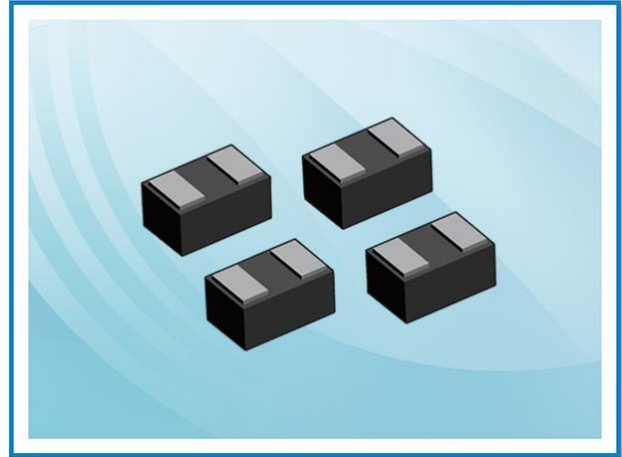


## PT4V5NH – ESD Protection Diode

### Feature

- 500 Watts peak pulse power (8/20 $\mu$ s)
- Tiny DFN1006 package
- Bidirectional configurations
- Solid state silicon-avalanche technology
- Low clamping voltage
- Low leakage current
- IEC61000-4-2 (ESD)  $\pm$ 30kV (Air),  $\pm$ 30kV (Contact)
- IEC61000-4-4 (EFT) 40A (5/50ns)
- IEC61000-4-5 (Lightning): 45A (8/20 $\mu$ s)



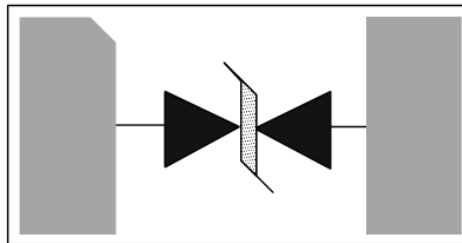
### Applications

- Micro processor based equipment
- Personal Digital Assistants (PDA's)
- Notebooks, Desktops and Servers
- Portable Instrumentation
- Cell Phone Handsets and Accessories

### 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	$P_{PP}^{(2)}$	500	W
Peak Pulse Current	$I_{PP}^{(2)}$	45	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.

## PT4V5NH – ESD Protection Diode

### Electrical Characteristics

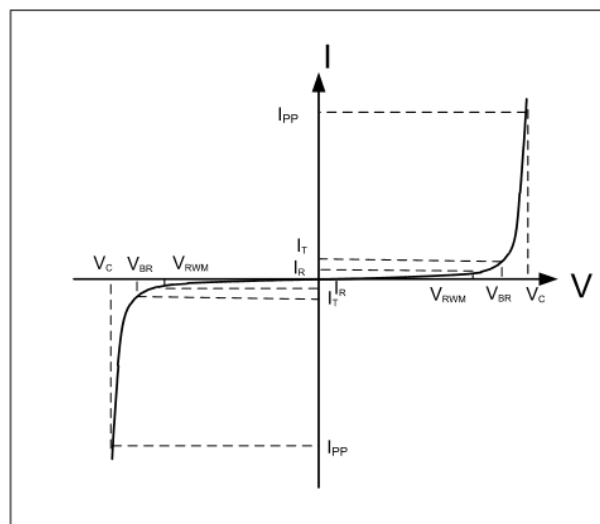
Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Reverse Stand-off Voltage	$V_{RWM}^{(1)}$				4.5	V
Reverse Breakdown Voltage	$V_{BR}$	$I_T = 1mA$	4.7			V
Reverse Leakage Current	$I_R$	$V_{RWM} = 4.5V$			0.1	$\mu A$
Peak Pulse Current	$I_{PP}$				45	A
Clamping Voltage	$V_C^{(2)}$	$I_{PP} = 1A$			5.5	V
		$I_{PP} = 20A$			7.5	V
		$I_{PP} = 45A$			11	V
Junction Capacitance	$C_J$	$V_R = 0V, f = 1MHz$		70		pF

Note:

