

N12UT1006B

List

List.....	1
Package outline.....	2
Features.....	2
Applications.....	2
Mechanical data.....	2
Maximum ratings	2
Electrical characteristics.....	2
Typical performance characteristics.....	3
Marking information.....	4
Suggested solder pad layout.....	4
Package Information.....	5
Reel packing.....	6
Suggested thermal profiles for soldering processes.....	6

N12UT1006B

Surface Mount TVS Uni-Directional For ESD Protection : 12.0V

Features

- 350Watts peak pulse power per line ($t_p=8/20\mu s$).
- Protects one I/O or power line.
- Low leakage current.
- IEC 61000-4-2 (ESD) immunity test : Air discharge: $\pm 30kV$.
Contact discharge: $\pm 30kV$.
- 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.N12UT1006B-H.

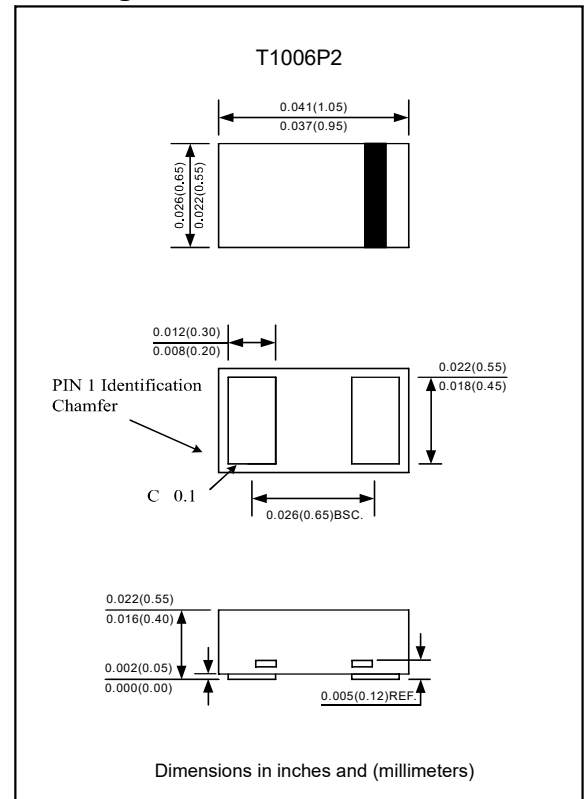
Applications

- Cell phone handsets and accessories.
- Microprocessor based equipment.
- Notebooks, Desktops, and servers.
- Personal digital assistants (PDAs)

Mechanical data

- T1006P2 package
- Molding compound flammability rating : UL94V-0
- Making part number, data code.
- Packaging : Tape and reel.
- Weight : Approximated 0.73 mg.

Package outline



Maximum ratings (at $T_A=25^\circ C$ unless otherwise noted)

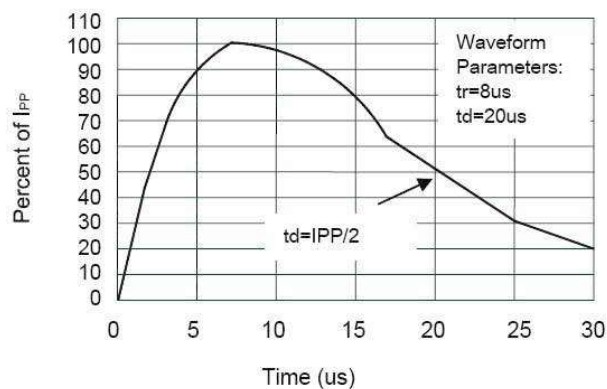
Parameter	Symbol	Value	Unit
Peak pulse power (8/20 μs)	P_{PK}	350	W
Peak pulse current (8/20 μs)	I_{PP}	13	A
Electrostatic discharge voltage (IEC61000-4-2 Contact & Air)	V_{ESD}	± 30	KV
Operating temperature range	T_J	-55 ~ +125	$^\circ C$
Storage temperature	T_{STG}	-55 to +150	$^\circ C$

Electrical characteristics (at $T_A=25^\circ C$ unless otherwise noted)

