

N05BT1006K

List

List.....	1
Package outline.....	2
Features.....	2
Mechanical data.....	2
Applications.....	2
Maximum ratings	2
Electrical characteristics.....	2
Rating and characteristic curves.....	3
Pinning information.....	4
Marking.....	4
Suggested solder pad layout.....	4
Packing information.....	5
Reel packing.....	6
Suggested thermal profiles for soldering processes.....	6

N05BT1006K

Bi-Directional TVS For ESD Protection 5.0V

Features

- Protects one data or power line.
- Complies with following standards
IEC 61000-4-2 (ESD) $\pm 30\text{kV}$ (Air), $\pm 30\text{kV}$ (Contact).
IEC 61000-4-5 (Lightning) 5A (8/20 μs).
- Lead-free parts meet RoHS requirements.
- Suffix "-H" indicates Halogen-free parts, ex. N05BT1006K-H.

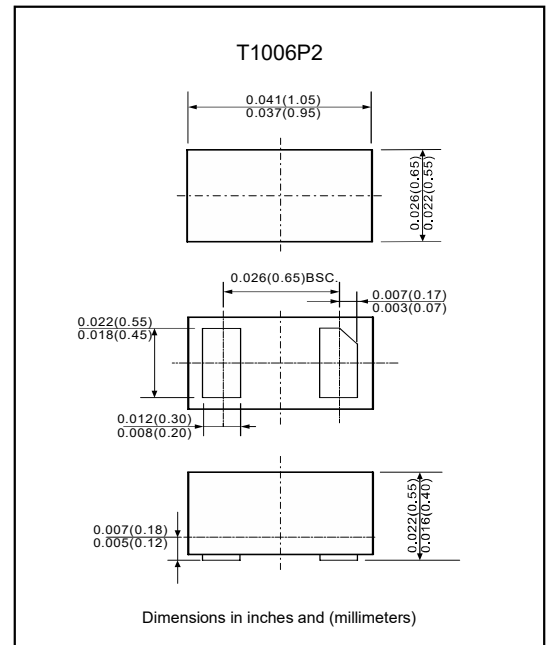
Applications

- Cell phone handsets and accessories.
- Personal digital assistants (PDA's).
- Notebooks, handhelds and digital cameras.
- Portable instrumentation.
- Peripherals, audio players, keypads, side keys and LCD displays.

Mechanical data

- Epoxy: UL94-V0 rated flame retardant.
- Case: T1006P2 package.

