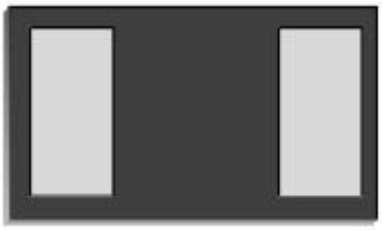
Transient Voltage Suppressors for ESD Protection

Low Capacitance

Feature

- Ultra small package: 1.6x1.0x0.5mm
- Protects one data or power line
- Working Voltage: 12V
- Low clamping voltage
- 2-pin leadless package
- Complies with following standards:
  - – IEC 61000-4-2 (ESD) immunity test
    Air discharge: ±30kV;Contact discharge: ±30kV
  - – IEC61000-4-5 (Lightning) 75A (8/20μs)
- RoHS Compliant

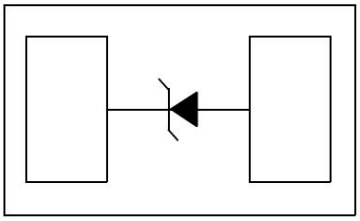
DFN1610-2L



Applications

- Mobile Phones and Accessories
- Battery Protection
- USB Power line
- Power Line Protection
- Hand Held Portable Applications

Pin Configuration



Mechanical Characteristics

- Package: DFN1610-2L
- Case Material: “Green” Molding Compound.
- Moisture Sensitivity: Level 1 per J-STD-020
- Packaging: 3000 PCS / Tape & Reel
- Reel Size: 7 inch

Absolute Maximum Ratings (TA=25℃ unless otherwise specified)

Parameter	Symbol	Value	Units
Peak Pulse Current (8/20μs)	I_{PP}	75	A
ESD per IEC 61000−4−2 (Air) **ESD per IEC 61000−4−2 (Contact)**	V_{ESD}	±30 ±30	KV
Operating Temperature Range	T_{OP}	−40 to +125	℃
Storage Temperature Range	T_{STG}	−40 to +125	℃

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SE12N9P11GJ

Electrical Characteristics (T_A= 25 ℃ unless otherwise specified)

Parameter	Symbol	Conditions	Min	Typical	Max	Units
Reverse Working Voltage	V_{RWM}	--	--	--	12	V
Breakdown Voltage	V_{BR}	I_T=1mA	12.6	--	--	V
Reverse Leakage Current	I_R	V_{RWM}=12V	--	--	0.1	μA
Clamping Voltage	V_C	I_{PP}=1A (8 x 20μs pulse)	--	--	18	V
Clamping Voltage	V_C	I_{PP}=75A (8 x 20μs pulse)	--	--	25	V
Junction Capacitance	C_J	V_R=0V, f=1Mhz	--	--	500	pF

Ratings and V-I Curve Characteristics Curves (T_A=25 ℃, unless otherwise noted)

