N242BT323

List

N242BT323

Surface Mount Bi-Directional TVS For ESD Protection Diode - 24V

Features

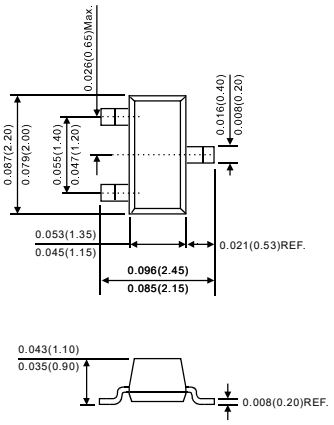
- 150W peak pulse power (8/20μs).
- Protects one data or power line.
- Complies with following standards:
  - IEC 61000-4-2 (ESD) immunity test :
    Air discharge: ±17kV.
    Contact discharge: ±12kV.
  - IEC61000-4-5 (Lightning) 4A (8/20μs).
- Lead-free parts meet RoHS requirements.
- Suffix "-H" indicates Halogen-free part, ex.N242BT323-H.

Applications

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

Package outline

SOT-323



Dimensions in inches and (millimeters)

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.

Maximum ratings (At T_A=25°C unless otherwise noted)

Parameter	Symbol	Value	Unit
Peak pulse power (8 / 20 μs)	P_{PK}	150	W
Peak pulse current (8 / 20 μs)	I_{PP}	4	A
ESD Per IEC 61000-4-2 (Air)	V_{ESD}	±17	KV
ESD Per IEC 61000-4-2 (Contact)		±12	
Operating temperature	T_{OPT}	-55 to +125	℃
Storage temperature	T_{STG}	-55 to +150	℃

Electrical characteristics (At T_A=25°C unless otherwise noted)

Parameter	Symbol	Conditions	Min.	Typ.	Max.	Unit
Reverse working voltage	V_{RWM}				24	V
Breakdown voltage	V_{BR}	I_T = 1mA	26.0		33.0	V
Reverse leakage current	I_R	V_{RWM} = 24V			500	nA
Clamping voltage	V_C	I_{PP} = 4A (8 x 20μs Pulse)		38	45	V
Junction capacitance	C_J	V_R = 0V, f = 1MHz		10	15	pF

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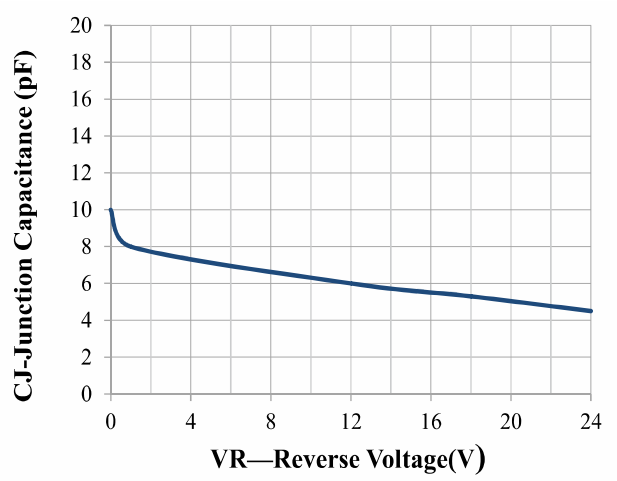
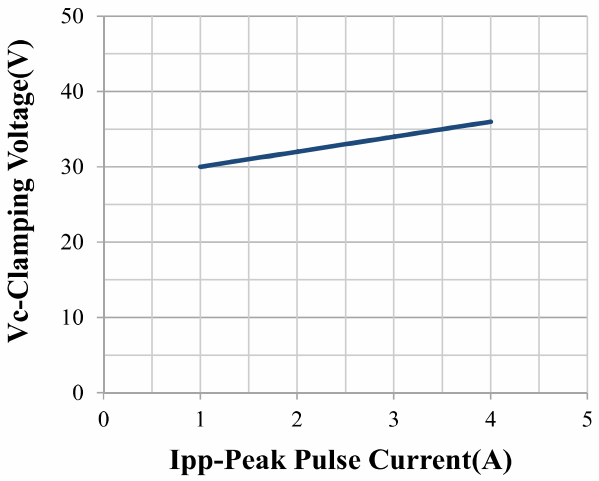
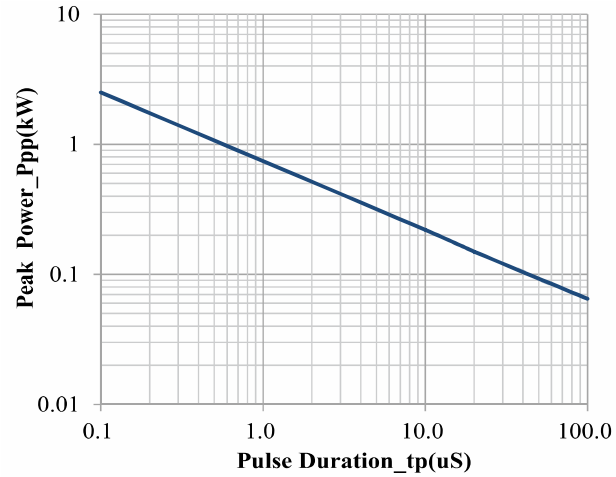
Rating and characteristic curves