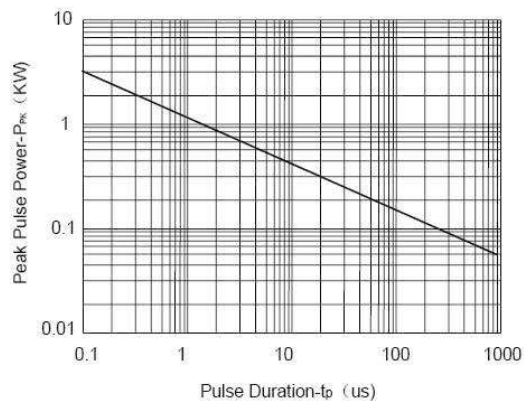
Parameter	Symbol	Conditions	Min.	Typ.	Max.	Unit
Reverse stand-off voltage	V_{RWM}				12.0	V
Reverse Breakdown voltage	V_{BR}	$I_T = 1mA$	13.3			V
Reverse leakage current	I_R	$V_{RWM} = 12V$			100	nA
Clamping voltage	V_{C1}	$I_{PP1} = 1A$ ($t_p=8 / 20\mu s$)			19	V
Clamping voltage	V_{C2}	$I_{PP2} = 13A$ ($t_p=8 / 20\mu s$)			32	V
Junction capacitance	C_J	$V_R=0V, f=1MHz$			120	pF

N12UT1006B

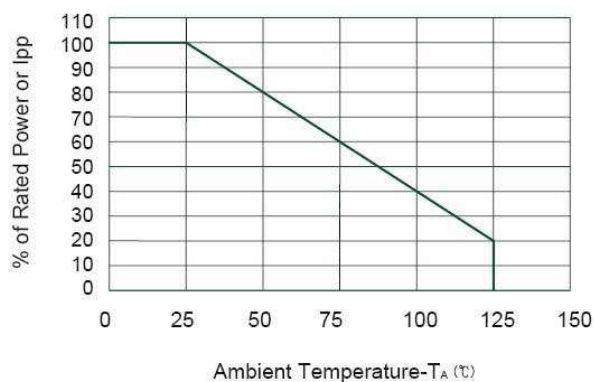
Typical performance characteristics ($T_A=25^\circ\text{C}$ Unless otherwise specified)



