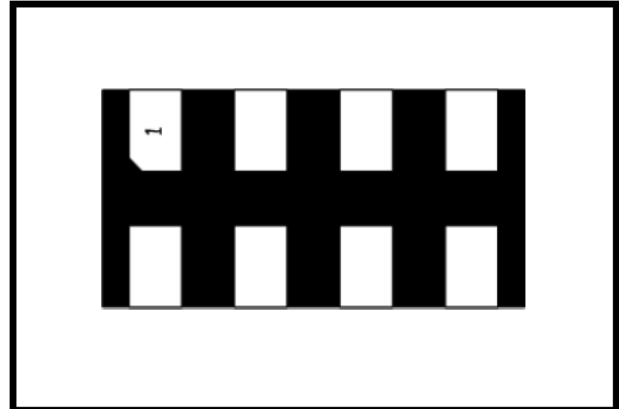


PTUC2504R – ESD Protection Diode

Feature

- 100 Watts peak pulse power (8/20 μ s)
- Bidirectional configurations
- Low clamping voltage
- Low leakage current
- Protects up to Two Bidirectional I/O lines
- IEC61000-4-2 (ESD) \pm 25kV (Air), \pm 25kV (Contact)
- IEC61000-4-4 (EFT) 40A (5/50ns)
- IEC61000-4-5 (Lightning): 10A (8/20 μ s)



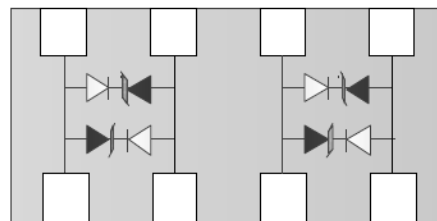
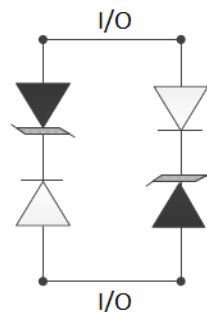
Applications

- 10/100/1000 Ethernet
- Integrated magnetics/RJ-45 connectors
- LAN/WAN Equipment
- Security Cameras
- Industrial Controls
- Peripherals
- Notebooks & Desktops Computers

Mechanical Data

- DFN2010P8 package
- Molding compound flammability rating: UL94 V-0
- Tape and Reel Packaging
- RoHS/WEEE Compliant

Schematic and PIN Configuration



Maximum Rating

Parameter	Symbol	Limit	Unit
IEC61000-4-2 ESD Voltage – Air Mode	$V_{ESD}^{(1)}$	\pm 25	kV
IEC61000-4-2 ESD Voltage – Contact Mode		\pm 25	
Peak Pulse Power	$P_{PP}^{(2)}$	100	W
Peak Pulse Current	$I_{PP}^{(2)}$	10	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.

PTUC2504R – ESD Protection Diode

Electrical Characteristics

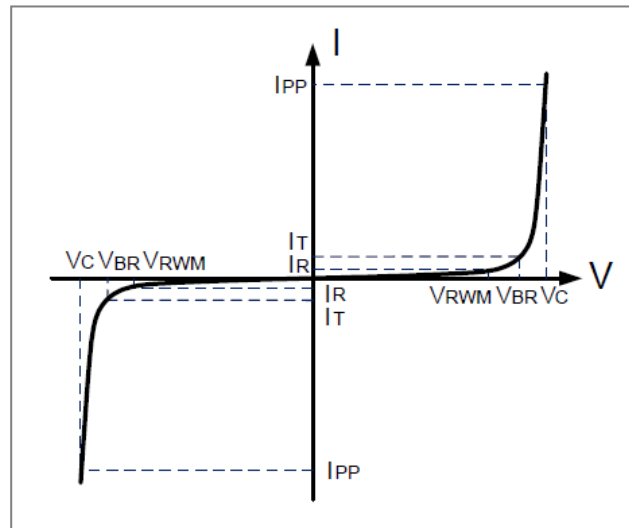
Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Reverse Stand-off Voltage	$V_{RWM}^{(1)}$				3.3	V
Reverse Breakdown Voltage	V_{BR}	$I_T = 1\text{mA}$	4.0	5.0		V
Reverse Leakage Current	I_R	$V_{RWM} = 3.3\text{V}$		50	500	nA
Clamping Voltage	$V_C^{(2)}$	$I_{PP} = 10\text{A}$		10		V
Junction Capacitance	C_J	$V_R = 2.5\text{V}, f = 1\text{MHz}, I/O \text{ to } I/O$		1.2		pF
		$V_R = 0\text{V}, f = 1\text{MHz}, I/O \text{ to } GND$		0.8	1.0	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



