

L052AT323

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Surface Mount Uni-Directional TVS For ESD Protection Diode - 5V

Features

- 100W peak pulse power (8/20 μ s).
- Protects one data or power line.
- Complies with following standards:
 - IEC 61000-4-2 (ESD) immunity test :
 - Air discharge: ± 25 kV.
 - Contact discharge: ± 17 kV.
 - IEC61000-4-4 (EFT) 40A (5/50ns).
- Lead-free parts meet RoHS requirements.
- Suffix "-H" indicates Halogen-free part, ex.L052AT323-H.

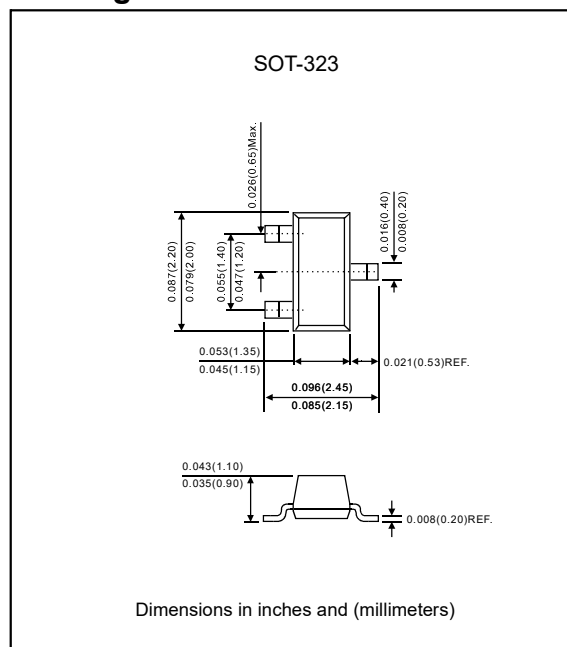
Applications

- Cellular Handsets and Accessories.
- Microprocessor based equipment.
- Notebooks, Desktops, and Servers.
- Portable Instrumentation
- Peripherals.

Mechanical data

- Epoxy:UL94-V0 rated flame retardant.
- Case : Molded plastic, SOT-323.
- Terminals : Solder plated, solder able per MIL-STD-750, Method 2026.
- Moisture sensitivity : Level 3 per J-STD-020.
- Mounting Position : Any.
- Weight : Approximated 0.006 gram.

Package outline



Maximum ratings (At $T_A=25^{\circ}\text{C}$ unless otherwise noted)

Parameter	Symbol	Value	Unit
Peak pulse power (8 / 20 μ s)	P_{PK}	100	W
Peak pulse current (8 / 20 μ s)	I_{PP}	10	A
ESD Per IEC 61000-4-2 (Air)	V_{ESD}	± 27	KV
ESD Per IEC 61000-4-2 (Contact)		± 17	
Operating temperature	T_{OPT}	-55 to +125	$^{\circ}\text{C}$
Storage temperature	T_{STG}	-55 to +150	$^{\circ}\text{C}$

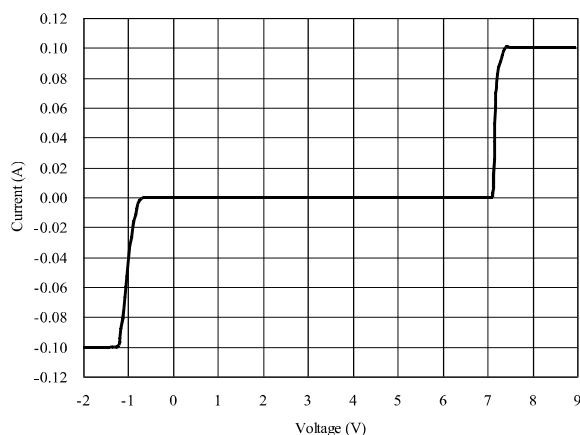
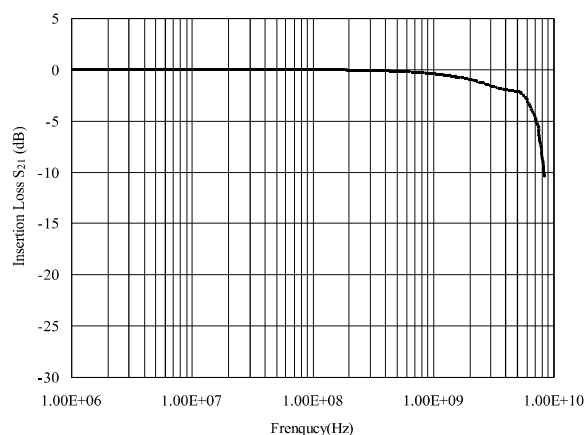
Electrical characteristics (At $T_A=25^{\circ}\text{C}$ unless otherwise noted)

