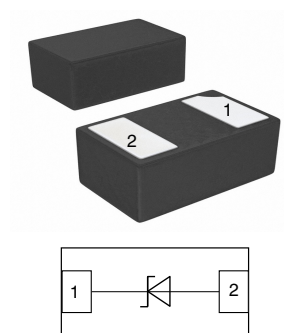


ESD/Surge Protection Diode in DFN1610

Features

- 1500 Watts peak pulse power ($t_p = 8/20\mu s$)
- DFN1610 package
- Unidirectional configurations
- Solid-state silicon-avalanche technology
- Low clamping voltage
- Low leakage current
- Normal capacitance ($C_j = 250pF$)
- Protection one data/power line to:
 - IEC 61000-4-2 $\pm 30kV$ contact $\pm 30kV$ air
 - IEC 61000-4-4 (EFT) 40A (5/50ns)
 - IEC 61000-4-5 (Lightning) 50A (8/20 μs)



Mechanical Data

- **Case:** DFN1610 (plastic package)
Lead free; RoHS compliant; Halogen free
- **Molding Compound Flammability Rating:**
UL 94 V-0
- **Terminals:** High temperature soldering guaranteed:
260 °C/10 sec. at terminals

Applications

- Charger Protection
- Parallel & Serial Port Protection
- Personal Digital Assistant (PDA)
- Microcontroller Input Protection
- Cellular Phones
- I²C Bus Protection

Absolute Maximum Ratings

Ratings at 25 °C, ambient temperature unless otherwise specified

Parameter	Symbol	Value	Unit
Peak Pulse Power ($T_p = 8/20\mu s$)	P_{PP}	1500	W
ESD contact/air discharge (IEC-61000-4-2)	V_{ESD}	30/30	kV
Peak Pulse Current ($t_p = 8/20\mu s$)	I_{PP}	50	A
Junction Temperature	T_J	-40 to +125	°C
Storage temperature	T_{STG}	-55 to +150	°C

Electrical Characteristics

($T_A = 25$ °C unless otherwise specified)

Parameter	Symbol	Condition	Min	Typ	Max	Unit
Reverse stand-off Voltage	V_{RWM}				12	V
Reverse Breakdown Voltage	V_{BR}	$I_T = 1mA$	13.3			V
Reverse Leakage Current	I_R	$V_R = 12V$			1	μA
Clamping Voltage (IEC 61000-4-5)	V_C	$I_{PP} = 1A$			15	V
Clamping Voltage (IEC 61000-4-5)	V_C	$I_{PP} = 30A$			24	V
Clamping Voltage (IEC 61000-4-5)	V_C	$I_{PP} = 50A$			30	V
Junction Capacitance	C_J	$V_R = 0V, f = 1MHz$		250		pF

Typical Characteristics ($T_{amb} = 25^{\circ}\text{C}$ unless otherwise specified)

