

N06BT1006

List

List.....	1
Package outline.....	2
Features.....	2
Applications.....	2
Mechanical data.....	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
High reliability test capabilities.....	7

N06BT1006

Surface Mount Bi-Directional TVS For ESD Protection Diode 6.0V

Features

- Protects one I/O line (Bi-directional).
- 350 watts peak pulse power per (tp=8/20μs).
- Provide transient protection:
 - IEC 61000-4-2 (ESD) ±30kV(Air)
 - ±30kV(Contact)
 - IEC 61000-4-4 (EFT) 40A (5/50ns).
 - IEC 61000-4-5 (Surge) 10A (8/20μs).
- Lead-free parts meet RoHS requirements.
- Suffix "-H" indicates Halogen free parts, ex.N06BT1006-H.

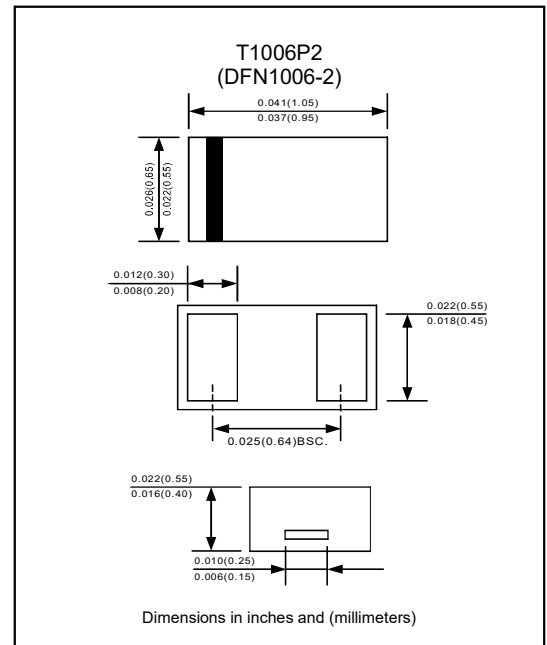
Applications

- Cell phone handsets and accessories.
- Microprocessor based equipment.
- Personal digital assistants (PDA's).
- Notebooks, desktops and servers.
- Portable instrumentation.
- Networking and telecom.

Mechanical data

- Epoxy:UL94-V0 rated flame retardant.
- Case : Molded plastic,T1006P2 (DFN1006-2) .
- Mounting Position : Any.

Package outline



Maximum ratings (at T_A=25°C unless otherwise noted)

