

2-Line Ultra Low Capacitance TVS Diode Array

Features

- Ultra low leakage: nA level
- Operating voltage: 5V
- Ultra low capacitance: 0.3pF typical
- Low clamping voltage
- Complies with following standards:
 - IEC 61000-4-2 (ESD) immunity test
 - Air discharge: $\pm 15\text{kV}$
 - Contact discharge: $\pm 13\text{kV}$
 - IEC61000-4-4 (EFT) 40A (5/50ns)
 - IEC61000-4-5 (Lightning) 10A (8/20 μs)
- RoHS Compliant

Dimensions DFN1610-6



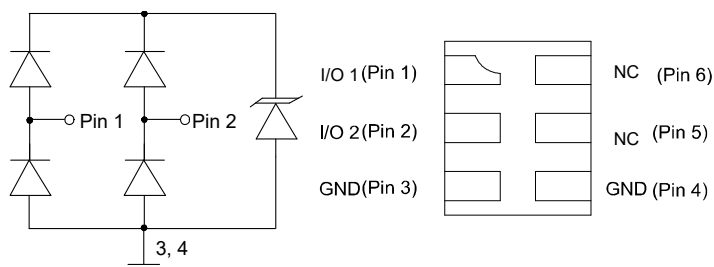
Applications

- USB 3.0 line
- HDMI1.4 Set-top box and digital TV
- 10/100/1000 Ethernet
- Notebook Computers
- SATA Ports
- MDDI Ports

Mechanical Characteristics

- Package: DFN1610-6
- Lead Finish: Lead Free
- UL Flammability Classification Rating 94V-0
- Quantity Per Reel: 3,000pcs
- Reel Size: 7inch
- Device Marking: 52PA

Pin Configuration



Absolute Maximum Ratings (T_{amb}=25°C unless otherwise specified)

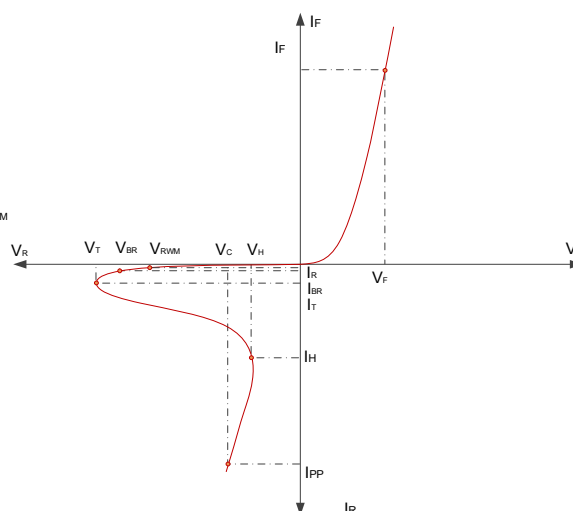
Parameter	Symbol	Value	Unit
Peak Pulse Power (8/20 μs)	P _{pp}	45	W
ESD per IEC 61000-4-2 (Air)	V _{ESD}	± 15	kV
ESD per IEC 61000-4-2 (Contact)		± 13	
Operating Temperature Range	T _J	-55 to +125	°C :
Storage Temperature Range	T _{STJ}	-55 to +125	°C :

Electrical Characteristics (TA=25°C unless otherwise specified)

Parameter	Symbol	Test Condition	Min	Typ	Max	Unit
Reverse Working Voltage	V_{RWM}				5	V
Breakdown Voltage	V_{BR}	$I_T = 1\text{mA}$	5.5			V
Reverse Leakage Current	I_R	$V_{RWM} = 5\text{V}$			0.5	μA
Clamping Voltage	V_C	$I_{PP} = 10\text{A}$ (8 x 20 μs pulse)		4.5	5.5	V
ESD Clamping Voltage	V_{CL}	$I_{TLP}=4\text{A}, t_p=0.2/100\text{ns}$		2.8		V
ESD Clamping Voltage	V_{CL}	$I_{TLP}=16\text{A}, t_p=0.2/100\text{ns}$		5.2		V
Junction Capacitance	C_J	$V_R = 0\text{V}$, $f = 1\text{MHz}$ I/O-I/O		0.45		pF
Junction Capacitance	C_J	$V_R = 0\text{V}$, $f = 1\text{MHz}$ I/O-GND		1		pF

Electrical Parameters (TA=25°C unless otherwise specified)

