

N242BT23C-Q1-H

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N242BT23C-Q1-H

350W 2-Channel Normal Capacitance Bi-Directional TVS for ESD Protection : 24V

Features

- High temperature soldering guaranteed: 260°C/10seconds.
- Complies with following standards:
 - IEC 61000-4-2 (ESD) $\pm 15\text{kV}$ (Air), $\pm 8\text{kV}$ (Contact).
 - IEC 61000-4-4 (EFT) 40A (5/50ns).
- Qualified to AEC-Q101 standards for high reliability.
- Lead-free parts meet RoHS requirements.
- Halogen-free (IEC61249-2-21).

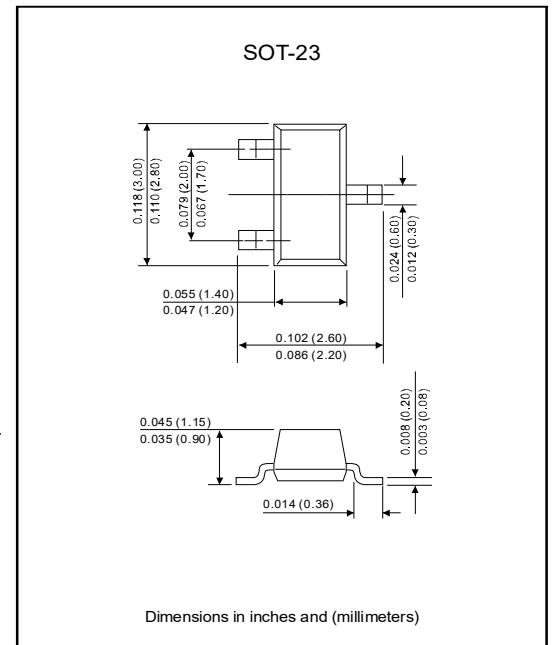
Applications

- Cell phone handsets, accessories, notebooks, desktops, servers.
- Personal digital assistants (PDA's), and microprocessor based equipment.
- Portable instrumentation, networking, telecom, serial, and ports.
- Peripherals.

Mechanical data

- Epoxy:UL94-V0 rated flame retardant.
- Case : Molded plastic, SOT-23.
- Weight : Approximated 10mg.