Package outline



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

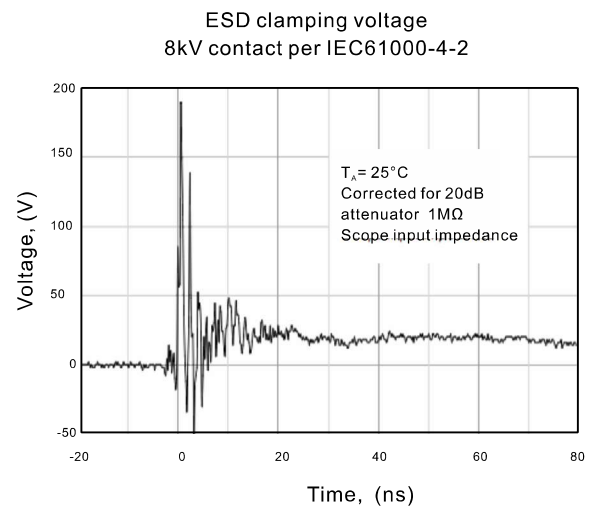
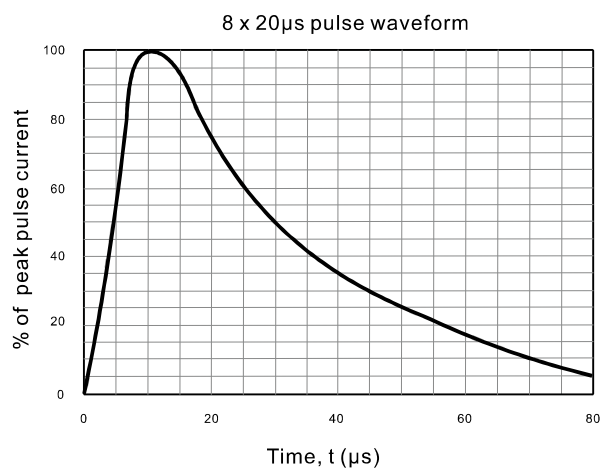
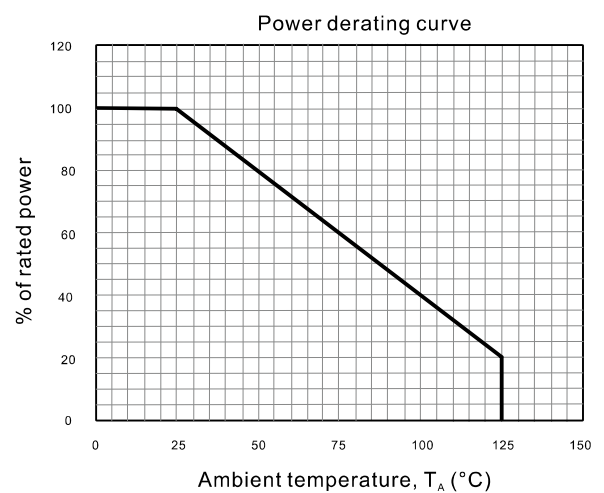
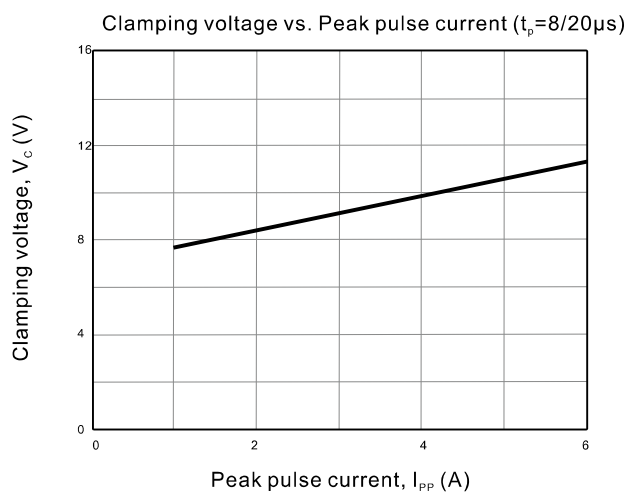
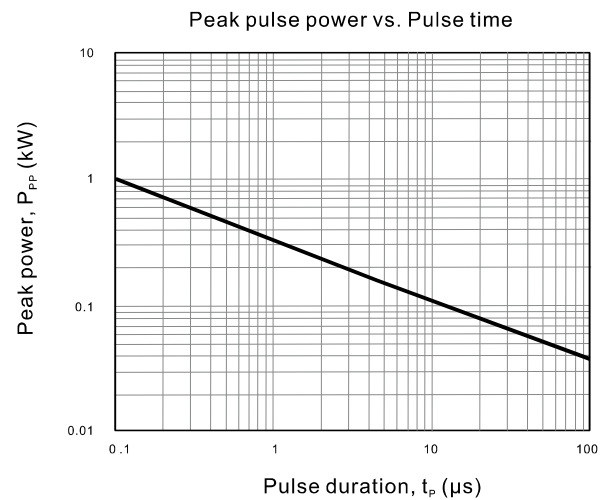
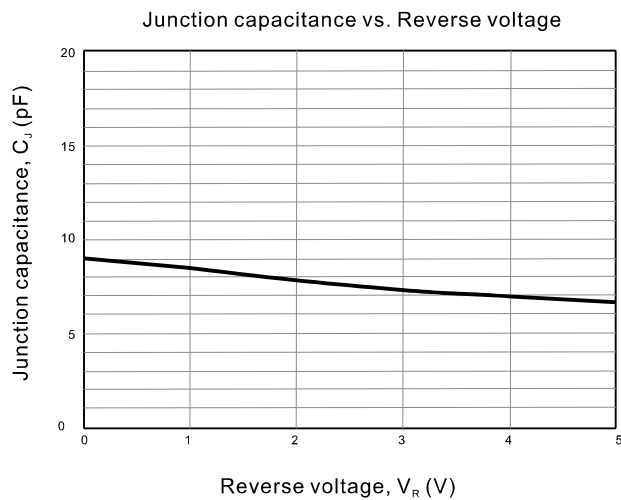
Parameter	Symbol	Value	Unit
Peak pulse power (8/20 μs)	P_{PP}	90	W
Peak pulse current (8/20 μs)	I_{PP}	6	A
ESD per IEC 61000-4-2 (Air)	V_{ESD}	± 30	kV
ESD per IEC 61000-4-2 (Contact)		± 30	
Junction temperature	T_J	+125	$^\circ\text{C}$
Storage temperature range	T_{STG}	-55 to +150	$^\circ\text{C}$

