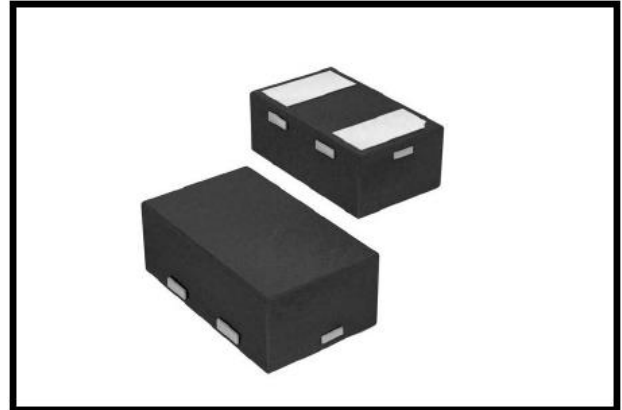


## PTUC0521NE – ESD Protection Diode

### Feature

- 60 Watts peak pulse power (8/20 $\mu$ s)
- Tiny DFN1006 package
- Bidirectional configurations
- Solid state silicon-avalanche technology
- Low clamping voltage
- Low leakage current
- Low capacitance ( $C_j = 0.4$  pF typ., between I/O)
- Protect one data/power line
- IEC61000-4-2 (ESD)  $\pm 30$ kV (Air),  $\pm 30$ kV (Contact)
- IEC61000-4-4 (EFT) 40A (5/50ns)
- IEC61000-4-5 (Lightning): 3.5A (8/20 $\mu$ s)



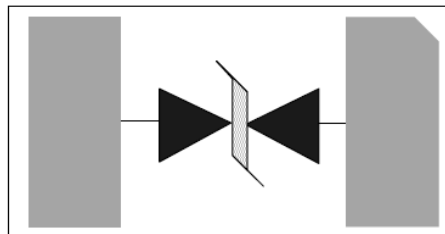
### Applications

- Cell Phone Handsets and Accessories
- Micro processor based equipment
- Personal Digital Assistants (PDA's)
- Notebooks, Desktops and Servers
- 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	$V_{ESD}^{(1)}$	$\pm 30$	kV
IEC61000-4-2 ESD Voltage – Contact Mode		$\pm 30$	
Peak Pulse Power	$P_{PP}^{(2)}$	60	W
Peak Pulse Current	$I_{PP}^{(2)}$	3.5	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 $\mu$ 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.

## PTUC0521NE – ESD Protection Diode

### Electrical Characteristics

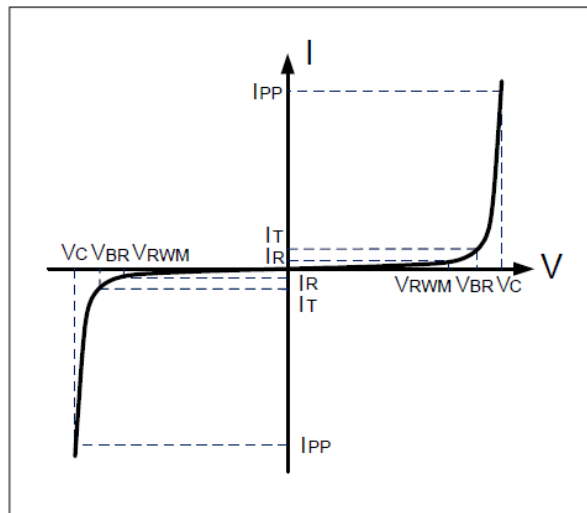
Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Reverse Stand-off Voltage	$V_{RWM}^{(1)}$				5.0	V
Reverse Breakdown Voltage	$V_{BR}$	$I_T = 1\text{mA}$	6.0	8.0		V
Reverse Leakage Current	$I_R$	$V_{RWM} = 5\text{V}$		0.1	0.5	$\mu\text{A}$
Peak Pulse Current	$I_{PP}$				3.5	A
Clamping Voltage	$V_C^{(2)}$	$I_{PP} = 3.5\text{A}$			15	V
Junction Capacitance	$C_J$	$V_R = 0\text{V}$ , $f = 1\text{MHz}$ , I/O to I/O		0.4	0.5	pF

Note:

1. Other voltages available upon request.
2. Non-repetitive current pulse 8/20 $\mu\text{s}$  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



