

N03BT1006H Thru N36BT1006H

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N03BT1006H Thru N36BT1006H

**Surface Mount TVS Bi-Directional
For ESD Protection : 3.3V ~ 36V**

Features

- Solid-state silicon-avalanche technology.
- Low clamping voltage.
- Low leakage current.
- Protection one data/power line to :
IEC 61000-4-2 ± 30 KV contact ± 30 KV air.
IEC 61000-4-4 (EFT) 40A (5/50ns).
- We declare that the material of product compliance with RoHs requirements.
- Suffix "-H" indicates Halogen-free parts, ex.N03BT10006H-H.

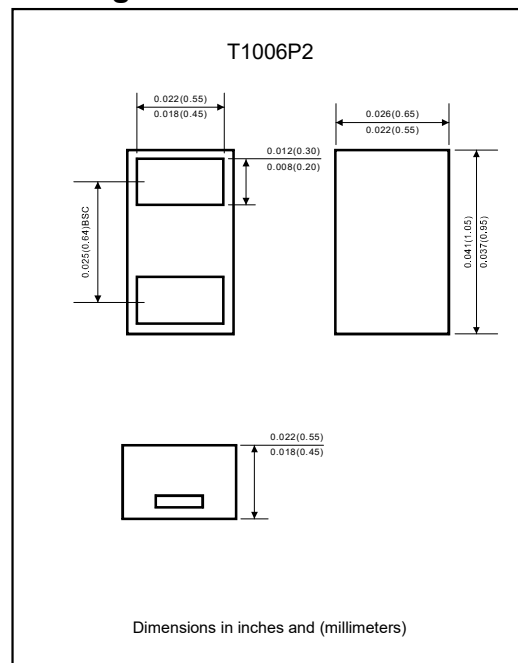
Applications

- Cellular Handsets & Accessories.
- Personal Digital Assistants (PDAs).
- Notebooks & Hand-held.
- Portable Instrumentation.

Mechanical data

- Case : T1006P2 (Plastic package).
- Molding compound flame ability rating : UL94V-0.
- Terminals : High temperature soldering guaranteed 260°C/10sec. at termails.
- Weight : Approximated 0.73 mg.

Package outline



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

Parameter	Symbol	Value	Unit
Peak pulse current (8/20 μs)	I_{PP}	See tabel	A
ESD Per IEC 61000-4-2 (Air)	V_{ESD}	± 30	KV
ESD Per IEC 61000-4-2 (Contact)		± 30	
Operating temperature range	T_J	-55 ~ +125	$^\circ\text{C}$
Storage temperature	T_{STG}	-55 to +150	$^\circ\text{C}$
Maximum lead temperature for soldering during 10s	T_L	260	$^\circ\text{C}$

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

Part Number	V_{RWM} (Max)	V_B (Min, @ I_T)	I_T	V_C (Max, @ I_{PP})	I_{PP}	I_R (Max)	C_T (Typ)
	V	V	mA	V	A	μA	pF
N03BT1006H	3.3	3.5	1	8	11	1	15
N05BT1006H	5.0	5.6	1	10	10	1	15
N08BT1006H	8.0	8.5	1	22	19	1	45
N12BT1006H	12	13.3	1	20	8	1	10
N15BT1006H	15	16.7	1	32	10	1	25
N18BT1006H	18	19.5	1	35	5.5	1	15
N24BT1006H	24	26.7	1	44	6	1	10
N36BT1006H	36	40	1	70	6	1	15

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Typical performance characteristics