Parameter	Symbol	Conditions	Min.	Typ.	Max.	Unit
Reverse working voltage	V_{RWM}				5.0	V
Breakdown voltage	V_{BR}	$I_T = 1\text{mA}$ (Between I/O and GND)	6.0		10.0	V
Reverse leakage current	I_R	$V_{RWM} = 5\text{V}$ (Between I/O and GND)			100	nA
Clamping voltage	V_C	$I_{PP} = 1\text{A}$ (8 x 20 μ s Pulse)(Between I/O and GND)			10	V
		$I_{PP} = 10\text{A}$ (8 x 20 μ s Pulse)(Between I/O and GND)			13	
Junction capacitance	C_J	$V_R = 0\text{V}$, $f = 1\text{MHz}$ (Between I/O and GND)		1.5	2.0	pF
		$V_R = 0\text{V}$, $f = 1\text{MHz}$ (Between I/O and I/O)		0.75	1.0	

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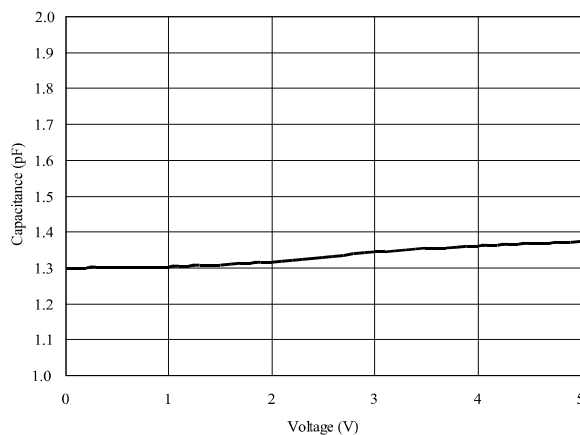
Rating and characteristic curves

Voltage Sweeping of I/O to GND

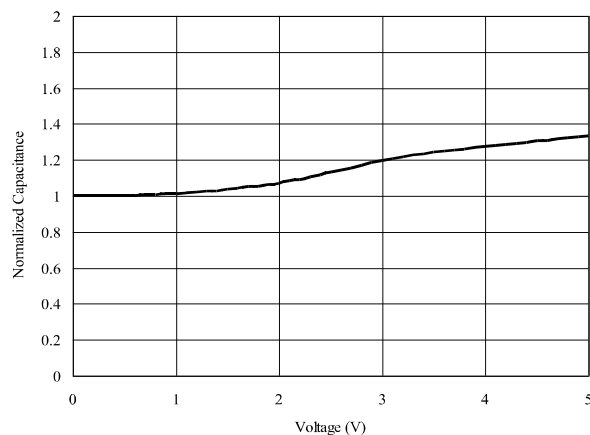
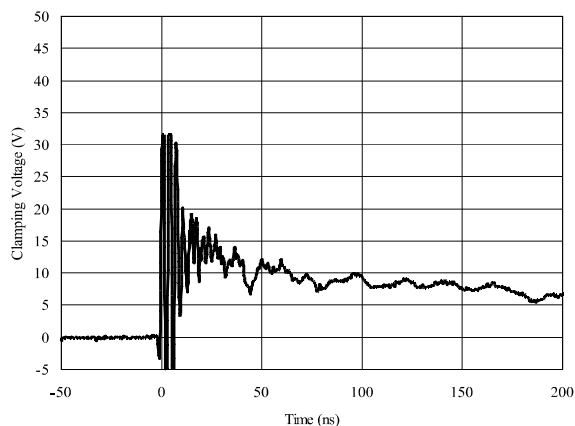
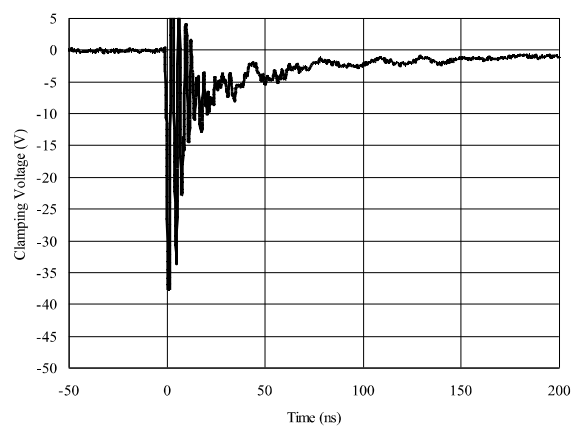
Insertion Loss S₂₁ of I/O to GND

