

N07BT1006

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
Reel packing.....	4
Package Information.....	5
Suggested thermal profiles for soldering processes.....	6

N07BT1006

Surface Mount TVS Bi-Directional For ESD Protection : 7.0V

Features

- Package optimized for high-speed lines.
- Protects one data, control or power line.
- Low clamping voltage.
- Low leakage current.
- IEC 61000-4-2 (ESD) $\pm 30\text{kV}$ (Air), $\pm 30\text{kV}$ (Contact).
- 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. N07BT1006-H.

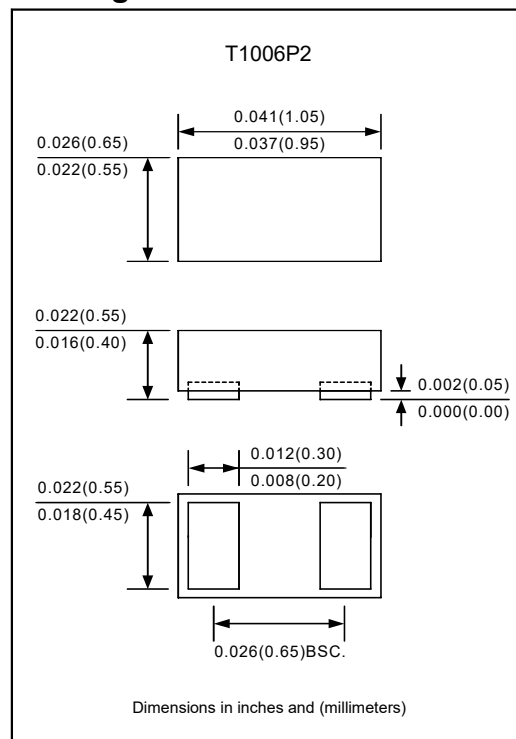
Applications

- Portable Electronics.
- Desktops, Servers and Notebooks.
- Cellular Phones

Mechanical data

- T1006P2 package.
- Molding compound flame ability rating : UL94V-0.
- Making part number, data code.
- Packaging : Tape and reel per EIA 481.
- 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 ($t_p = 8/20\mu\text{s}$)	I_{PP}	8	A
ESD Per IEC 61000-4-2 (Air)	V_{ESD}	± 30	KV
ESD Per IEC 61000-4-2 (Contact)		± 30	
Operating temperature range	T_{OPT}	-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)

Parameter	Symbol	Conditions	Min.	Typ.	Max.	Unit
Reverse working voltage	V_{RWM}			5.0	7.0	V
Reverse leakage current	I_R	$V_{RWM} = 7.0\text{V}$		0.01	0.1	μA
Trigger Voltage	V_{I1}	$I_{I1} = 10\text{nA}$	7.5	8.0	9.0	V
Holding Voltage	V_h	$I_h = 50\text{mA}$	6.5		7.5	V
Clamping Voltage 1	V_{C1}	$I_{PP1} = 1\text{A}$, $t_p = 8/20\mu\text{s}$			7.0	V
Clamping voltage 2	V_{C2}	$I_{PP2} = 4\text{A}$, $t_p = 8/20\mu\text{s}$			8.5	V
Reverse Clamping Voltage	V_{CR}	$I_{PP3} = 8\text{A}$, $t_p = 8/20\mu\text{s}$			10.0	V
Parasitic Capacitance	C_{ESD}	$V_R = 0\text{V}$, $f = 1\text{MHz}$		18	25	pF