Fig.1 Peak Pulse Power Rating Curve

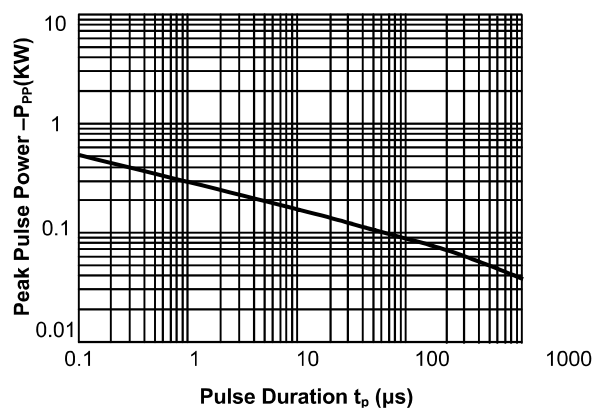


Fig.2 Pulse Derating Curve

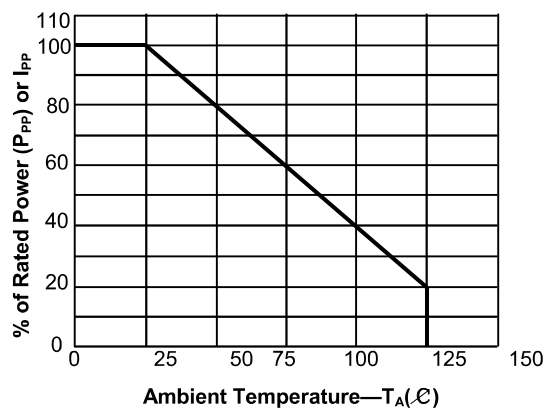


Fig.3 Pulse Waveform-8/20μs

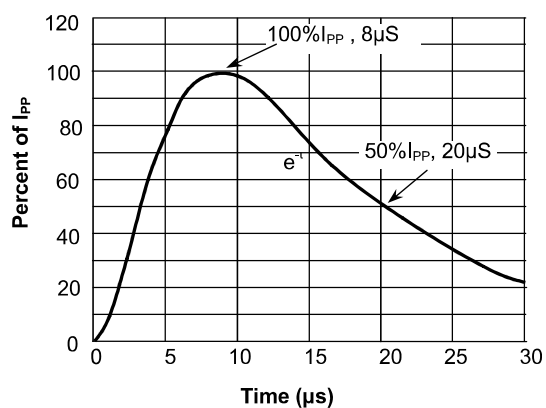
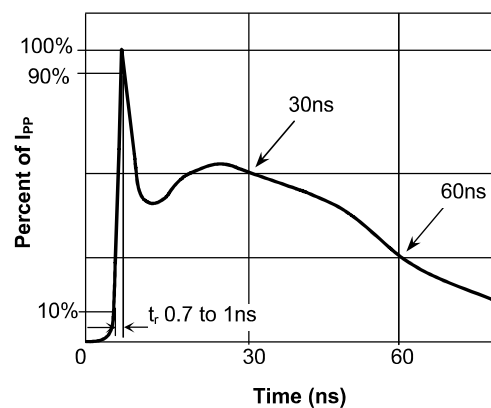


Fig.4 Pulse Waveform-ESD(IEC61000-4-2)

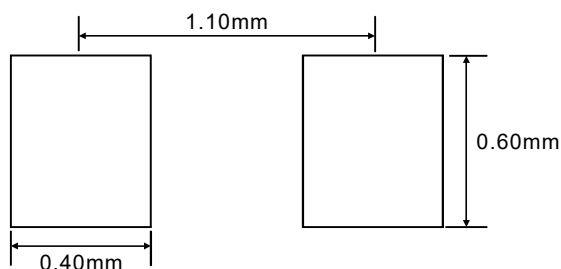


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Marking information

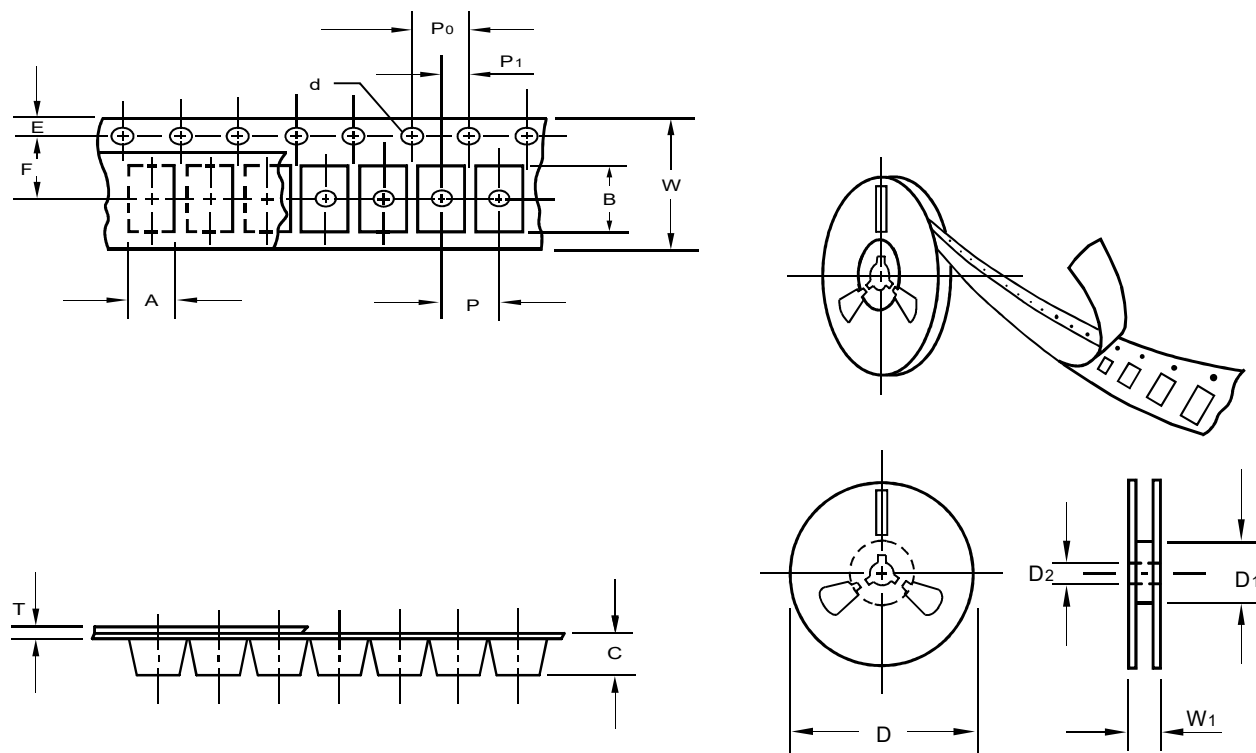
Part Number	Marking Code
N03BT1006H	D3 or 3E
N05BT1006H	D5 or CX
N08BT1006H	D8 or 8B
N12BT1006H	DD or 12B
N15BT1006H	DE or LB
N18BT1006H	DF or ET
N24BT1006H	DH or CB
N36BT1006H	DN or DB

