

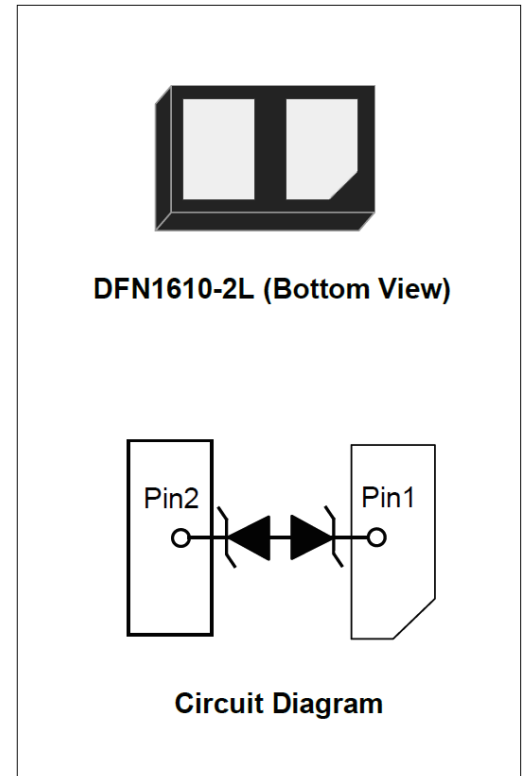
1-Line, Bi-directional, Transient Voltage Suppressor

Features

- IEC 61000-4-2 (ESD) $\pm 30\text{kV}$ (air), $\pm 30\text{kV}$ (contact)
- IEC 61000-4-5 (Lightning) 120A (8/20 μs)
- IEC 61000-4-4 (EFT) 40A (5/50ns)
- Ultra small package: 1.6x1.0x0.5mm
- Operating voltage : 5V
- Low clamping voltage
- Low leakage current
- 2-pin leadless package

Applications

- Mobile Phones
- Battery Protection
- Power Line Protection
- Vbat pin for Mobile Devices
- Hand Held Portable Applications



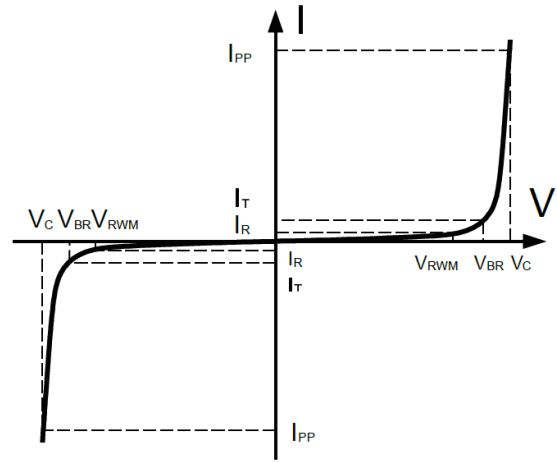
Mechanical Characteristics

- Case: DFN1610-2L, molded plastic.
- Epoxy: UL 94V-0 rate flame retardant.
- Moisture Sensitivity: Level 3 per J-STD-020
- RoHS Compliant

Absolute Maximum Ratings ($T_A = 25^\circ\text{C}$ Unless otherwise specified)

Parameter	Symbol	Value	Unit
Peak Pulse Power ($t_p = 8/20\mu\text{s}$)	P_{PP}	1620	W
Peak Pulse Current ($t_p = 8/20\mu\text{s}$)	I_{PP}	120	A
ESD per IEC 61000-4-2 (Air)	V_{ESD}	± 30	KV
ESD per IEC 61000-4-2 (Contact)		± 30	KV
Operating Temperature Range	T_J	-55 to + 125	$^\circ\text{C}$
Storage Temperature Range	T_{STG}	-55 to + 150	$^\circ\text{C}$

Electrical Parameters (T _A = 25°C)	
Symbol	Parameter
I _{PP}	Reverse Peak Pulse Current
V _C	Clamping Voltage @ I _{PP}
V _{RWM}	Reverse Standoff Voltage
I _R	Reverse Leakage Current @ V _{RWM}
V _{BR}	Breakdown Voltage @ I _T
I _T	Test Current