Fig.1 Peak Pulse Power Rating Curve

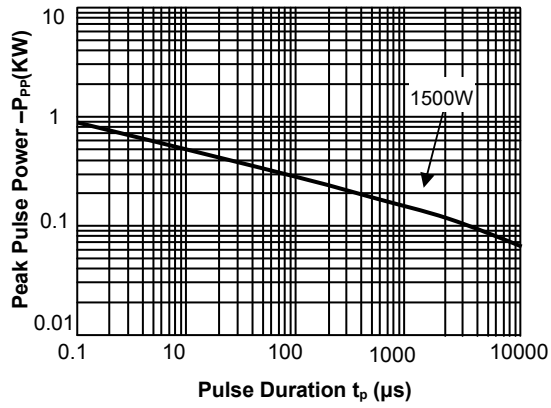


Fig.2 Pulse Derating Curve

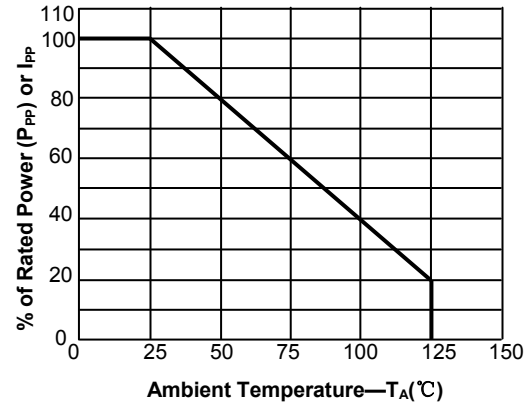


Fig.3 Pulse Waveform-8/20μs

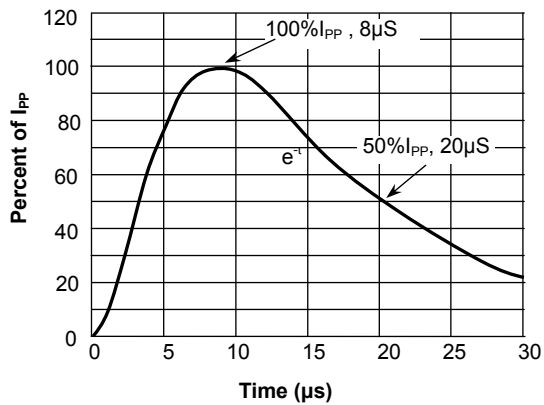
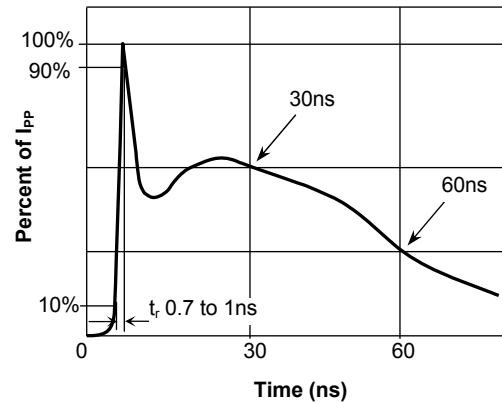
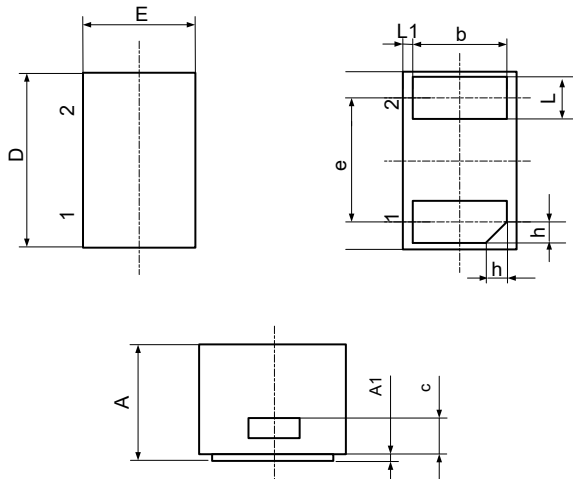


Fig.4 Pulse Waveform-ESD(IEC61000-4-2)

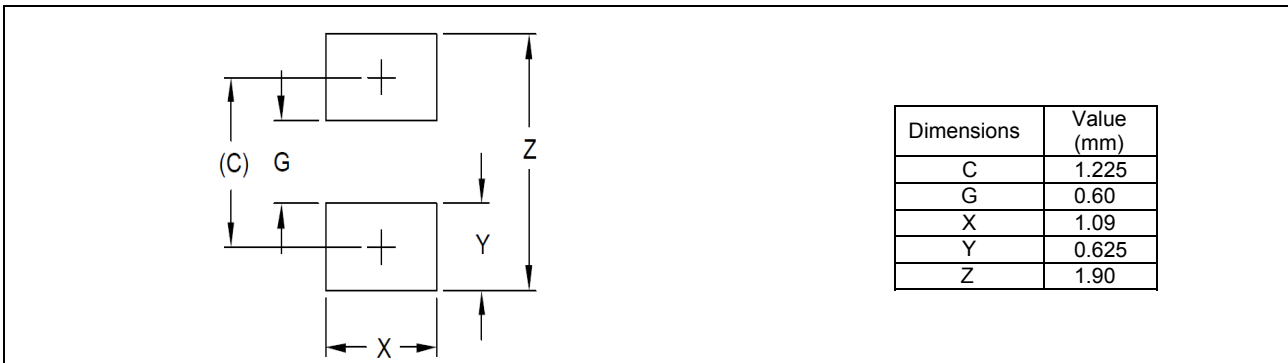


Package Dimensions

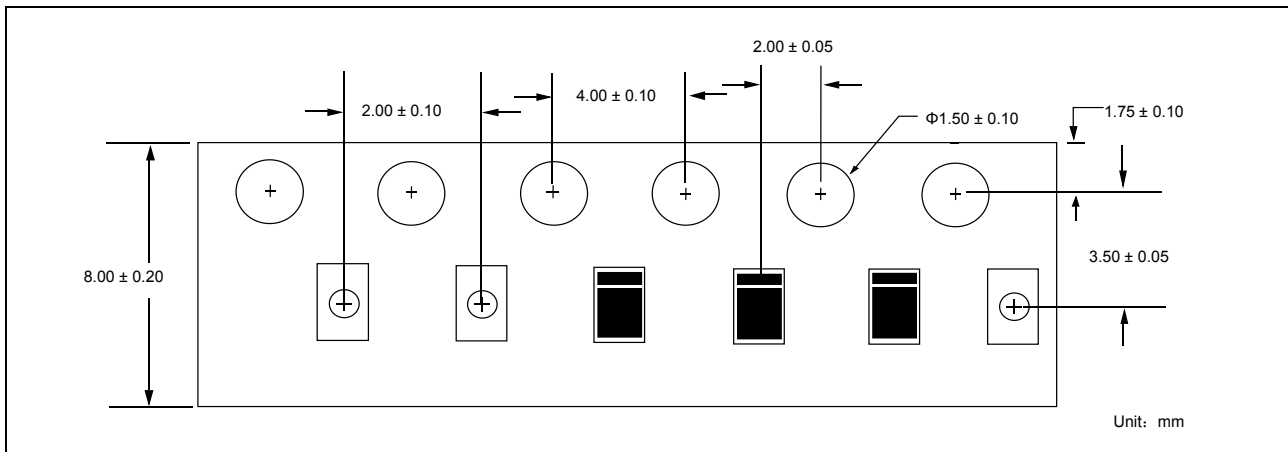


SYMBOL	DIMENSIONS		
	MILLIMETER		
	MIN	NOM	MAX
A	0.450	0.500	0.550
A1	0.000	0.020	0.050
b	0.750	0.800	0.850
c	0.10	0.150	0.200
D	1.550	1.600	1.650
e	1.1BSC		
E	0.950	1.000	1.050
L	0.350	0.400	0.450
L1	0.05REF		
h	0.150	0.200	0.250

Pad Dimensions



Package Information



Marking



Ordering information

Order code	Package	Packaging option	Base quantity	Weight	Packaging specification
CESD1610HC12VU	DFN1610	Tape and reel	10000pcs / reel	3.5mg	EIA STD RS-481

Revision history

Date	Revision	Changes
23-May-2016	1.0	Initial release

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