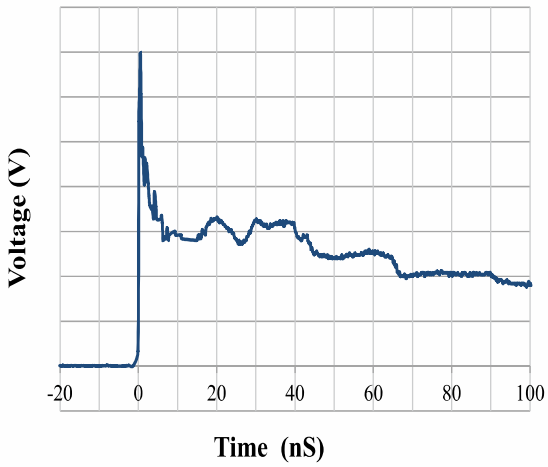
Junction Capacitance vs. Reverse Voltage



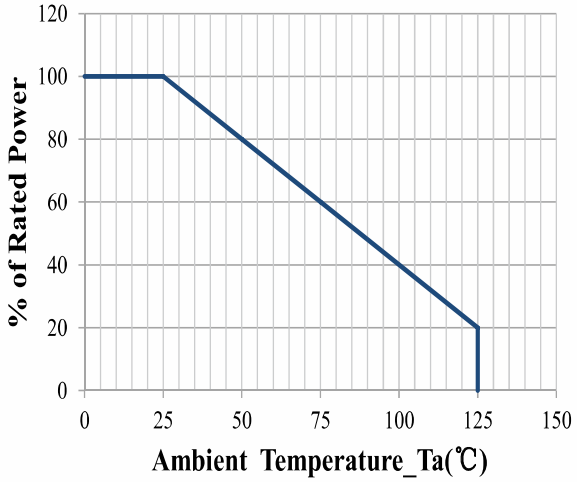
Clamping Voltage vs. Peak Pulse Current



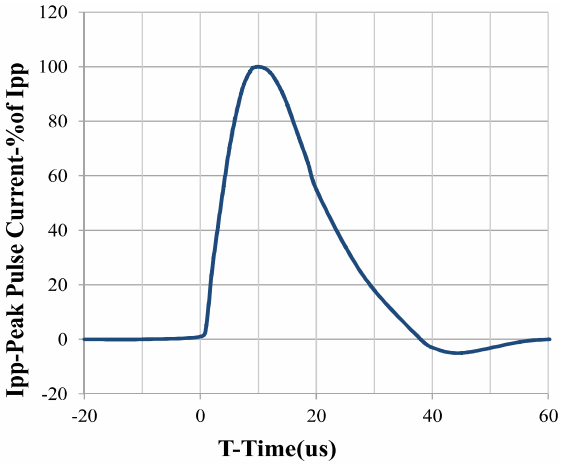
Peak Pulse Power vs. Pulse Time



IEC61000-4-2 Pulse Waveform



Power Derating Curve



8 X 20us Pulse Waveform

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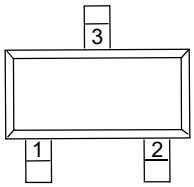
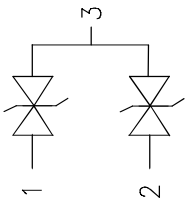