Pulse Waveform



Non-Repetitive Peak Pulse Power vs. Pulse Time



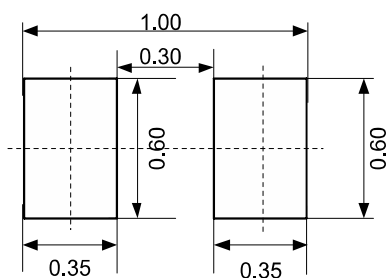
Power Derating Curve

N12UT1006B

Marking Information

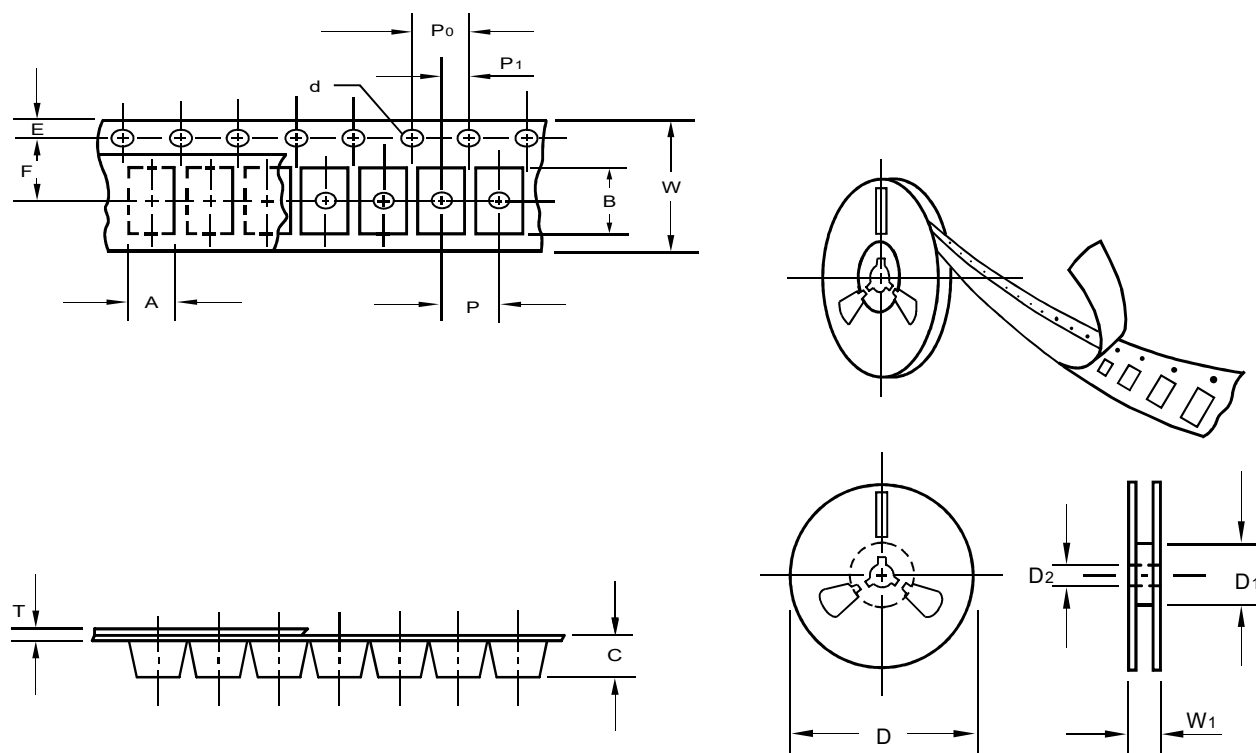


Suggested solder pad layout



N12UT1006B

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.

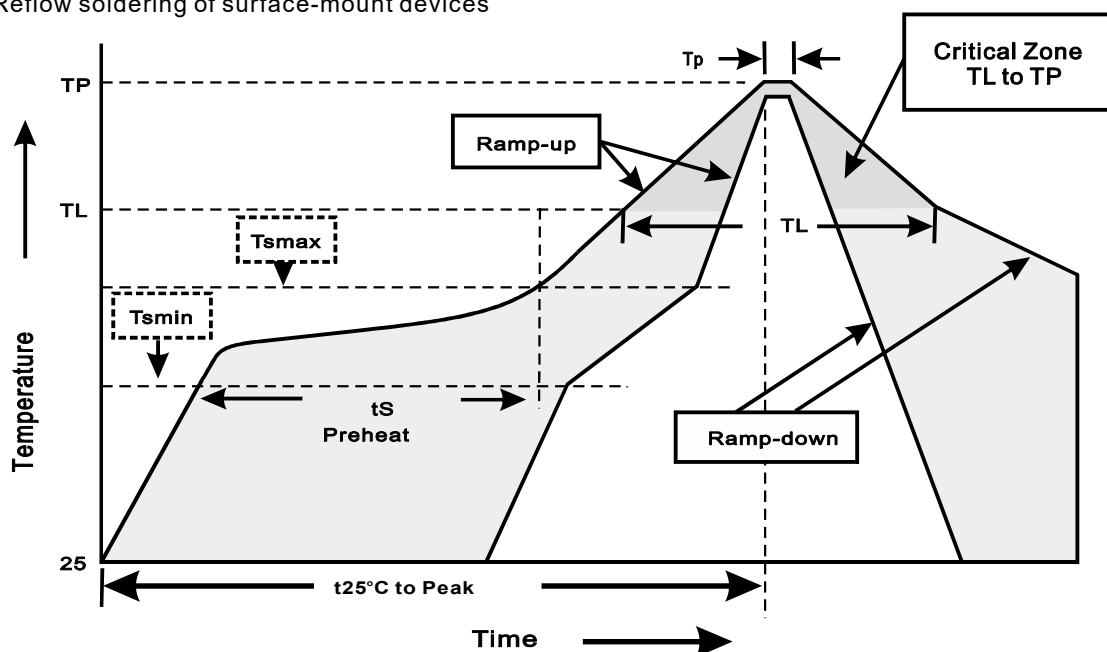
N12UT1006B

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

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(T _{smmin}) -Temperature Max(T _{smmax}) -Time(min to max)(t _s)	150°C 200°C 60~120sec
T _{smmax} 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