Capacitance vs. Voltage of I/O to I/O (f = 1MHz)

Capacitance vs. Reverse Voltage



Normalized Capacitance vs. Reverse Voltage

ESD Clamping of I/O to GND
(+8kV Contact per IEC 61000-4-2)ESD Clamping of I/O to GND
(-8kV Contact per IEC 61000-4-2)

Pinning information

Marking

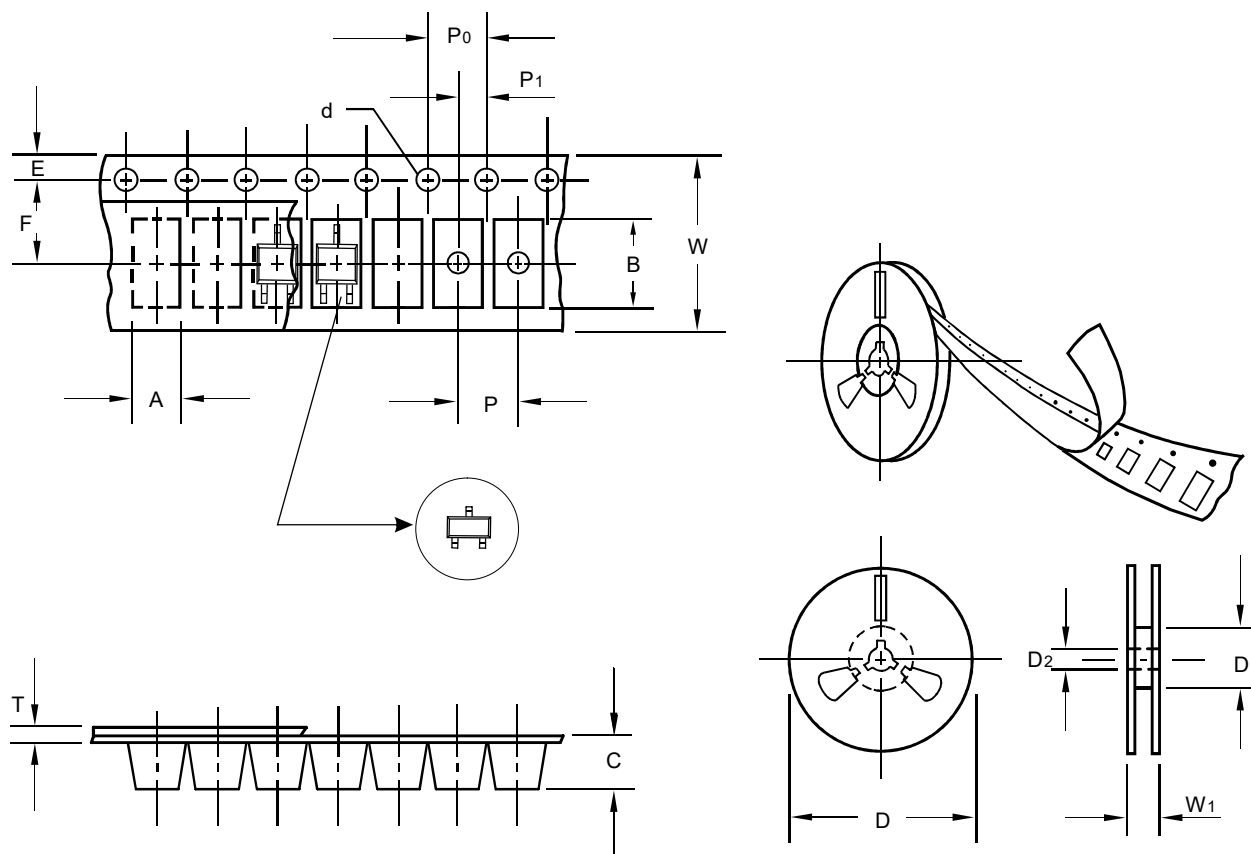


SOT-323



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Packing information



unit:mm

Item	Symbol	Tolerance	SOT-323
Carrier width	A	0.1	2.25
Carrier length	B	0.1	2.55
Carrier depth	C	0.1	1.19
Sprocket hole	d	0.1	1.50
13" Reel outside diameter	D	2.0	-
13" Reel inner diameter	D ₁	min	-
7" Reel outside diameter	D	2.0	178.00
7" Reel inner diameter	D ₁	min	62.00
Feed hole diameter	D ₂	0.5	13.00
Sprocket hole position	E	0.1	1.75
Punch hole position	F	0.1	3.50
Punch hole pitch	P	0.1	4.00
Sprocket hole pitch	P ₀	0.1	4.00
Embossment center	P ₁	0.1	2.00
Overall tape thickness	T	0.1	0.23
Tape width	W	0.3	8.00
Reel width	W ₁	1.0	11.40

