

### Features

- u 120 Watts Peak Pulse Power per Line (tp=8/20μs)
- u Protects two or four I/O lines
- u Low capacitance: 0.35 pF typical (I/O to I/O)
- u Low operating voltage: 5V
- u RoHS Compliant
- u IEC61000-4-2 (ESD) ±25kV (air), ±20kV (contact)
- u IEC61000-4-4 (EFT) 40A (5/50ns)
- u IEC61000-4-5 (Lightning) 4A (8/20μs)

### Mechanical Characteristics

- u Package: DFN1616-6
- u Ultra low leakage: nA level
- u Case Material: “Green” Molding Compound.
- u UL Flammability Classification Rating 94V-0
- u Moisture Sensitivity: Level 3 per J-STD-020

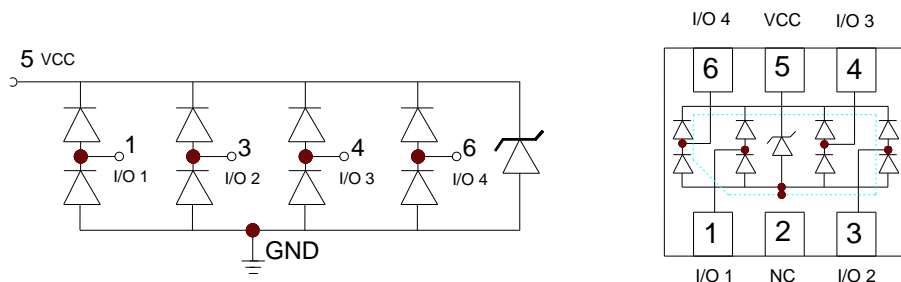
### Applications

- u High Definition Multimedia Interface (HDMI)
- u Digital Visual Interface (DVI)
- u Unified Display Interface (UDI)
- u MDDI Ports
- u PCI Express
- u Serial ATA

### Ordering Information

Part Number	Qty per Reel	Reel Size
TPESD0514PA	3000	7"

### Dimensions and Pin Configuration



**Absolute Maximum Ratings** (Tamb=25°C unless otherwise specified)

Parameter	Symbol	Value	Unit
Peak Pulse Power (8/20μs)	Ppk	120	W
Peak Pulse Current (8/20μs)	I <sub>PP</sub>	4	A
ESD per IEC 61000-4-2 (Air)	V <sub>ESD</sub>	± 25	kV
ESD per IEC 61000-4-2 (Contact)		± 20	
Operating Temperature Range	T <sub>J</sub>	-55 to +125	°C
Storage Temperature Range	T <sub>stg</sub>	-55 to +150	°C

**Electrical Characteristics** (T<sub>A</sub>=25°C unless otherwise specified)

Parameter	Symbol	Min	Typ	Max	Unit	Test Condition
Reverse Working Voltage	V <sub>RWM</sub>			5	V	Any I/O pin to ground
Breakdown Voltage	V <sub>BR</sub>	6		9	V	I <sub>T</sub> = 1mA, any I/O pin to ground
Reverse Leakage Current	I <sub>R</sub>			0.2	μA	V <sub>RWM</sub> = 5V, any I/O pin to ground
Clamping Voltage	V <sub>C</sub>			9	V	I <sub>PP</sub> = 1A (8 x 20μs pulse), any I/O pin to ground
Clamping Voltage	V <sub>C</sub>			25	V	I <sub>PP</sub> = 4A (8 x 20μs pulse), any I/O pin to ground
Junction Capacitance	C <sub>J</sub>		0.35		pF	V <sub>R</sub> = 0V, f = 1MHz, between I/O pins
Junction Capacitance	C <sub>J</sub>		0.6	0.8	pF	V <sub>R</sub> = 0V, f = 1MHz, any I/O pin to ground

## Characteristic Curves

Fig1. 8/20 $\mu$ s Pulse Waveform

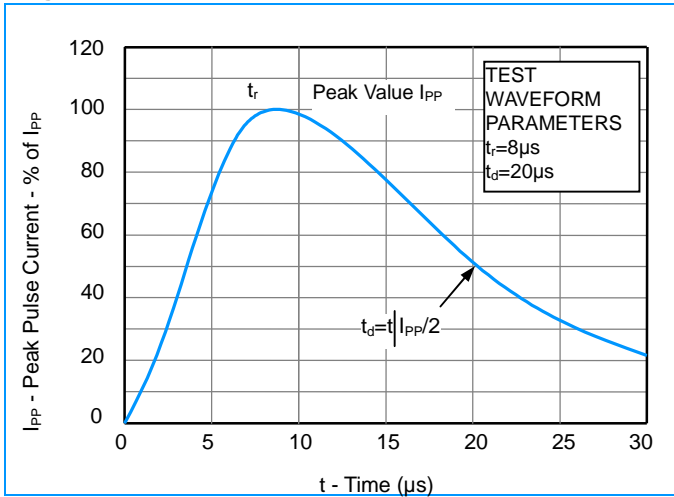


Fig2. ESD Pulse Waveform (according to IEC 61000-4-2)