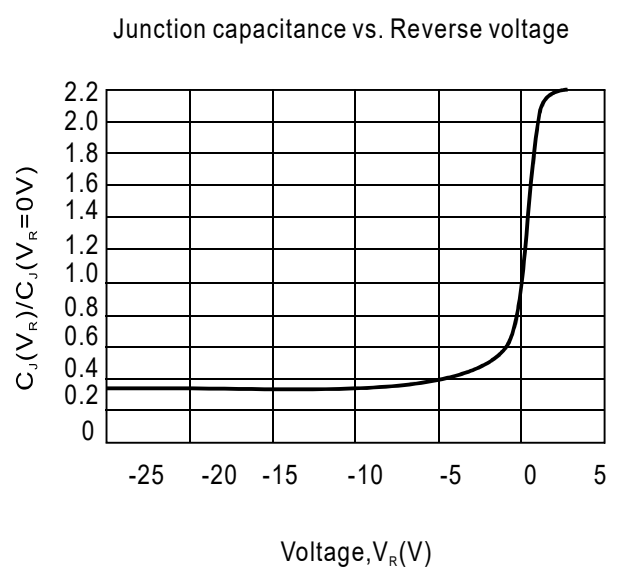
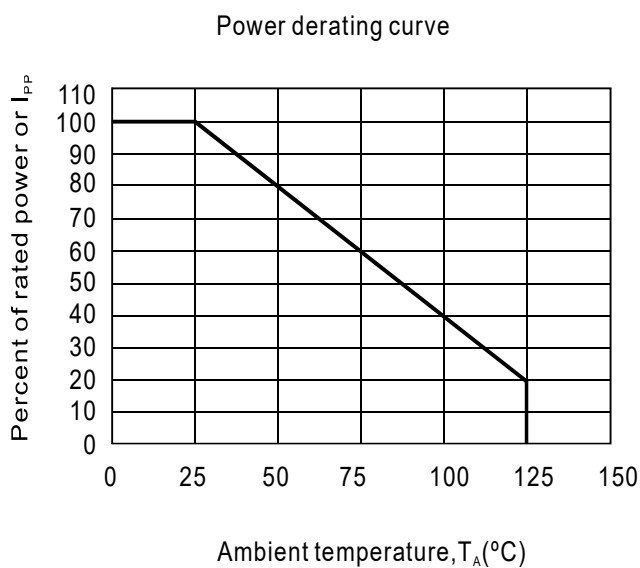
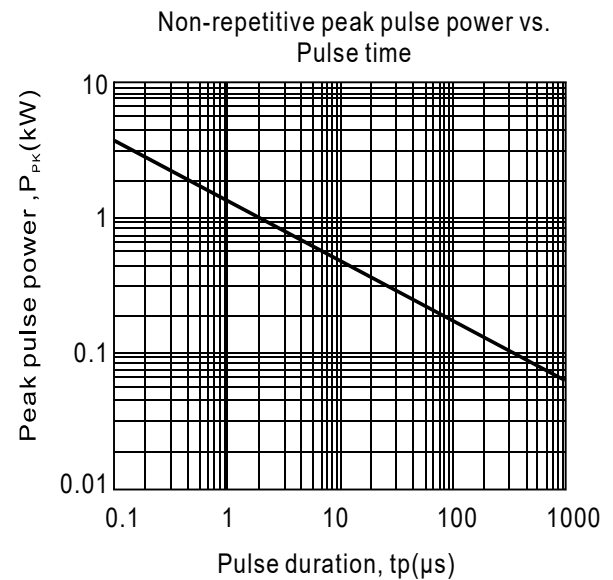
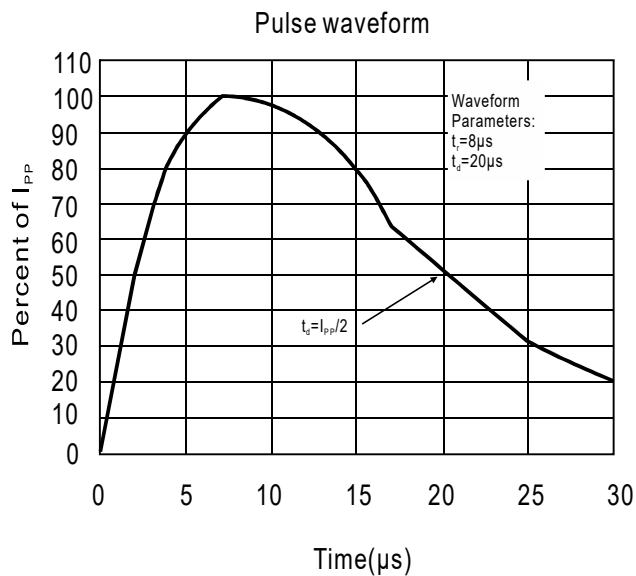
Parameter	Symbol	Ratings	Unit
ESD per IEC 61000-4-2 (Air)	V _{ESD}	±30	kV
ESD per IEC 61000-4-2 (Contact)	V _{ESD}	±30	kV
Peak pulse current (8/20μs)	I _{PP}	24	A
Peak pulse power (8/20μs)	P _{PP}	350	W
Operating junction temperature	T _{OPT}	+150	°C
Storage temperature range	T _{STG}	-55 to +150	°C

Electrical Characteristics (at T_A=25°C unless otherwise noted)

Parameter	Symbol	Conditions	Min.	Typ.	Max.	Unit
Nominal reverse working voltage	V _{RWM}				6.0	V
Reverse leakage current	I _R	V _{RRM} =6.0V,Between I/O_1 and I/O_2		0.1	1	μA
Reverse breakdown voltage	V _{BR}	I _T =1mA,Between I/O_1 and I/O_2	6.5		9.0	V
Clamping voltage	V _C	I _{PP} =5A,tp=8/20μs,Between I/O_1 and I/O_2			9.8	V
		I _{PP} =24A,tp=8/20μs,Between I/O_1 and I/O_2			16	V
Parasitic capacitance	C _J	V _R =0V,f=1MHz,Between I/O_1 and I/O_2			80	pF