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

Parameter	Conditions	Symbol	Min.	Typ.	Max.	Unit
Reverse stand-off voltage		V_{RWM}			5	V
Breakdown voltage	$I_T=1\text{mA}$	V_{BR}	6		8	V
Reverse leakage current	$V_{RWM}=5\text{V}$	I_R			0.2	μA
Clamping voltage	$I_{PP}=1\text{A}$	V_C			10	V
	$I_{PP}=6\text{A}$				15	
Junction capacitance	$V_R=0\text{V}$, $f=1.0\text{MHz}$	C_J		9		pF

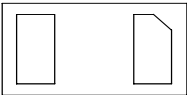
N05BT1006K

Rating and characteristic curves



N05BT1006K

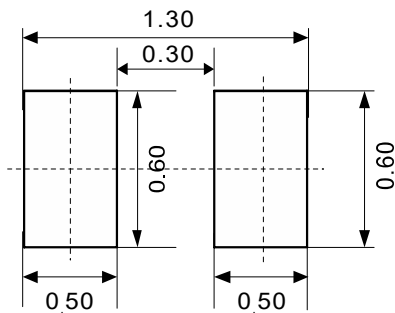
Pinning information

Pin	Simplified outline	Symbol
Bi-directional	 Top view  Bottom view	

Marking

Type number	Marking code
N05BT1006K	PB