Package outline



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

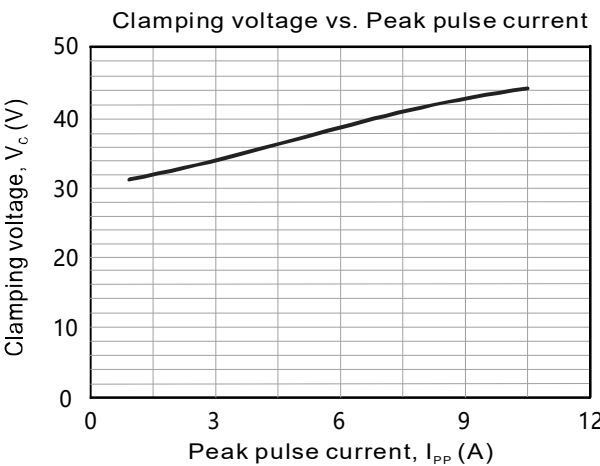
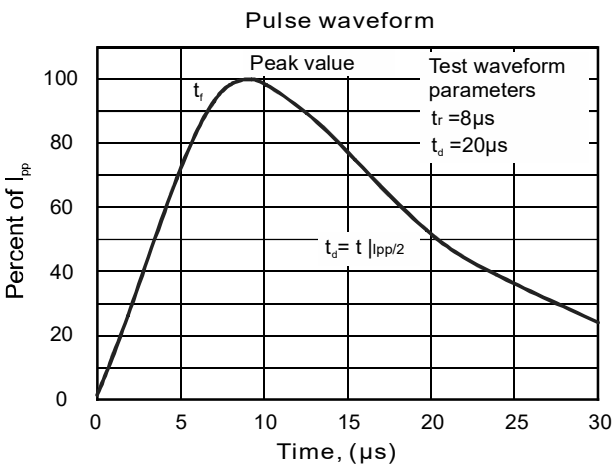
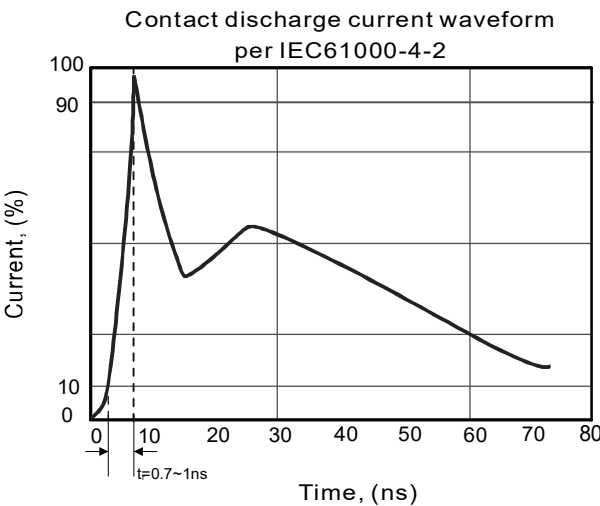
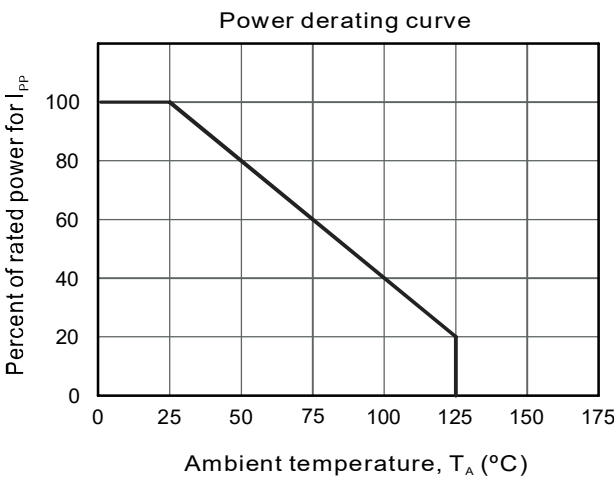
Parameter	Symbol	Ratings	Unit
Peak pulse power (8/20 μs)	P_{PP}	350	W
ESD per IEC 61000-4-2 (Air) (Contact)	V_{ESD}	± 15	KV
		± 8	
Operating temperature	T_J	+150	$^\circ\text{C}$
Storage temperature range	T_{STG}	-55 to +150	$^\circ\text{C}$

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

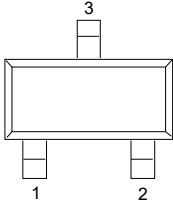
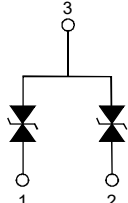
Parameter	Condition	Symbol	Min.	Typ.	Max.	Unit
Reverse stand-off voltage		V_{RWM}			24	V
Reverse breakdown voltage	$I_T=1\text{mA}$	V_{BR}	26.7			V
Reverse leakage current	$V=V_{RWM}, T_A=25^{\circ}\text{C}$	I_R			1	μA
Clamping voltage	$I_{PP}=1\text{A}, t_p=8/20\mu\text{s}$	V_C			43	V
	$I_{PP}=7\text{A}, t_p=8/20\mu\text{s}$				52	
Junction capacitance	$V_R=0\text{V}, f=1.0\text{MHz}$	C_J			50	pF