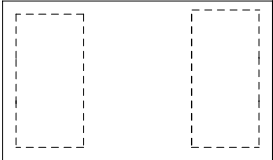
N06BT1006

Rating and characteristic curves

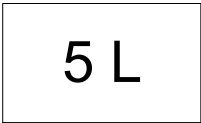


N06BT1006

Pinning information

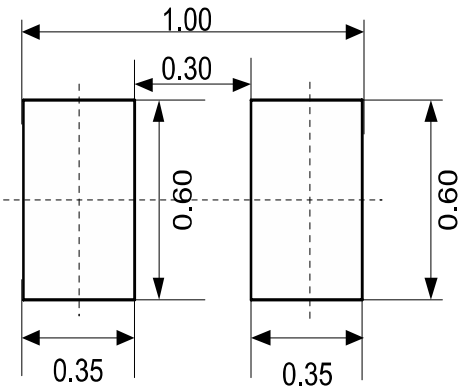
Pin	Simplified outline	Symbol
Bi-Directional		

Marking

Type number	Marking code
N06BT1006	

Note:
1. "5L" is part number, fixed.
2. No cathode line and date code.

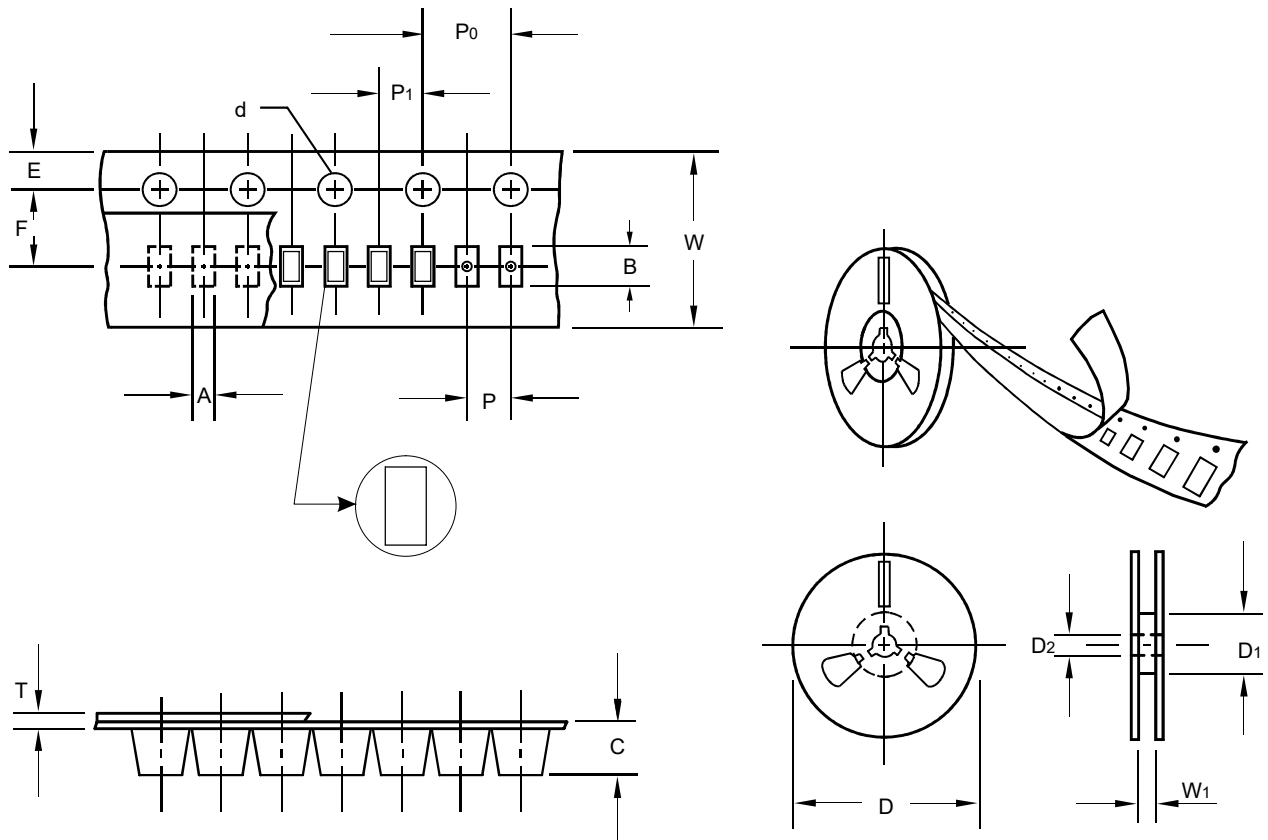
Suggested solder pad layout



Dimensions in millimeters

N06BT1006

Packing information



unit:mm

Item	Symbol	Tolerance	T1006P2 (DFN1006-2)
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.