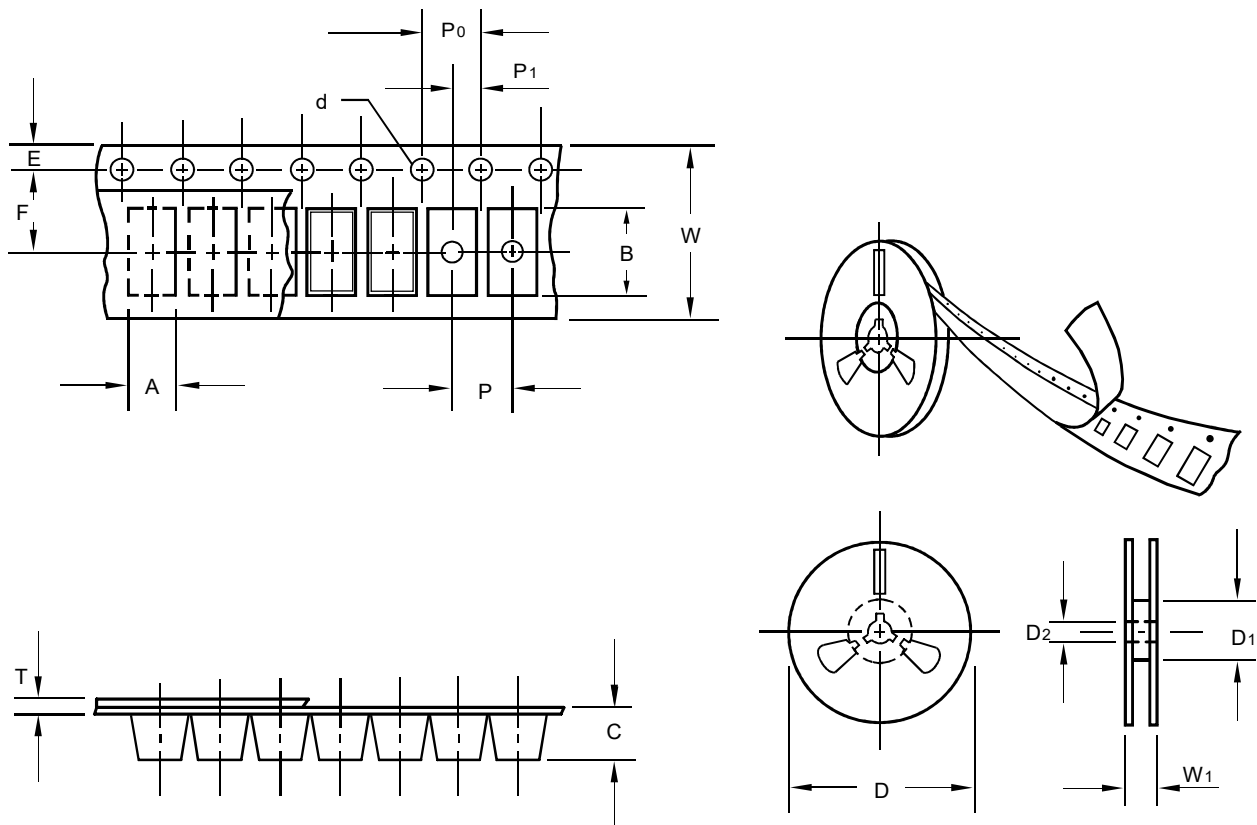
Suggested solder pad layout



Dimensions in millimeters

N05BT1006K

Packing information



unit:mm

Item	Symbol	Tolerance	T1006P2
Carrier width	A	0.1	0.66
Carrier length	B	0.1	1.15
Carrier depth	C	0.1	0.66
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	55.00
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	2.00
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	9.50

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

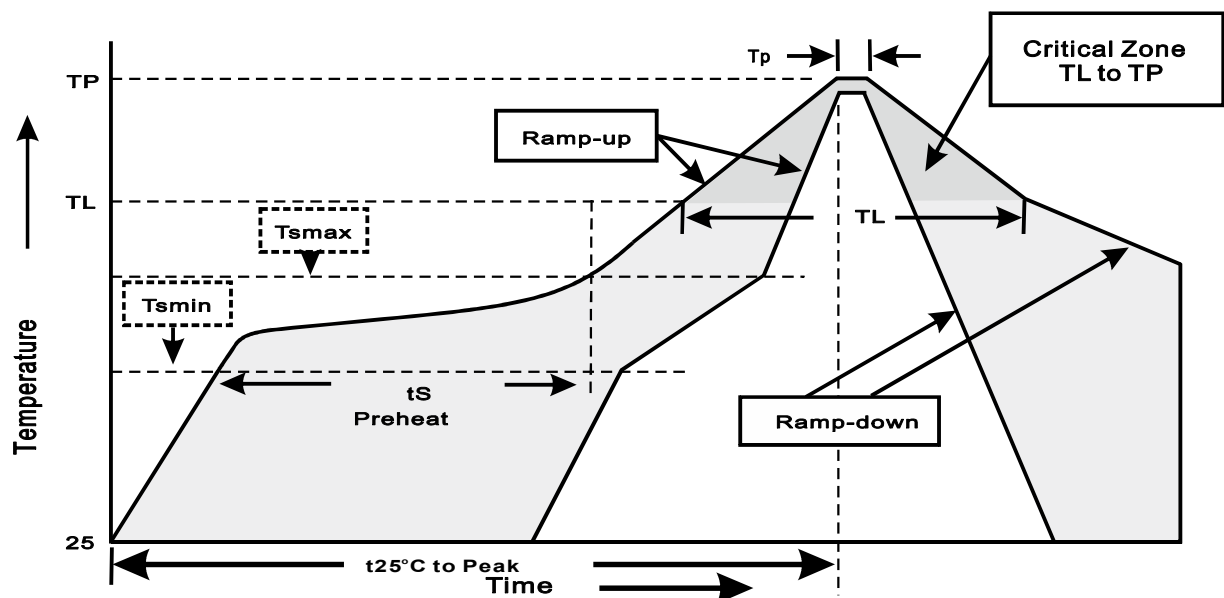
N05BT1006K

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

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 60~120sec
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