1. Other voltages available upon request.
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.

### 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



## PT4V5NH – ESD Protection Diode

### Typical Characteristics

Figure 1: Peak Pulse Power vs. Pulse Time

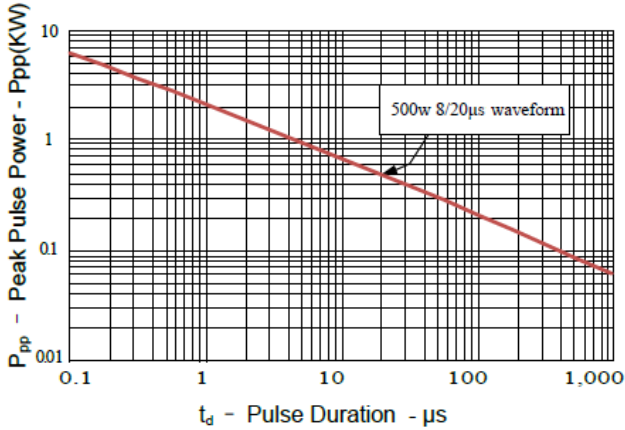


Figure 2: Power Derating Curve

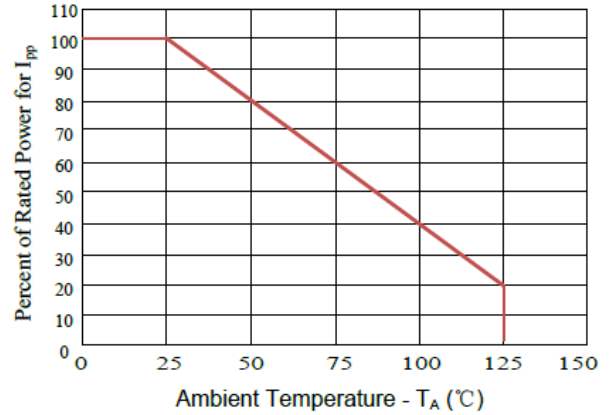


Figure3: Pulse Waveform

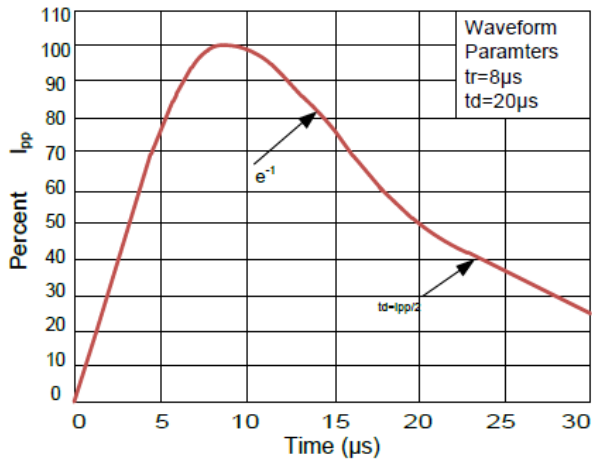
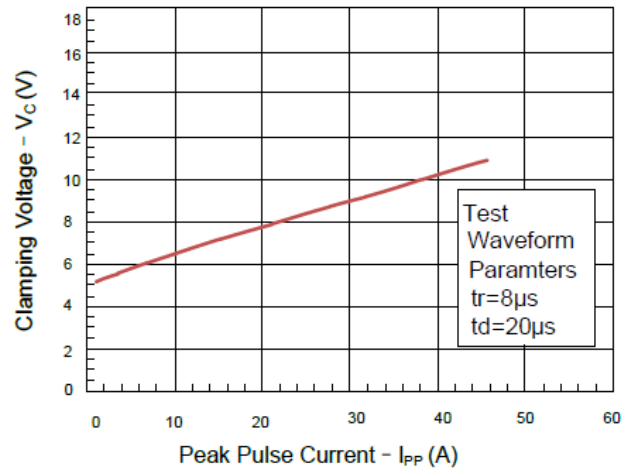
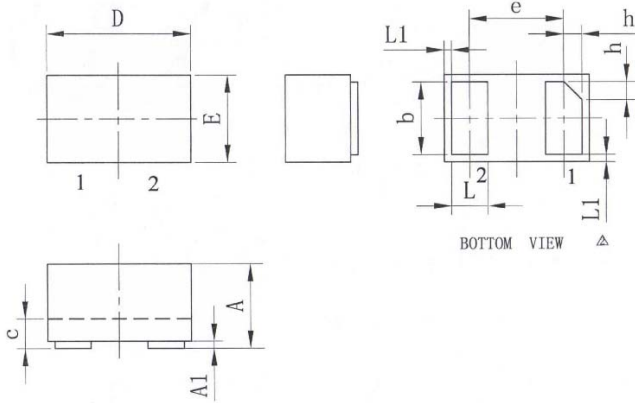


Figure 4: Clamping Voltage vs. Ipp



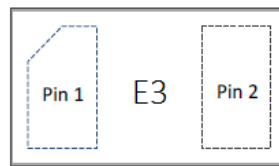
## PT4V5NH – ESD Protection Diode

### 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



### Packaging Information

Order Code	Packaging	Reel Size	PCS/Reel
PT4V5NH	DFN1006	7 inch	10,000