Electrical Characteristics (T _A = 25°C Unless otherwise specified)						
Parameter	Symbol	Test Conditions	Min.	Typ.	Max.	Units
Reverse Standoff Voltage	V _{RWM}				5	V
Reverse breakdown Voltage	V _{BR}	I _T = 1mA	6			V
Reverse leakage current	I _R	V _{RWM} = 5V			0.5	μA
Clamping Voltage	V _C	I _{PP} = 20A, tp = 8/20μs			8.5	V
Clamping Voltage	V _C	I _{PP} = 120A, tp = 8/20μs			13.5	V
Junction capacitance	C _J	V _R = 0V, f = 1MHz			300	pF

Typical Performance Characteristics ($T_A = 25^\circ\text{C}$ Unless otherwise specified)

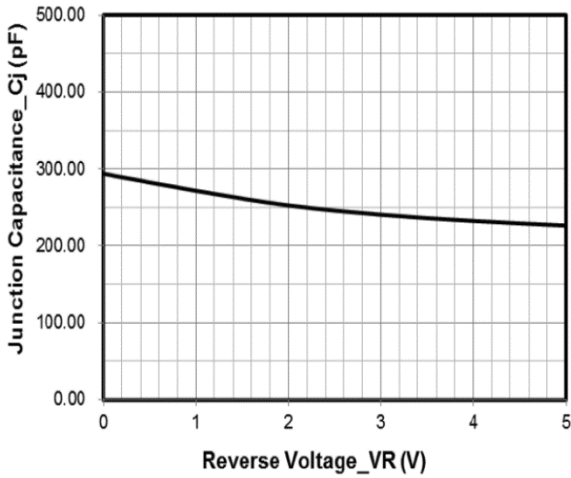


Fig 1. Junction Capacitance vs. Reverse Voltage

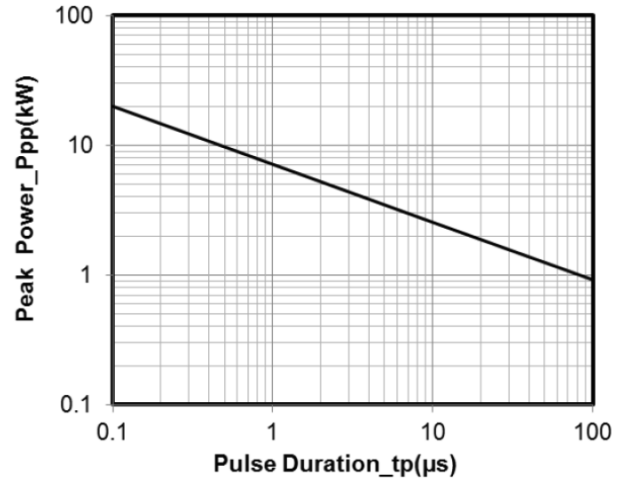


Fig 2. Peak Pulse Power vs. Pulse Time

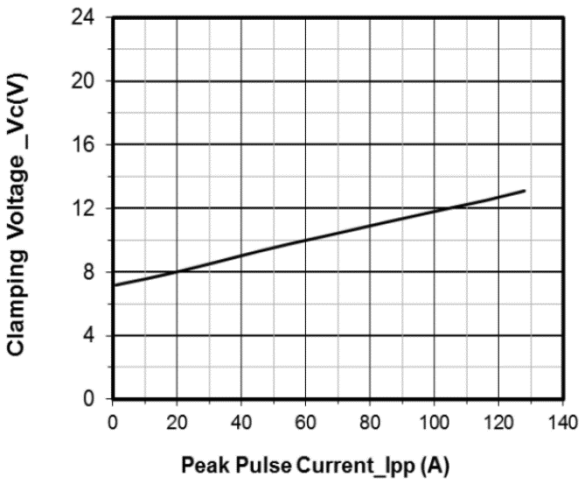


Fig 3. Clamping Voltage vs. Peak Pulse Current