## PTUC0521NE – ESD Protection Diode

### Typical Characteristics

Figure 1: Peak Pulse Power vs. Pulse Time

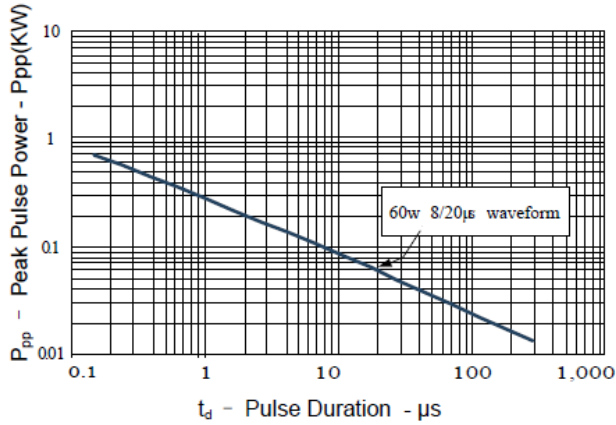


Figure 2: Power Derating Curve

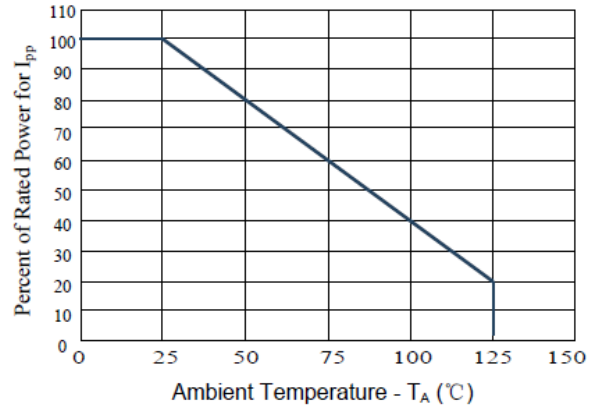


Figure3: Pulse Waveform

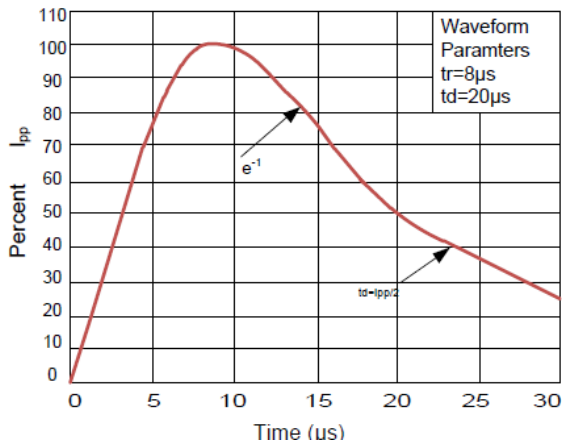


Figure 4: Clamping Voltage vs. Ipp

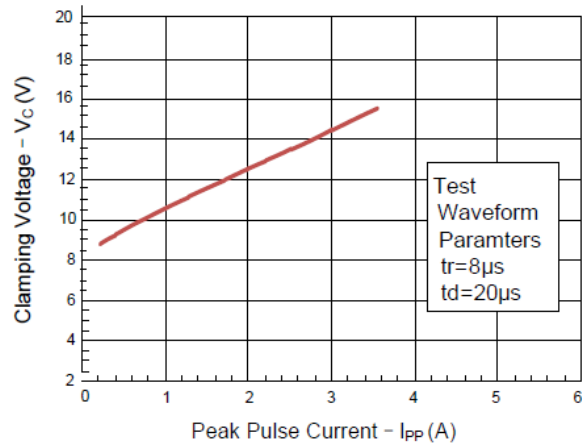


Figure5: Positive Clamping voltage (TLP)