Note: Devices are packed in accordance with EIA standard RS-481-A and specifications listed above.

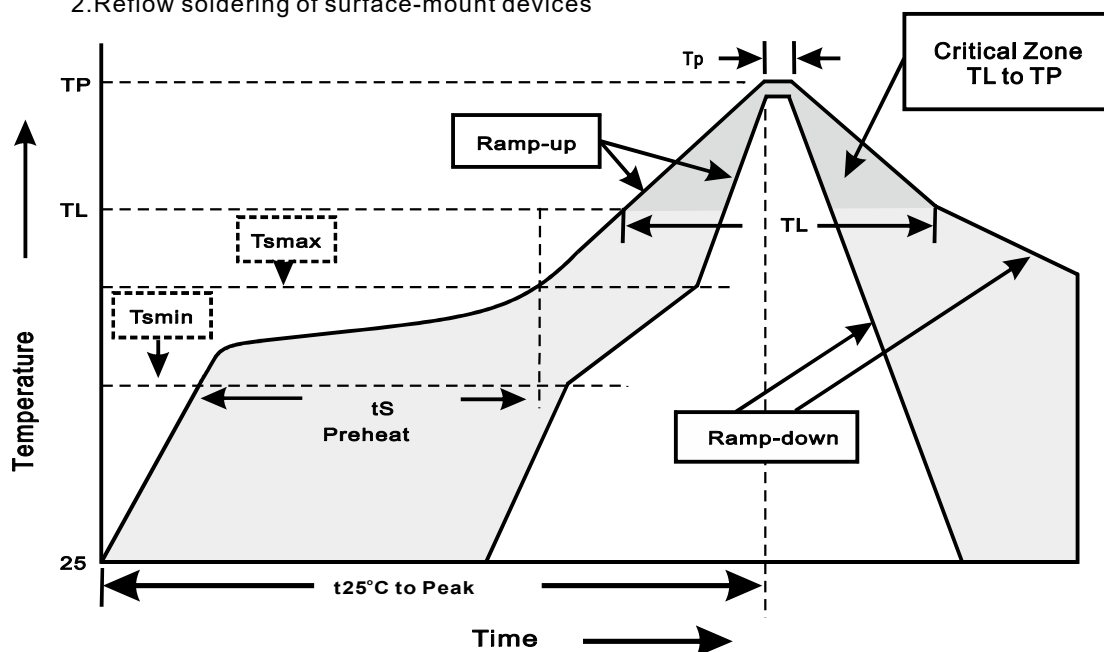
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Reel packing

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)
SOT-323	7"	3,000	4.0	30,000	183*123*183	178	382*257*387	240,000	9.5

Suggested thermal profiles for soldering processes

- 1.Storage environment: Temperature=5°C~40°C Humidity=55%±25%
- 2.Reflow soldering of surface-mount devices



3.Reflow soldering

Profile Feature	Soldering Condition
Average ramp-up rate(T_L to T_P)	$<3^{\circ}\text{C}/\text{sec}$
Preheat -Temperature Min(T_{smn}) -Temperature Max(T_{smx}) -Time(min to max)(t_s)	150°C 200°C 60~120sec
T_{smx} to T_L -Ramp-upRate	$<3^{\circ}\text{C}/\text{sec}$
Time maintained above: -Temperature(T_L) -Time(t_L)	217°C 60~260sec
Peak Temperature(T_P)	255°C-0/+5°C
Time within 5°C of actual Peak Temperature(t_P)	10~30sec
Ramp-down Rate	$<6^{\circ}\text{C}/\text{sec}$
Time 25°C to Peak Temperature	$<6\text{minutes}$