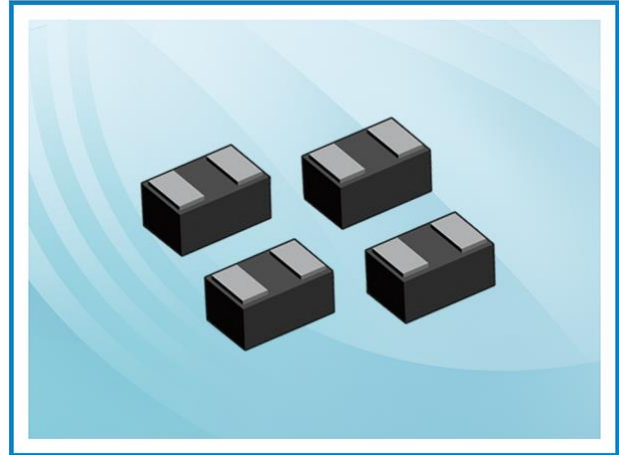


PT1521NT – ESD Protection Diode

Feature

- 250 Watts peak pulse power (8/20 μ s)
- Bidirectional configurations
- Solid state silicon-avalanche technology
- Low clamping voltage
- Low leakage current
- Protection one data line
- IEC61000-4-2 (ESD) \pm 20 kV (Air), \pm 20 kV (Contact)
- IEC61000-4-4 (EFT) 40 A (5/50ns)
- IEC61000-4-5 (Lightning): 8 A (8/20 μ s)



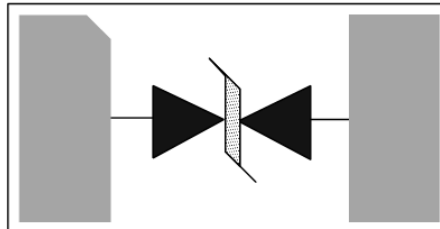
Applications

- Microphone
- Portable Instrumentation

Mechanical Data

- DFN1006 package
- Molding compound flammability rating: UL94 V-0
- Tape and Reel Packaging
- RoHS/WEEE Compliant

Schematic and PIN Configuration



DFN1006

Maximum Rating

Parameter	Symbol	Limit	Unit
IEC61000-4-2 ESD Voltage – Air Mode	$V_{ESD}^{(1)}$	\pm 20	kV
IEC61000-4-2 ESD Voltage – Contact Mode		\pm 20	
Peak Pulse Power	$P_{PP}^{(2)}$	250	W
Peak Pulse Current	$I_{PP}^{(2)}$	8	A
Maximum Lead Solder Temperature (10 seconds duration)	T_L	260	$^{\circ}$ C
Junction Temperature	T_J	-55~125	$^{\circ}$ C
Storage Temperature Range	T_{stg}	-55~125	$^{\circ}$ C

Note:

1. Device stressed with ten non-repetitive ESD pulses.
2. Non-repetitive current pulse 8/20 μ s exponential decay waveform according to IEC61000-4-5.
3. All ratings are measured at environmental temperature of $T_A = 25^{\circ}$ C unless otherwise noted.

PT1521NT – ESD Protection Diode

Electrical Characteristics

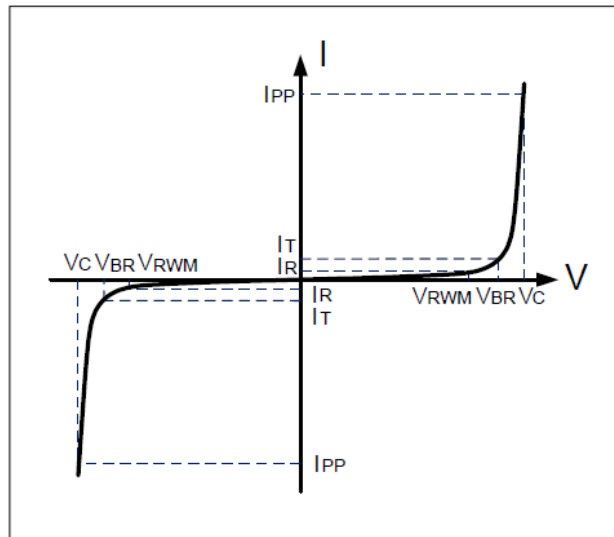
Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Reverse Stand-off Voltage	$V_{RWM}^{(1)}$				15	V
Reverse Breakdown Voltage	V_{BR}	$I_T = 1 \text{ mA}$	16.7			V
Reverse Leakage Current	I_R	$V_{RWM} = 15 \text{ V}$		0.1	0.5	μA
Clamping Voltage	$V_C^{(2)}$	$I_{PP} = 8 \text{ A}$			32	V
Junction Capacitance	C_J	$V_R = 0 \text{ V}, f = 1 \text{ MHz}$		20	25	pF