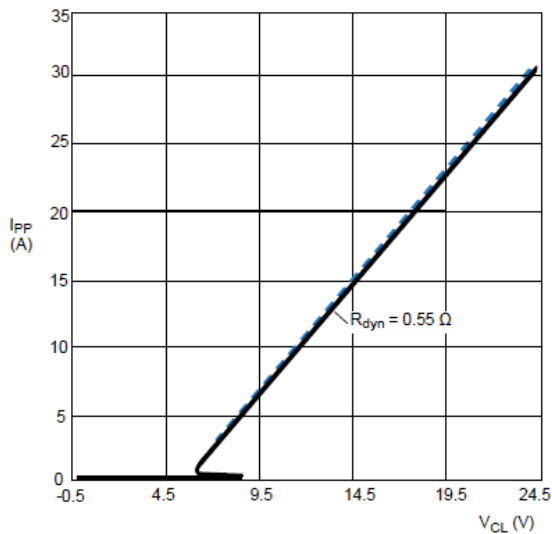
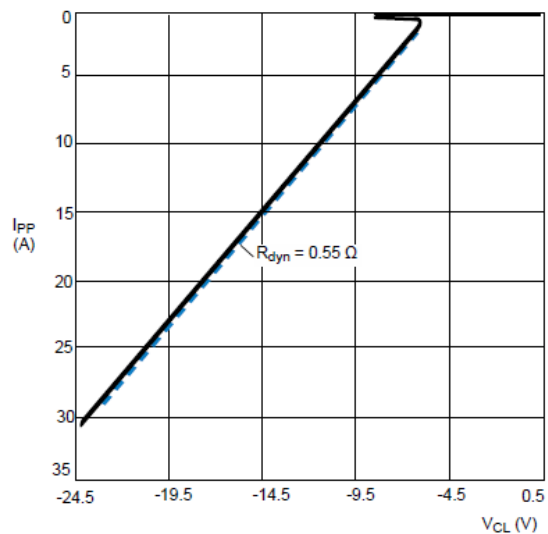
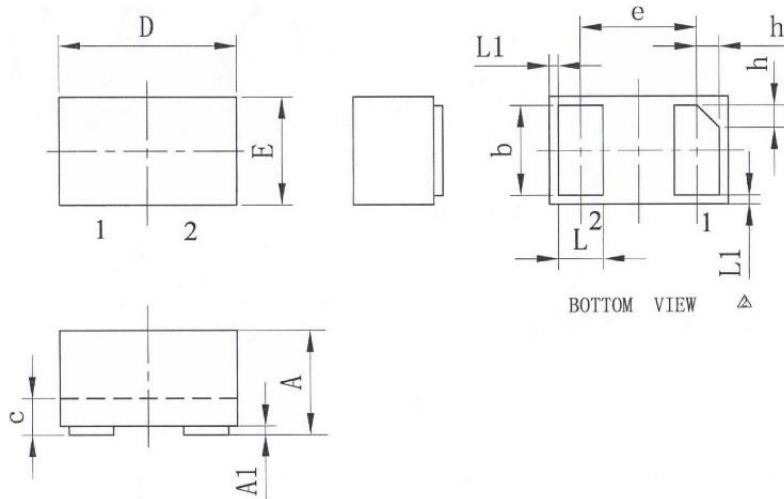


Figure6: Negative Clamping voltage (TLP)



## PTUC0521NE – ESD Protection Diode

### DFN1006 Package Outline Dimensions



Symbol	Dimensions (mm)		
	Min	Typ	Max
A	0.45	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

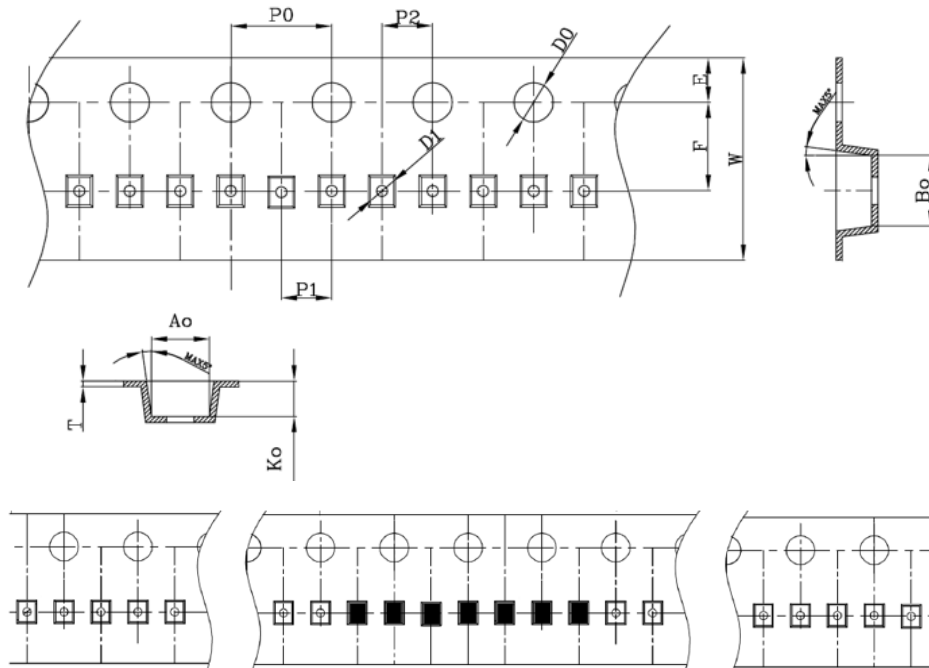
### Marking



## PTUC0521NE – ESD Protection Diode

### Packaging Information

Order Code	Packaging	Reel Size	PCS/Reel
PTUC0521NE	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