PTUC2504R – ESD Protection Diode

Typical Characteristics

Figure 1: Peak Pulse Power vs. Pulse Time

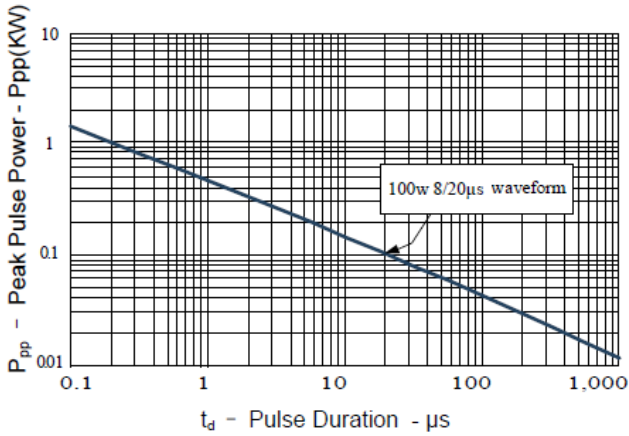


Figure 2: Power Derating Curve

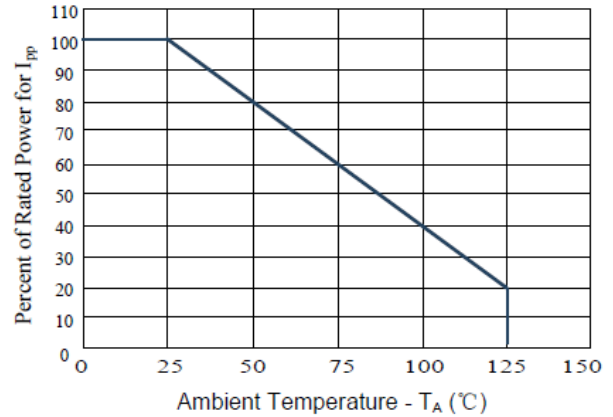


Figure 3: Pulse Waveform

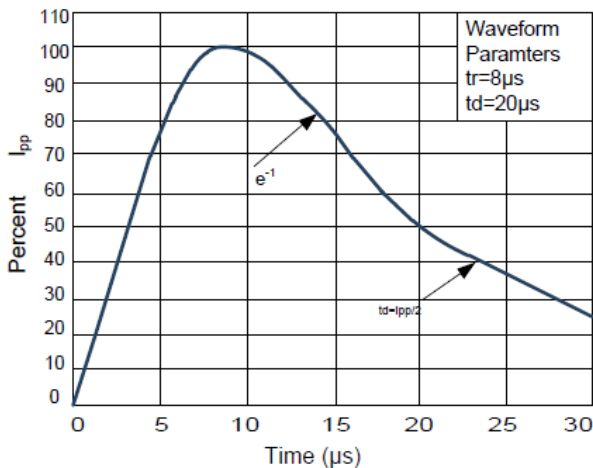


Figure 4: Clamping Voltage vs. Ipp

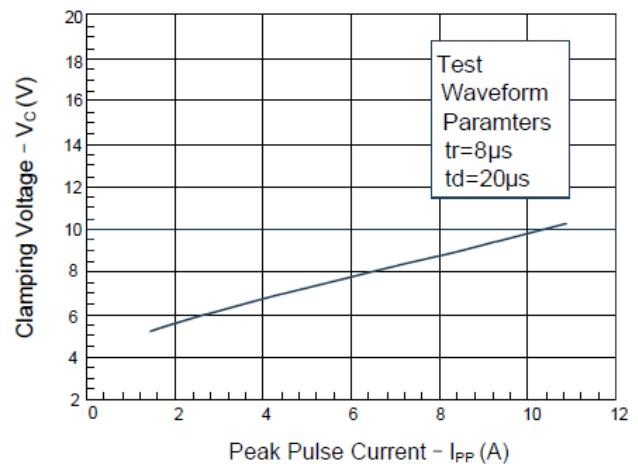


Figure 5: Normalized Junction Capacitance vs. Reverse Voltage

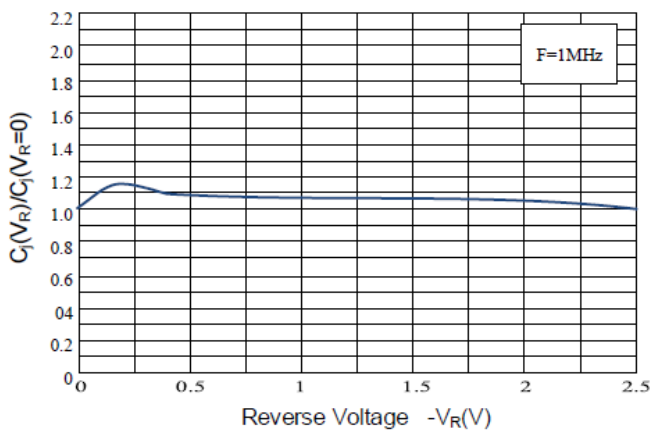
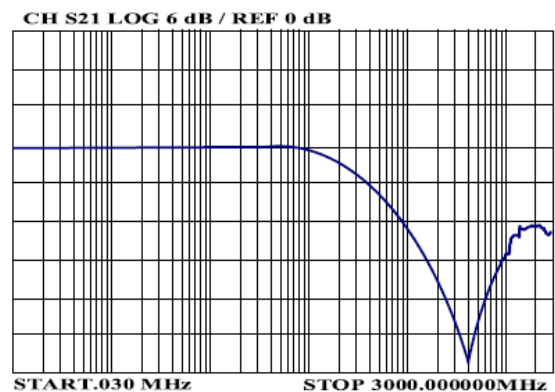
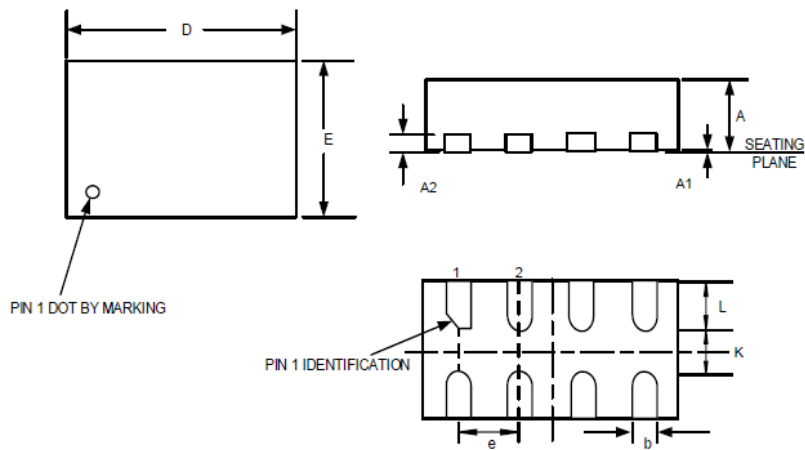


Figure 6: Insertion Loss

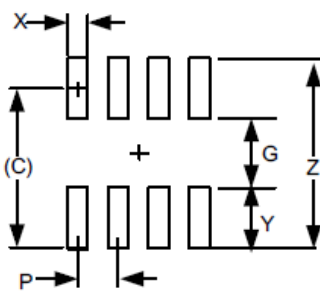


PTUC2504R – ESD Protection Diode

DFN2010 Package Outline Dimensions



Symbol	Dimensions (mm)	
	Min	Max
A	0.450	0.550
A1	0.000	0.046
A2	0.110 REF	
b	0.200	0.300
D	1.924	2.076
E	0.924	1.076
e	0.500 TYP	
L	0.274	0.426
K	0.200 MIN	



Symbol	Dimensions	
	mm	inch
C	0.875	0.035
G	0.200	0.008
P	0.500 BSC	0.020
X	0.350	0.014
Y	0.450	0.018
Z	1.100	0.043

Marking



Packaging Information

Order Code	Packaging	Reel Size	PCS/Reel
PTUC2504R	DFN2010P8	7 inch	3,000