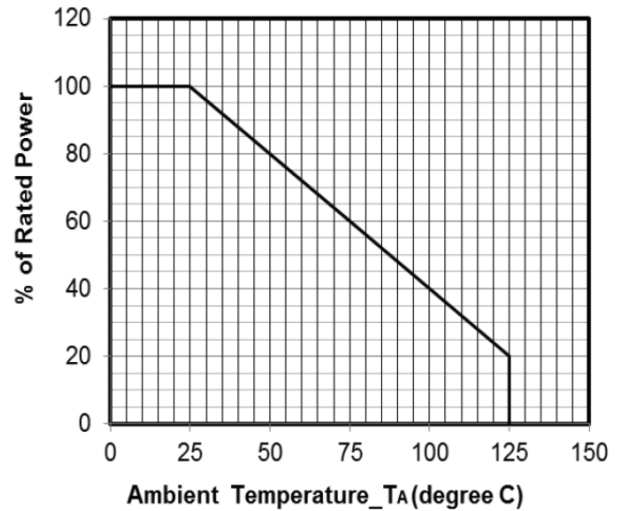


Fig 4. Power Derating Curve

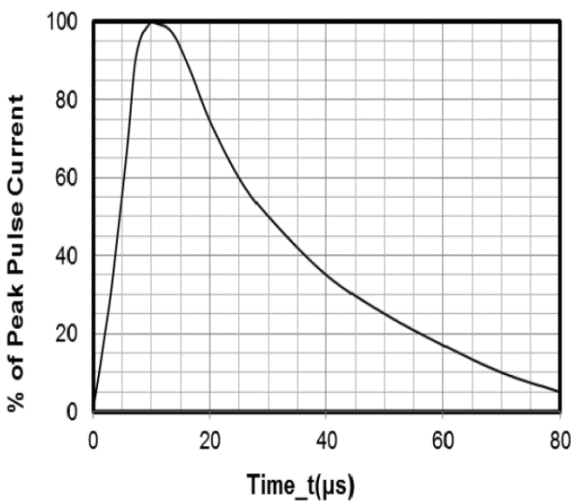


Fig 5. 8/20μs Pulse Waveform

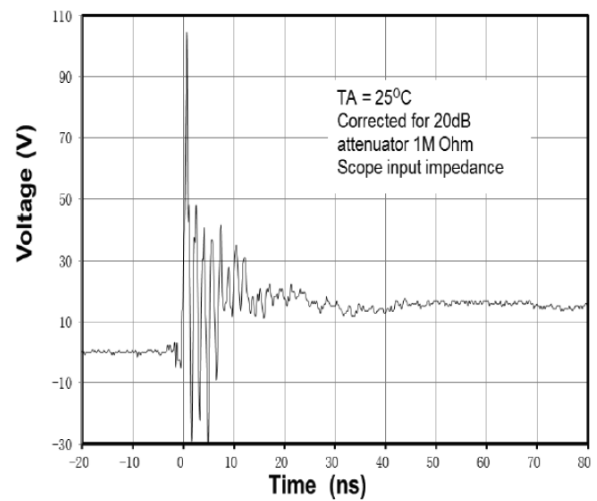


Fig 6. ESD Clamping Voltage
8 kV Contact per IEC61000-4-2

DFN1610-2L Package Outline Drawing

Symbol	DIMENSIONS					
	MILLIMETERS			INCHES		
	Min	Nom	Max	Min	Nom	Max
A	0.45	0.50	0.55	0.018	0.020	0.022
A1	0.00	0.02	0.05	0.000	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
h	0.15	0.20	0.25	0.006	0.008	0.010

Suggested PAD Layout

Symbol	DFN1610-2L	
	(mm)	(inch)
A	1.85	0.074
B	0.60	0.024
C	0.62	0.025
D	1.00	0.040

Marking Code

Part Number	Marking Code
STCDF050BH	58P

58P

Ordering information

Part Number	Package	Base qty	Reel Size	Delivery mode
		(pcs)	(inch)	
STCDF050BH	DFN1610-2L	3,000	7	Tape and reel