Fig1. Peak Pulse Power vs. Pulse Time

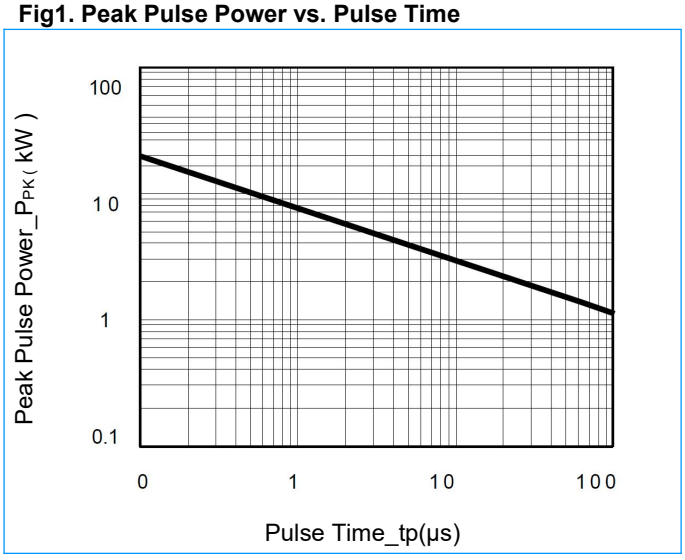


Fig2. Power Derating Curve

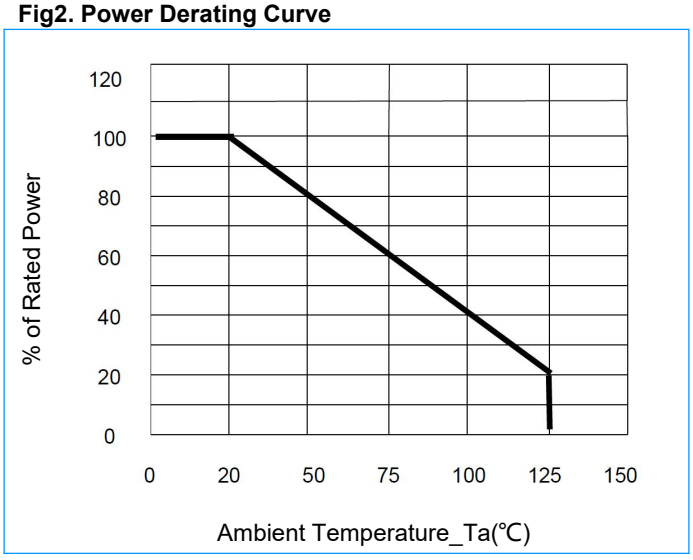
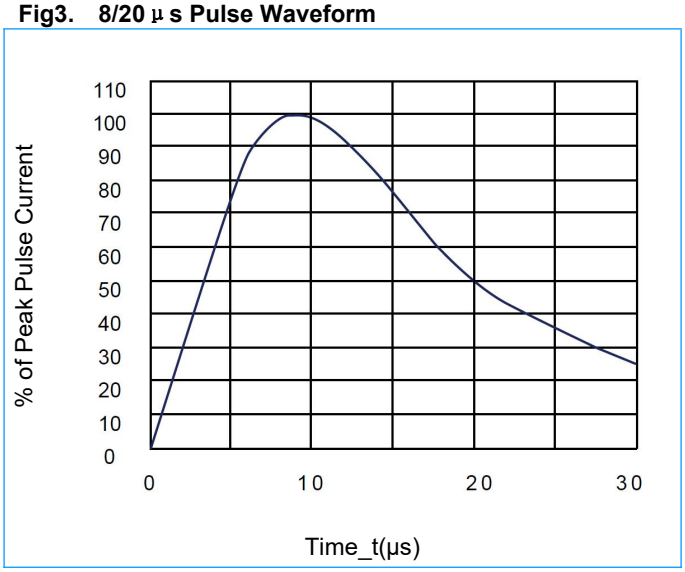


Fig3. 8/20 μ s Pulse Waveform



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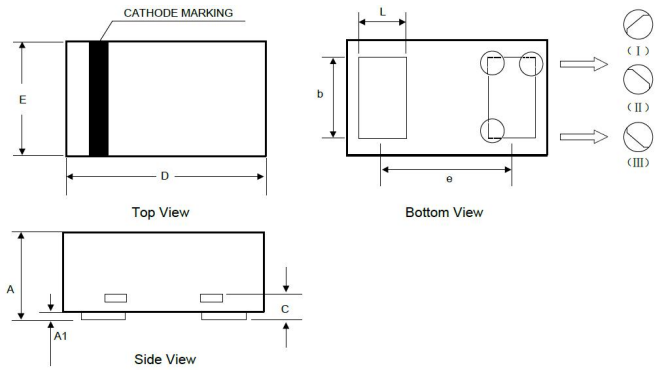
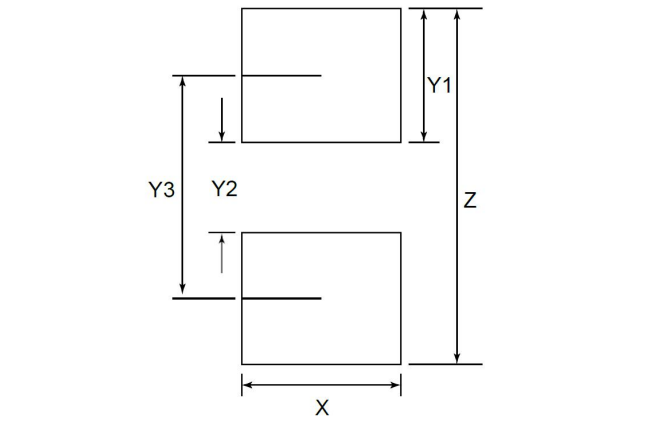
DFN1610-2L Package Outline Drawing



Symbol	Millimeters			Inches		
	Min.	Nom.	Max.	Min.	Nom.	Max.
A	0.45	0.50	0.55	0.018	0.020	0.022
A1	--	0.02	0.05	--	0.001	0.002
b	0.75	0.80	0.85	0.030	0.032	0.034
c	0.10	0.15	0.20	0.004	0.006	0.008
D	1.55	1.60	1.65	0.062	0.064	0.066
e	1.10 BSC			0.044 BSC		
E	0.95	1.00	1.05	0.038	0.040	0.042
L	0.35	0.40	0.45	0.014	0.016	0.018

Suggested Land Pattern



Symbol	Dimensions	
	Millimeters	Inches
X	1.00	0.040
Y1	0.62	0.025
Y2	0.60	0.024
Y3	1.22	0.049
Z	1.85	0.074