Note:

1. Other voltages available upon request.
2. Non-repetitive current pulse 8/20 μs exponential decay waveform according to IEC61000-4-5.
3. All ratings are measured at environmental temperature of $T_A = 25^\circ\text{C}$ unless otherwise noted.

Electrical Parameters

Symbol	Parameter
V_C	Clamping Voltage @ I_{PP}
I_{PP}	Peak Pulse Current
V_{BR}	Breakdown Voltage @ I_T
I_T	Test Current
I_R	Reverse Leakage Current @ V_{RWM}
V_{RWM}	Reverse Stand-off Voltage



PT1521NT – ESD Protection Diode

Typical Characteristics

Fig.1 Peak Pulse Power Rating Curve

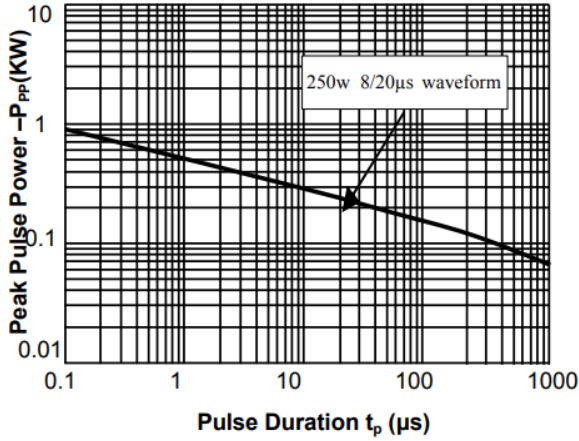


Fig.2 Pulse Derating Curve

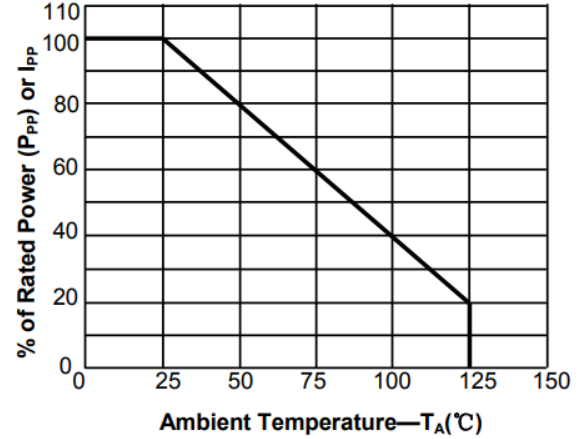


Fig.3 Pulse Waveform-8/20 μ s

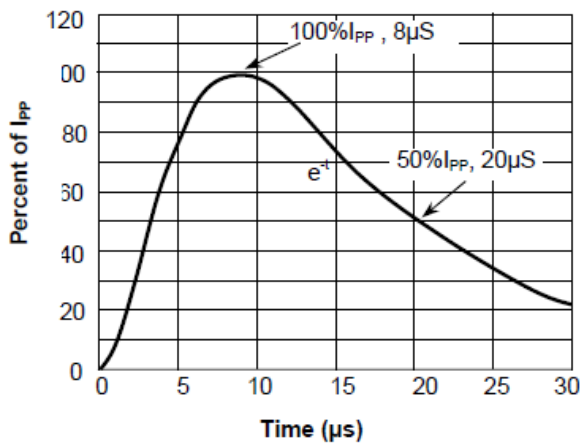


Fig.4 Pulse Waveform-ESD(IEC61000-4-2)