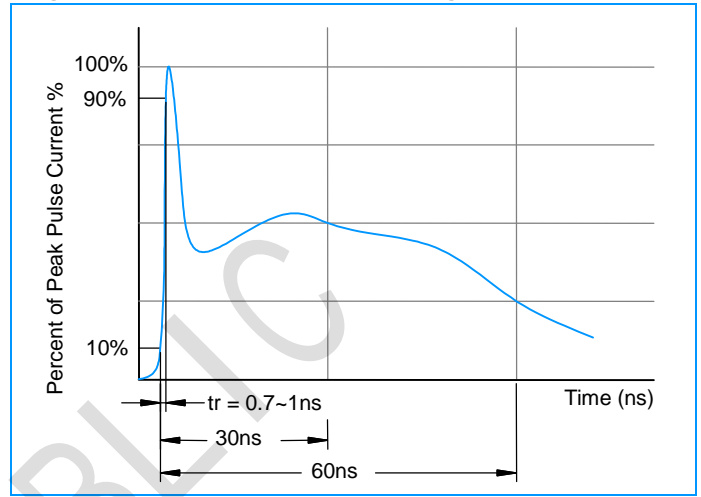


Fig3. Non - Repetitive Peak Pulse Power vs. Pulse Time

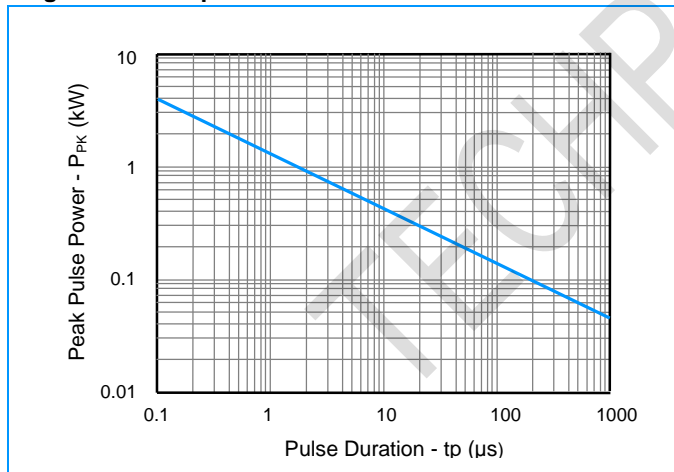
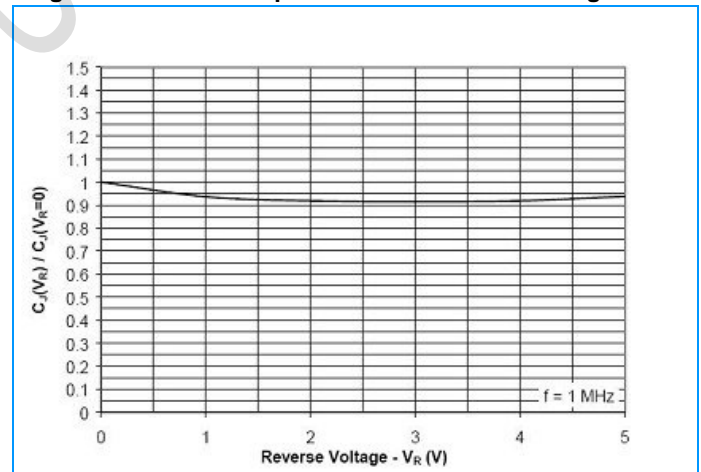
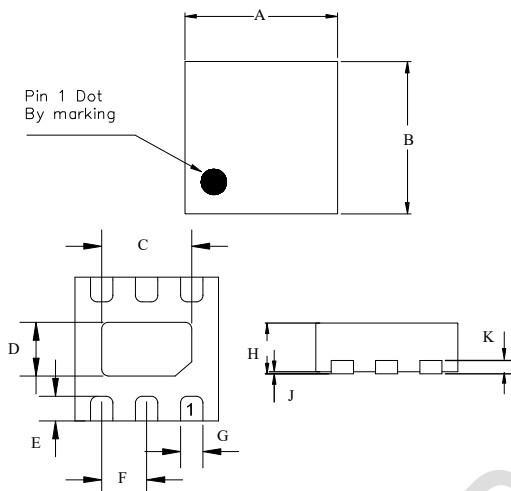


Fig4. Normalized Capacitance vs. Reverse Voltage



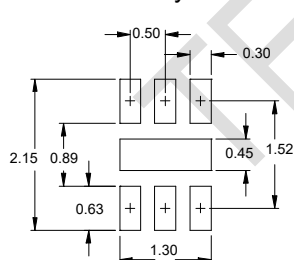
### Outline Drawing - DFN1616-6

#### DFN1616-6



DIM	DIMENSIONS				NOTE
	INCHES		MM		
A	0.061	0.065	1.55	1.65	
B	0.061	0.065	1.55	1.65	
C	0.035	0.041	0.90	1.05	
D	0.020	0.026	0.50	0.65	
E	0.008	0.012	0.20	0.30	
F	0.020 REF.		0.50 REF.		
G	0.008	0.026	0.20	0.30	
H	0.020	0.024	0.50	0.60	
J	0.000	0.002	0.00	0.05	
K	0.006 REF.		0.15 REF.		

#### Suggested Solder Pad Layout



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