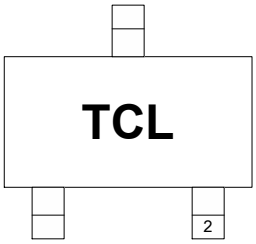
Pinning information

Pin Configuration	Simplified outline	Symbol
Pin 1, 2 Cathode Pin 3 Anode		

Marking



Suggested solder pad layout

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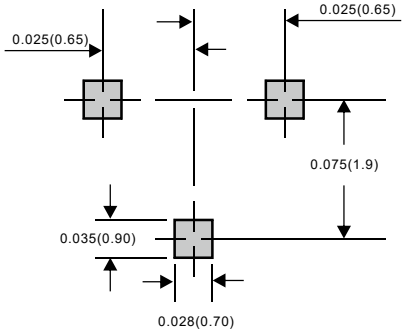

Dimensions in inches and (millimeters)

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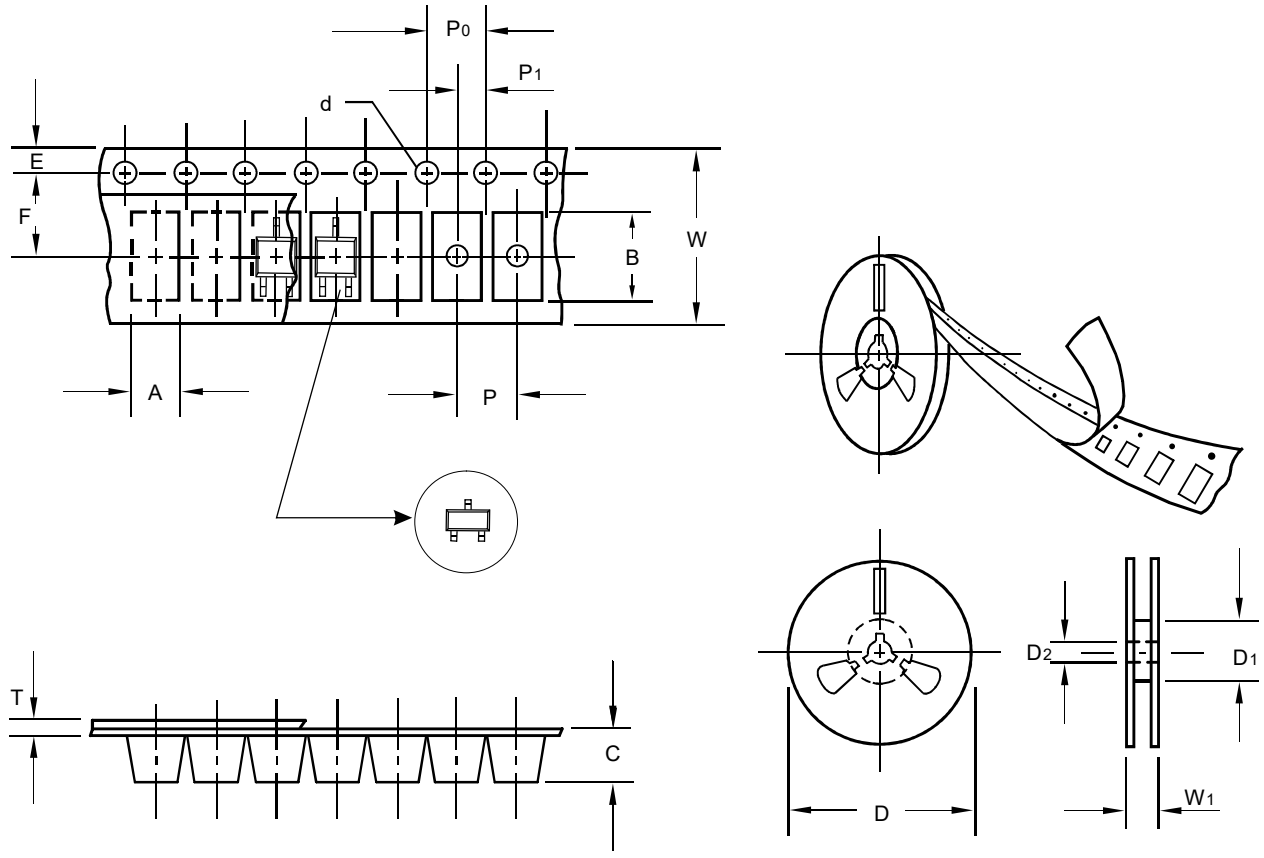
Packing information