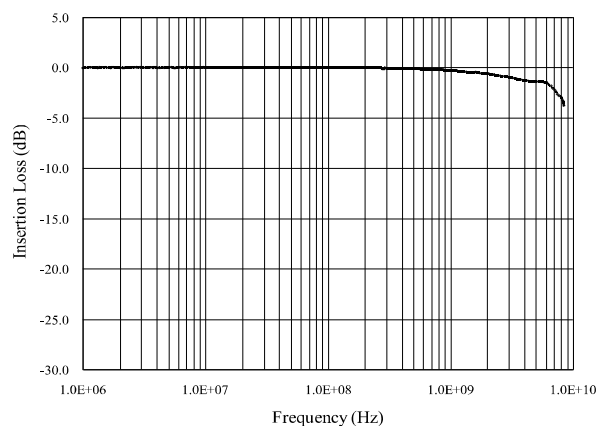
N07BT1006

Typical performance characteristics

TLP Measurement of I/O _1 to I/O_2

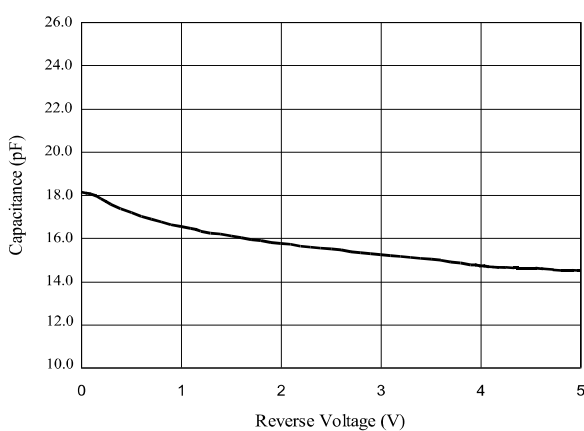


Insertion Loss S21 of I/O1 to I/O2

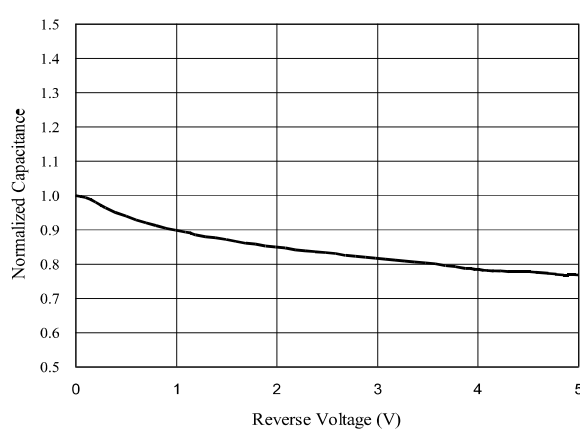
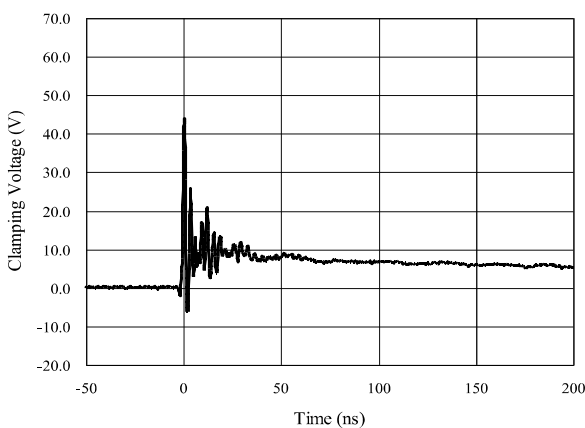
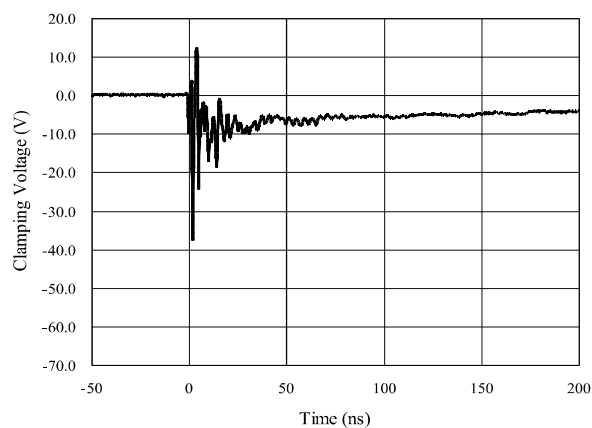


Capacitance vs. Voltage of I/O_1 to I/O_2 (f = 1MHz)

Capacitance vs. Reverse Voltage

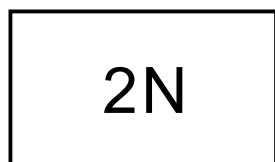


Normalized Capacitance vs. Reverse Voltage

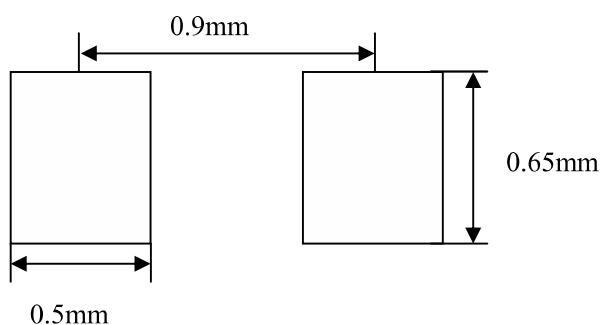
ESD Clamping of I/O _1 to I/O_2
(+8kV Contact per IEC 61000-4-2)ESD Clamping of I/O_1 to I/O_2
(-8kV Contact per IEC 61000-4-2)