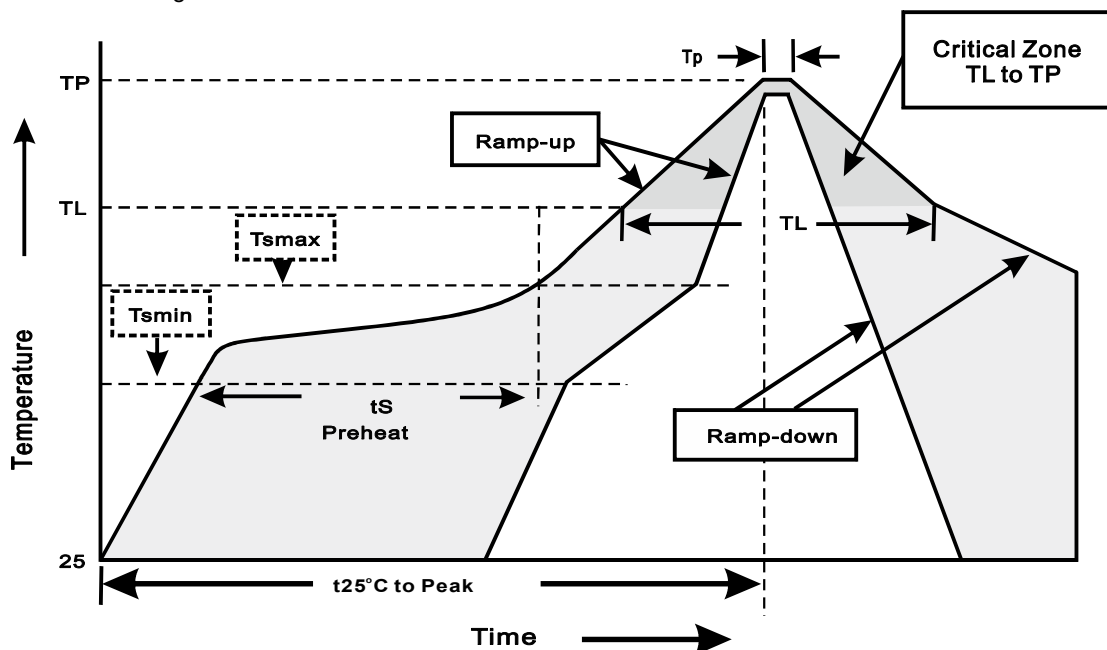
N06BT1006

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 (DFN1006-2)	7"	10,000	2.0	100,000	183*123*183	178	382*257*387	800,000

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)	$<3^{\circ}\text{C/sec}$
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	$<3^{\circ}\text{C/sec}$
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	$<6^{\circ}\text{C/sec}$
Time 25°C to Peak Temperature	$<6\text{ minutes}$

N06BT1006

High reliability test capabilities

Item Test	Conditions	Reference
1. Solder Resistance	at $260\pm 5^{\circ}\text{C}$ for $10\pm 2\text{sec.}$	MIL-STD-750D METHOD-2031
2. Solderability	at $245\pm 5^{\circ}\text{C}$ for 5 sec.	MIL-STD-202F METHOD-208
3. High Temperature Reverse Bias	$V_{\text{BR}}=V_{\text{BR MIN}}*80\%$ at $T_{\text{J}}=85^{\circ}\text{C}$ for 168 hrs.	MIL-STD-750D METHOD-1038
4. Pressure Cooker	$15P_{\text{SIG}}$ at $T_{\text{A}}=121^{\circ}\text{C}$ for 4 hrs.	JESD22-A102
5. Temperature Cycling	-55°C to $+125^{\circ}\text{C}$ dwelled for 30 min. and transferred for 5min. total 10 cycles.	MIL-STD-750D METHOD-1051
6. Humidity	at $T_{\text{A}}=85^{\circ}\text{C}$, RH=85% for 1000hrs.	MIL-STD-750D METHOD-1021
7. High Temperature Storage Life	at 175°C for 1000 hrs.	MIL-STD-750D METHOD-1031