Suggested solder pad layout



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Suggested solder pad layout



unit:mm

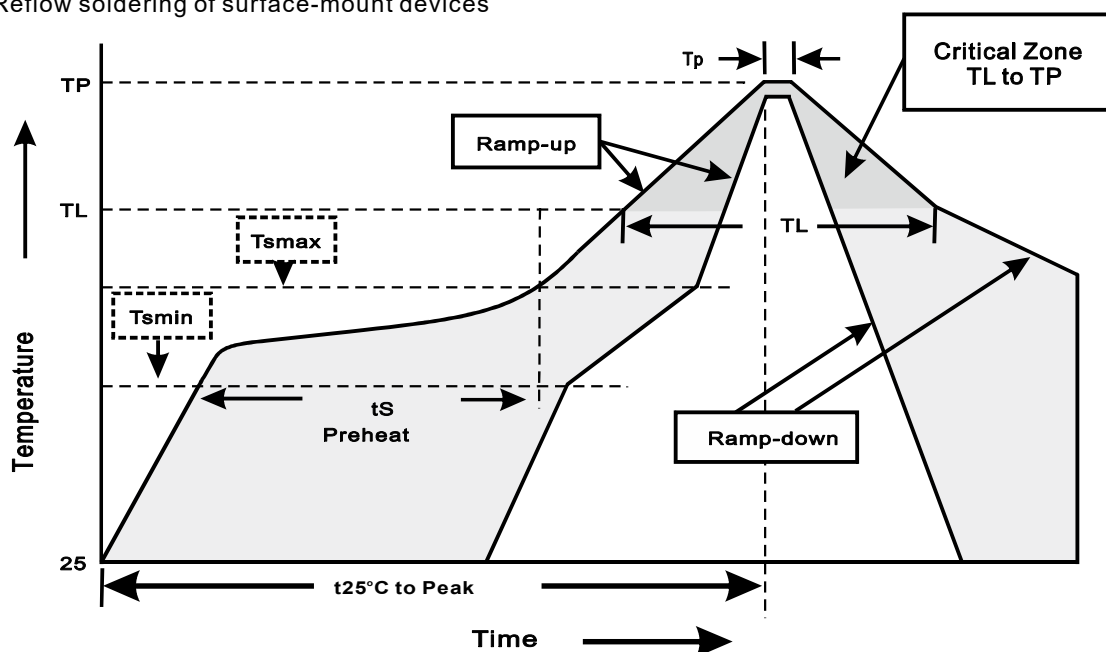
Item	Symbol	Tolerance	T1006P2
Carrier width	A	0.1	0.75
Carrier length	B	0.1	1.15
Carrier depth	C	0.1	0.60
Sprocket hole	d	0.05	1.55
7" Reel outside diameter	D	1.0	178.00
7" Reel inner diameter	D1	Min.	60.0
Feed hole diameter	D2	0.2	13.0
Sprocket hole position	E	0.1	1.75
Punch hole position	F	0.1	3.50
Punch hole pitch	P	0.1	4.00
Sprocket hole pitch	P0	0.1	4.00
Embossment center	P1	0.05	2.00
Overall tape thickness	T	0.05	0.23
Tape width	W	0.2	8.00
Reel width	W1	Max.	13.5

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

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)
T1006P2	7"	10,000	4.0	100,000	183*123*183	178	382*257*387	800,000	15.0

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



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