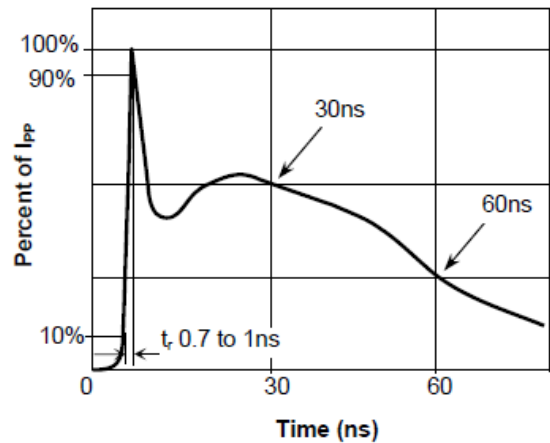


Fig.5 IEC61000-4-2 +8kV Contact Discharge

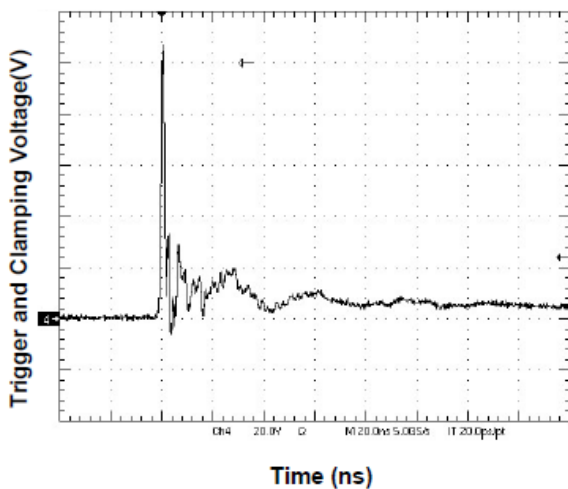
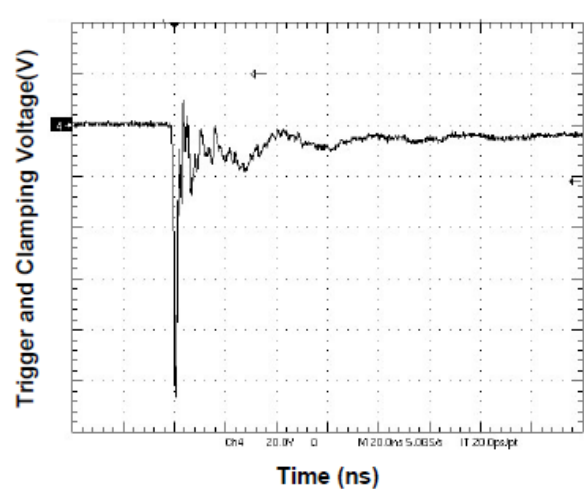
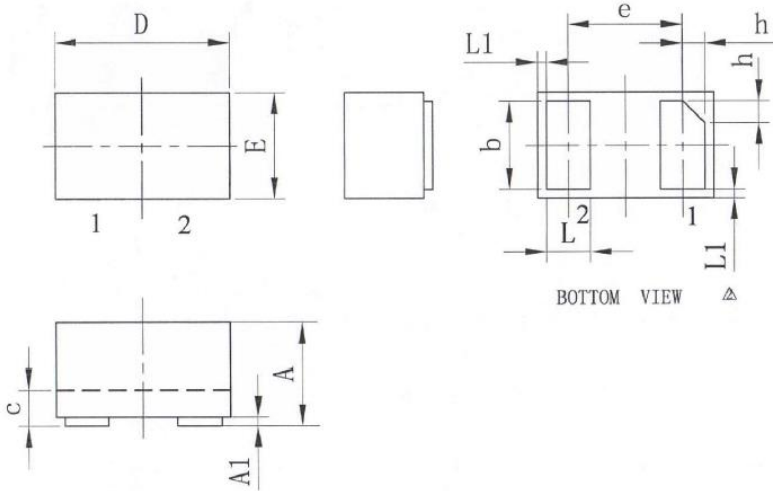