N07BT1006

Marking Information



Suggested solder pad layout

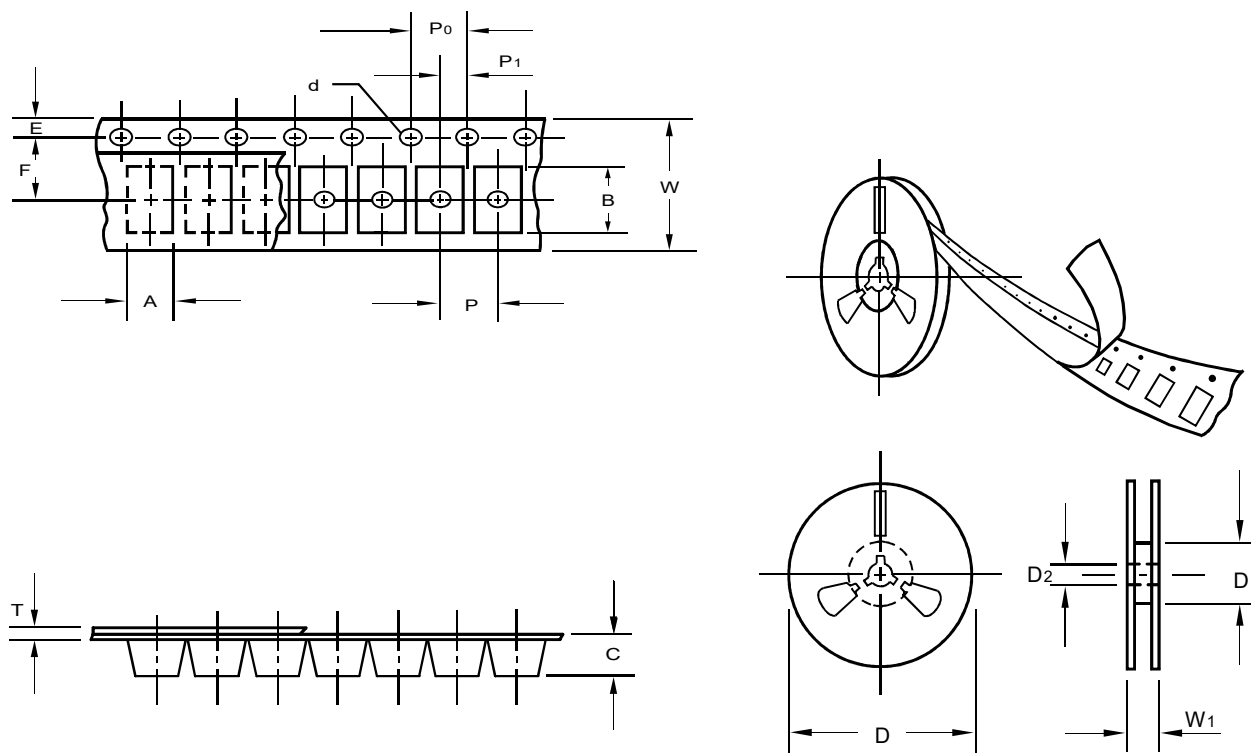


Reel packing

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

N07BT1006

Package Information



unit:mm

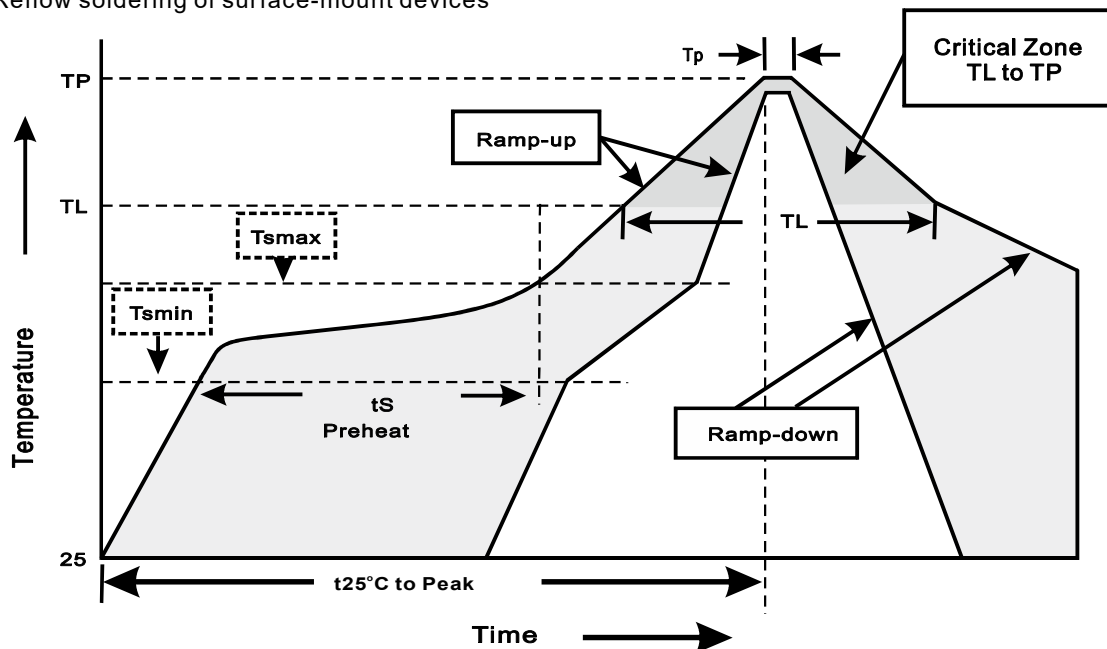
Item	Symbol	Tolerance	T1006P2
Carrier width	A	0.1	0.75
Carrier length	B	0.1	1.15
Carrier depth	C	0.1	0.60
Sprocket hole	d	0.05	1.55
7" Reel outside diameter	D	1.0	178.00
7" Reel inner diameter	D1	Min.	60.0
Feed hole diameter	D2	0.2	13.0
Sprocket hole position	E	0.1	1.75
Punch hole position	F	0.1	3.50
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.

N07BT1006

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