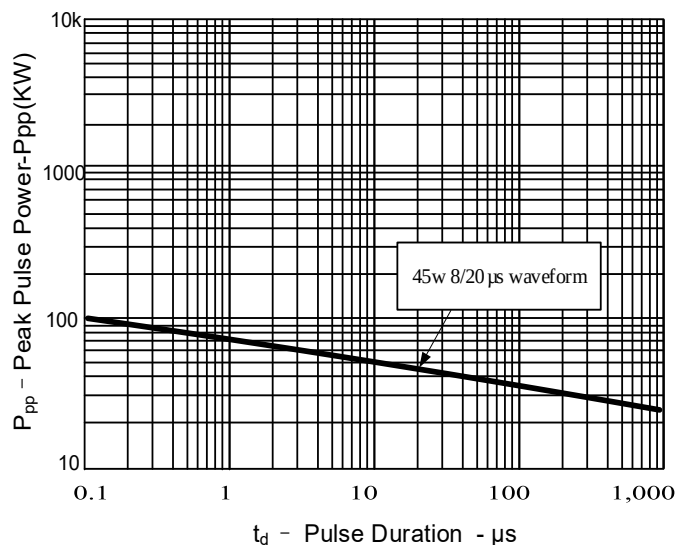
V_{RWM} Reverse Working Voltage Max.
 I_R Maximum Reverse Leakage Current @ V_{RWM}
 V_T Trigger Voltage
 V_H Holding Voltage
 I_H Holding Current
 V_{BR} Reverse Breakdown Voltage
 I_{PP} Maximum Reverse Peak Pulse Current
 V_C Clamping Voltage @ I_{PP}



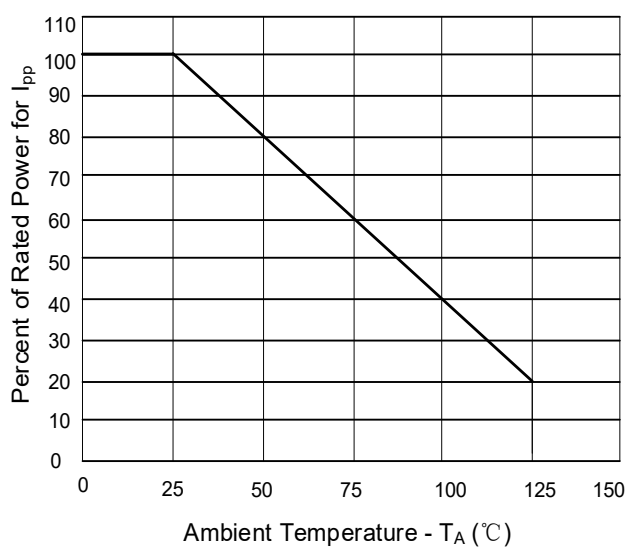
Note1: 8/20 μs pulse waveform.

Typical Performance Characteristics (TA=25°C unless otherwise specified)

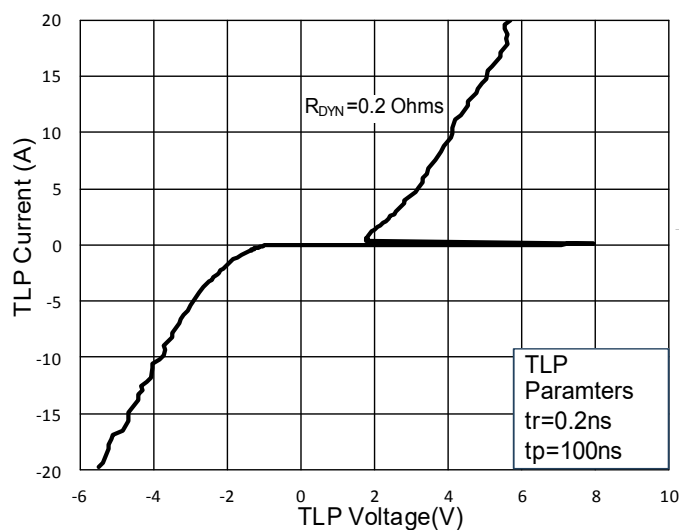
Peak Pluse Power vs. Pluse Time



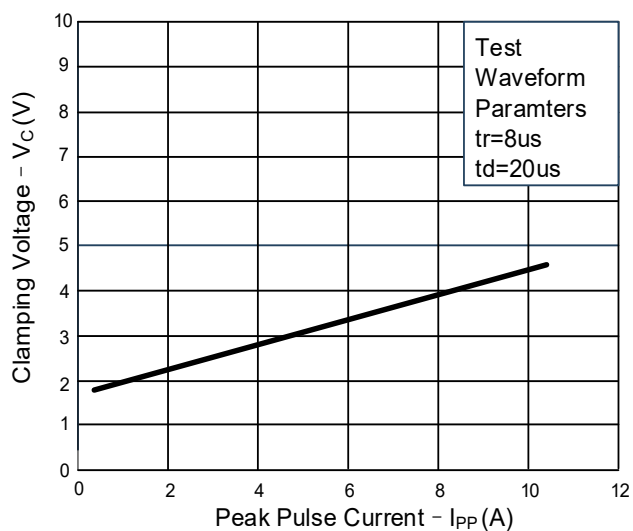
Power Derating Curve



TLP I-V Curve



Reverse Clamping Voltage vs. Peak Pulse Current



DFN1610-6 Package Outline Drawing