Fig.6 IEC61000-4-2 -8kV Contact Discharge



PT1521NT – ESD Protection Diode

DFN1006 Package Outline Dimensions



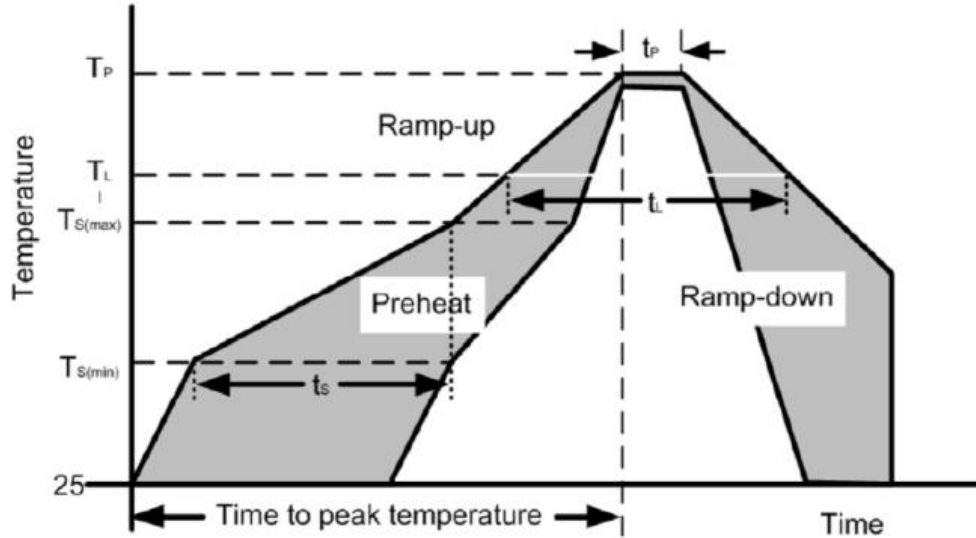
Symbol	Dimensions (mm)		
	Min	Typ	Max
A	0.40	0.50	0.55
A1	0.00	0.02	0.05
b	0.45	0.50	0.55
c	0.12	0.15	0.18
D	0.95	1.00	1.05
e	0.65 BSC		
E	0.55	0.60	0.65
L	0.20	0.25	0.30
L1	0.05 REF		
h	0.07	0.12	0.17

Marking



PT1521NT – ESD Protection Diode

Reflow Soldering Parameters

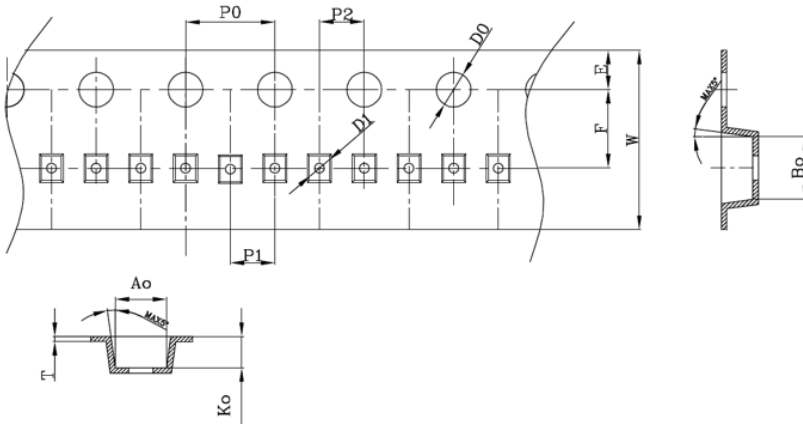


Reflow Condition	Pb-Free assembly
Pre Heat Temperature Min (Ts (min)) 150°C	Temperature Min (Ts (min)) 150°C
Pre Heat Temperature Min (Ts (max)) 200°C	Temperature Min (Ts (max)) 200°C
Pre Heat Time (min to max) (ts) 60-190 secs	Time (min to max) (ts) 60-190 secs
Average ramp up rate (Liquidus Temp) (TL) to peak	5°C/seconds max
Ts(max)to TL—Ramp-up Rate	5°C/seconds max
Reflow Temperature (TL) (Liquidus)	217°C
Reflow Temperature (tl)	60-150 seconds
Peak Temperature (Tp)	260+0/-5°C
Time within actual peak Temperature (tp)	20-40 seconds
Ramp-down Rate	5°C/seconds max
Time 25°C to peak Temperature (Tp)	8 minutes Max.
Do not exceed	280°C

PT1521NT – ESD Protection Diode

Packaging Information

Order Code	Packaging	Reel Size	PCS/Reel
PT1521NT	DFN1006	7 inch	10,000



Symbol	Dimension (mm)
A0	0.69±0.05
B0	1.19±0.05
K0	0.66±0.05
P0	4.00±0.10
P1	2.00±0.05
P2	2.00±0.05
T	0.20±0.02
E	1.75±0.10
F	3.50±0.05
D0	1.55±0.05
D1	0.50±0.10
W	8.00±0.10