Rating and characteristic curves



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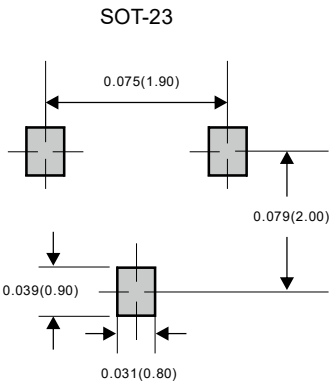
Pinning information

Pin	Simplified outline	Symbol
Bi-Directional		

Marking

Type number	Marking code
N242BT23C-Q1-H	24B

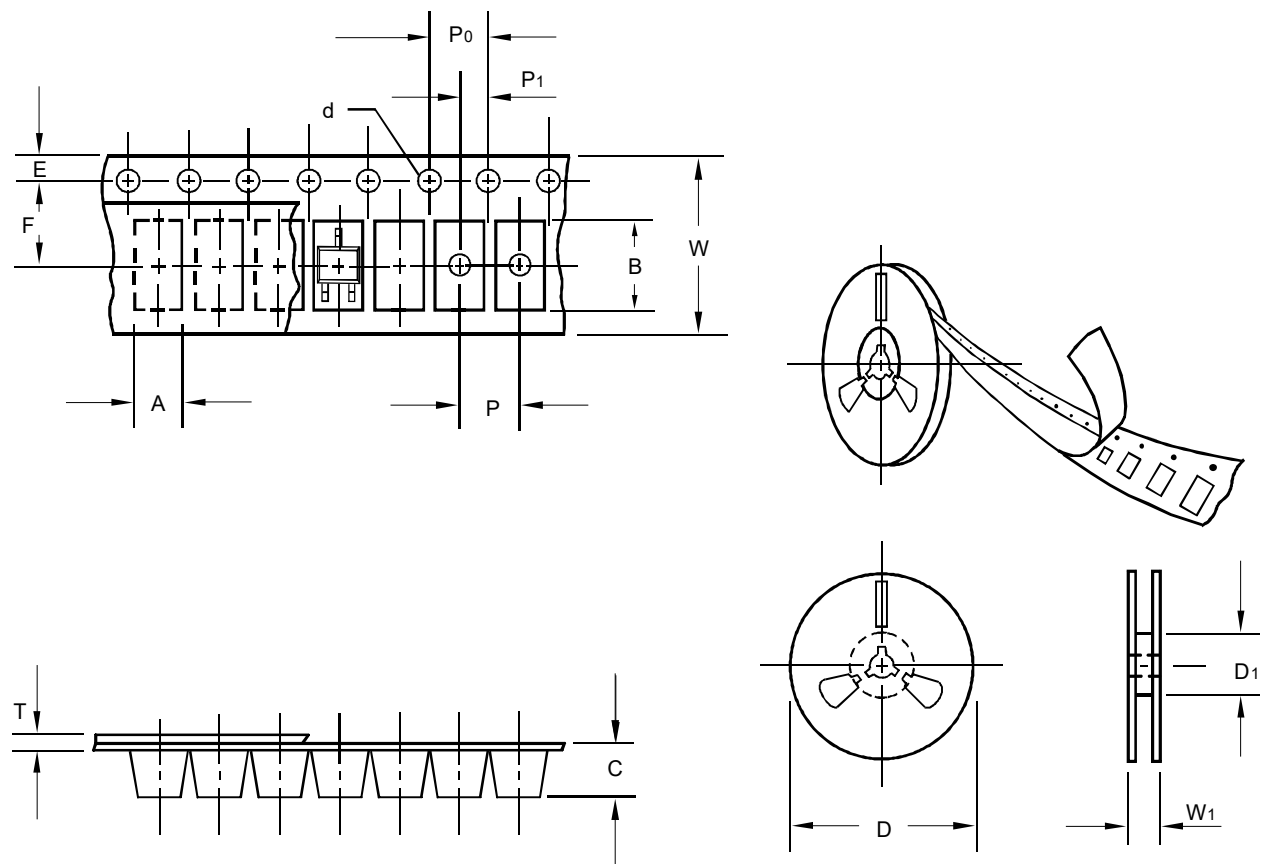
Suggested solder pad layout



Dimensions in inches and (millimeters)