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 accor dance with EIA standar RS-481-A and specifications listed above.

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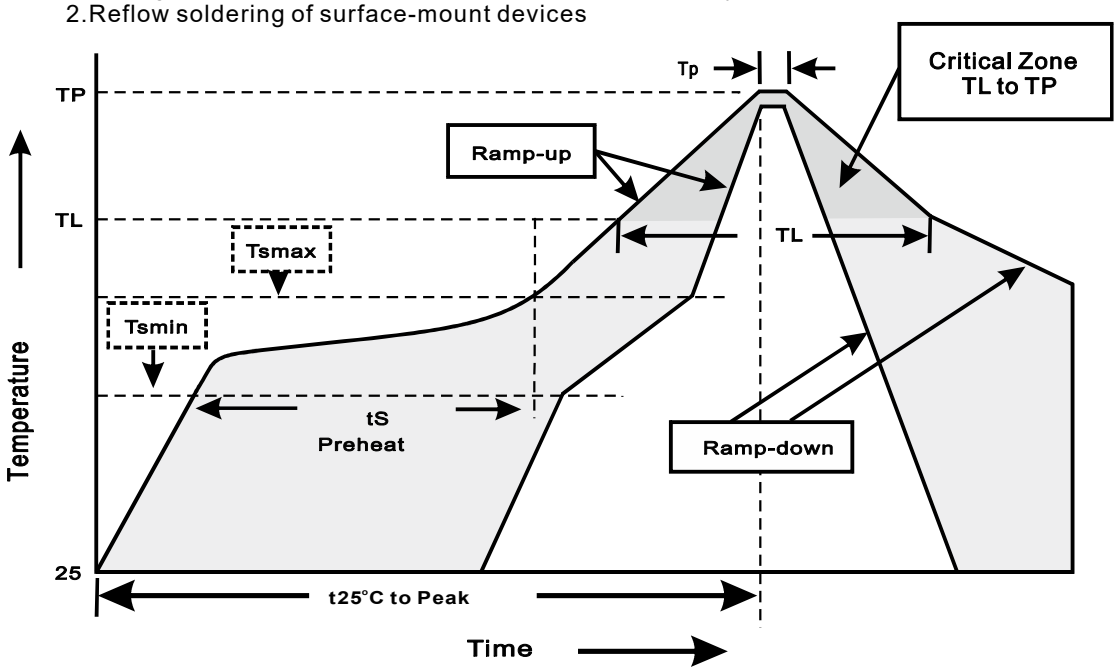
Reel packing

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°C/sec
Preheat -Temperature Min(Tsmin) -Temperature Max(Tsmax) -Time(min to max)(t_s)	 150°C 200°C 60~120sec
Tsmax to T_L -Ramp-upRate	 <3°C/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°C/sec
Time 25°C to Peak Temperature	<6minutes