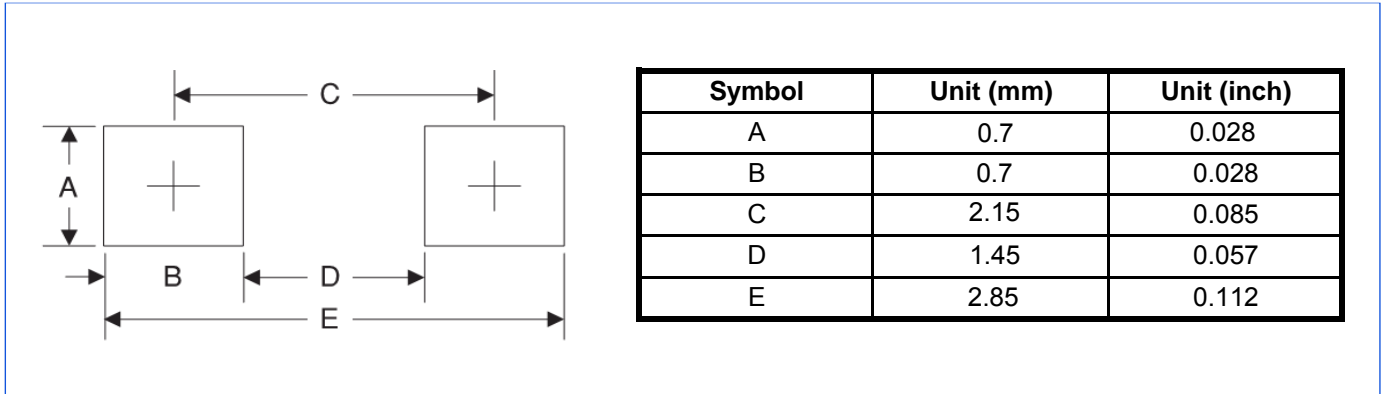
11. Packing information



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

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