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Packing information



unit:mm

Item	Symbol	Tolerance	SOT-23
Carrier width	A	0.5	3.20
Carrier length	B	0.5	2.77
Carrier depth	C	0.5	1.22
Sprocket hole	d	0.5	1.55
13" Reel outside diameter	D	2.0	-
13" Reel inner diameter	D1	min	-
7" Reel outside diameter	D	5.0	178.00
7" Reel inner diameter	D1	min	52.50
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	P0	0.1	4.00
Embossment center	P1	0.1	2.00
Tape width	W	0.5	8.00
Reel width	W1	5.0	12.40

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

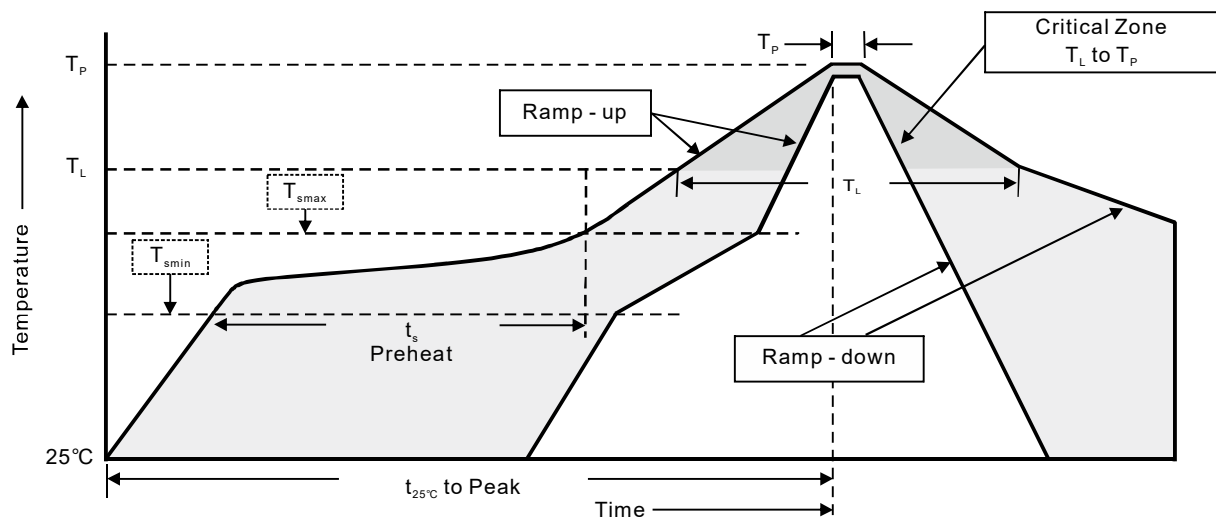
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Reel packing

PACKAGE	REEL SIZE	REEL (pcs)	COMPONENT SPACING (m/m)	BOX (pcs)	REEL DIA, (m/m)	CARTON (pcs)
SOT-23	7"	3,000	4.0	30,000	178	240,000

Suggested thermal profiles for soldering processes

- Storage environment : Temperature = 5°C ~ 40°C, Humidity = 55%, ±25%.
- 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 (T_{smin}) - Temperature Max (T_{smax}) - Time (Min to Max) (t_s)	150°C 200°C 60 ~ 120 sec
T_{smax} to T_L - Ramp-up rate	< 3 °C / sec
Time maintained above : - Temperature (T_L) - Time (T_L)	217°C 60 ~ 260 sec
Peak temperature (T_p)	255 °C -0 / +5°C
Time with 5°C of actual peak temperature (T_p)	10 ~ 30 sec
Ramp-down rate	< 6°C / sec
Time 25°C to peak temperature	< 6 minutes