

# TPD4EUSB30DQAR-TP

4-Line Uni-directional TVS Diode

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#### **Features**

- ◆ 100 Watts Peak Pulse Power per Line (tp=8/20µs)
- ♦ Protects two or four I/O lines
- ◆ Low capacitance: 0.3pF typical (I/O to I/O)
- Low operating voltage: 5V
- RoHS Compliant
- ◆ IEC61000-4-2 (ESD) ±25kV (air), ±20kV (contact)
- ◆ IEC61000-4-4 (EFT) 40A (5/50ηs)
- IEC61000-4-5 (Lightning) 4A (8/20μs)

# Ordering Information

Part Number	<b>Qty per Reel</b>	Reel Size
TPD4EUSB30DQAR-TP	3000	7"

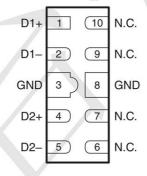
## **Mechanical Characteristics**

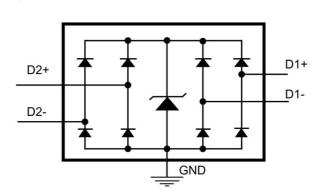
- Package: DFN2510-10 (2.5×1.0×0.5mm)
- ♦ Ultra low leakage: nA level
- ◆ Case Material: "Green" Molding Compound.
- UL Flammability Classification Rating 94V-0
- ♦ Moisture Sensitivity: Level 3 per J-STD-020
- ◆ Terminal Connections: See Diagram Below

## **Applications**

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

## **Dimensions and Pin Configuration**





Marking: xyBMR

BMR = Device code xy=date code



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

Parameter	Symbol	Value	Unit
Peak Pulse Power (8/20μs)	Ppk	100	W
Peak Pulse Current (8/20µs)	IPP	4	Α
ESD per IEC 61000-4-2 (Air) ESD per IEC 61000-4-2 (Contact)	VESD	± 25 ± 20	kV
Operating Temperature Range	TJ	−55 to +125	°C
Storage Temperature Range	Tstg	-55 to +150	°C

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

Parameter	Symbol	Min	Тур	Max	Unit	Test Condition
Reverse Working Voltage	VRWM		3	5	V	Any I/O pin to ground
Breakdown Voltage	VBR	6	8	9	V	IT = 1mA, any I/O pin to ground
Reverse Leakage Current	I <sub>R</sub>			0.4	μA	VRWM = 5V, any I/O pin to ground
Clamping Voltage	Vc	7/		9	V	IPP = 1A (8 x 20µs pulse), any I/O pin to ground
Clamping Voltage	Vc	X <		25	V	IPP=4A (8 x 20us pulse), any I/O pin to ground
Junction Capacitance	Сл		0.3		pF	VR = 0V, f = 1MHz, between I/O pins
Junction Capacitance	Сл		0.6	0.8	pF	VR = 0V, f = 1MHz, any I/O pin to ground



### **Characteristic Curves**

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Fig1. 8/20µs Pulse Waveform

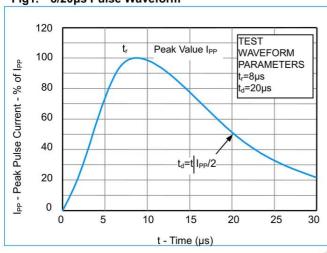


Fig2. ESD Pulse Waveform (according to IEC 61000-4-2)

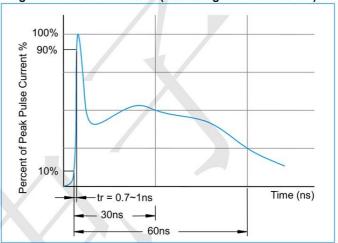


Fig3. Non - Repetitive Peak Pulse Power vs. Pulse Time

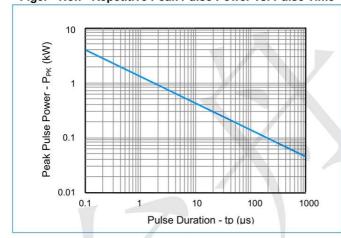
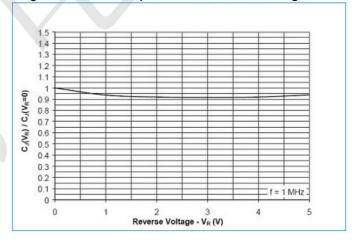


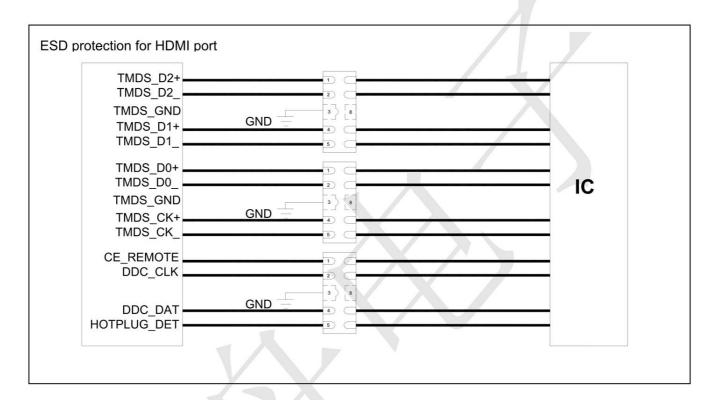
Fig4. Normalized Capacitance vs. Reverse Voltage





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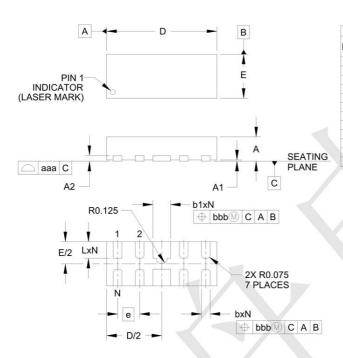
### **Application Information**





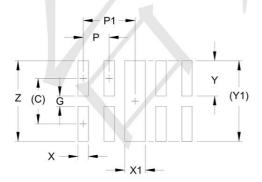
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# **Outline Drawing - DFN2510-10**



DIMENSIONS						
DIM	INCHES		MILLIMETERS			
ואווט	MIN	NOM	MAX	MIN	NOM	MAX
Α	.020	.023	.026	0.50	0.58	0.65
A1	0.00	.001	.002	0.00	0.03	0.05
A2	(.005)			(0.13)		
b	.006	.008	.010	0.15	0.20	0.25
b1	.014	.016	.018	0.35		
D	.094	.098	.102	2.40	2.50	2.60
Ε	.035	.039	.043	0.90	1.00	1.10
е	.020 BSC			0.50 BSC		
L	.012	.015	.017	0.30	0.38	0.425
N	8				8	
aaa	.003			0.08		
bbb		.004			0.10	

## Land Pattern - DFN2510-10



	DIMEN	ISIONS		
DIM	INCHES	MILLIMETERS		
С	(.034)	(0.875)		
G	.008	0.20		
Р	.020	0.50		
P1	.039	1.00		
X	.008	0.20		
X1	.016	0.40		
Υ	.027	0.675		
Y1	(.061)	(1.55)		
Z	.061	1.55		