

1-Line, Uni-directional, Transient Voltage Suppressor

Features

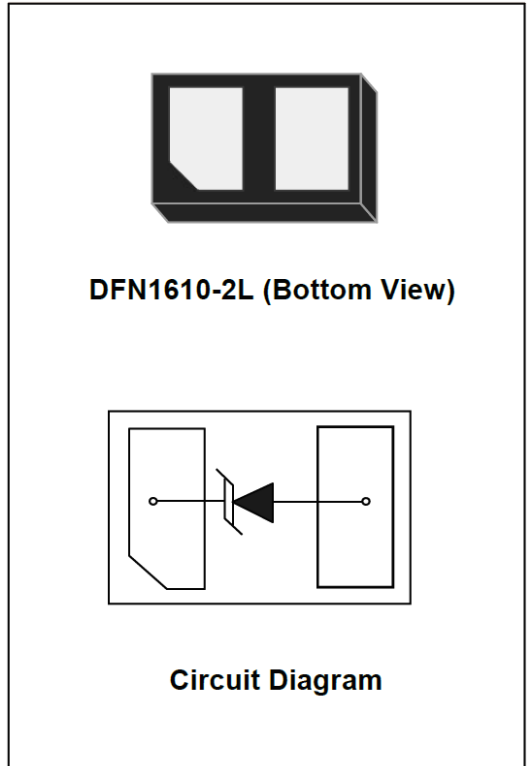
- IEC 61000-4-2 (ESD) $\pm 30\text{kV}$ (air), $\pm 30\text{kV}$ (contact)
- IEC 61000-4-5 (Lightning) 50A (8/20 μs)
- IEC 61000-4-4 (EFT) 40A (5/50ns)
- Unidirectional diode
- Operating voltage : 18V
- Low clamping voltage
- Low leakage current
- 2-pin leadless package

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.
- Terminals: solderable per MIL-STD-750, method 2026.
- Moisture Sensitivity: Level 3 per J-STD-020
- RoHS Compliant



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

Parameter	Symbol	Value	Unit
Peak Pulse Power ($t_p = 8/20\mu\text{s}$)	P_{PP}	1875	W
Peak Pulse Current ($t_p = 8/20\mu\text{s}$)	I_{PP}	50	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 ($T_A = 25^\circ\text{C}$ Unless otherwise noted)

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
I_F	Forward Current
V_F	Forward Voltage @ I_F

Electrical Characteristics ($T_A = 25^\circ\text{C}$ Unless otherwise noted)

Parameter	Symbol	Test Conditions	Min.	Typ.	Max.	Units
Reverse Standoff Voltage	V_{RWM}				18	V
Reverse breakdown Voltage	V_{BR}	$I_T = 1\text{mA}$	19.6			V
Reverse leakage current	I_R	$V_{RWM} = 18\text{V}$			0.1	μA
Forward Voltage	V_F	$I_F = 10\text{mA}$		1.0	1.2	V
Clamping Voltage	V_C	$I_{PP} = 10\text{A}, t_p = 8/20\mu\text{s}$			26	V
Clamping Voltage	V_C	$I_{PP} = 50\text{A}, t_p = 8/20\mu\text{s}$			37.5	V
Junction capacitance	C_J	$V_R = 0\text{V}, f = 1\text{MHz}$			350	pF

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

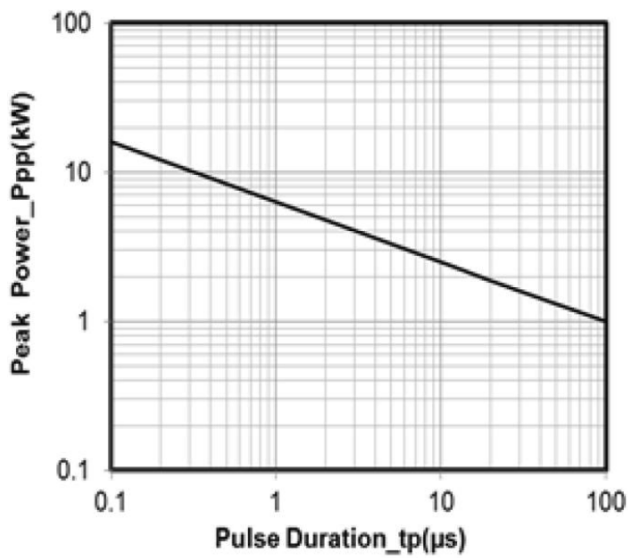


Fig 1. Peak Pulse Power vs. Pulse Time

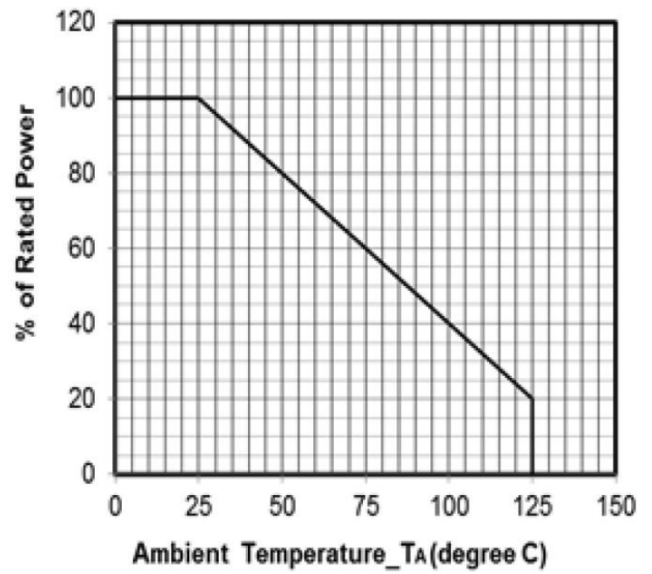


Fig 2. Power Derating Curve

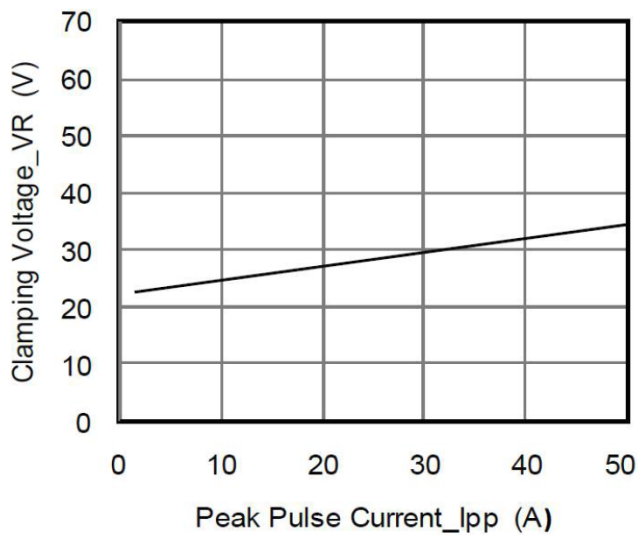


Fig 3. Clamping Voltage vs. Peak Pulse Current

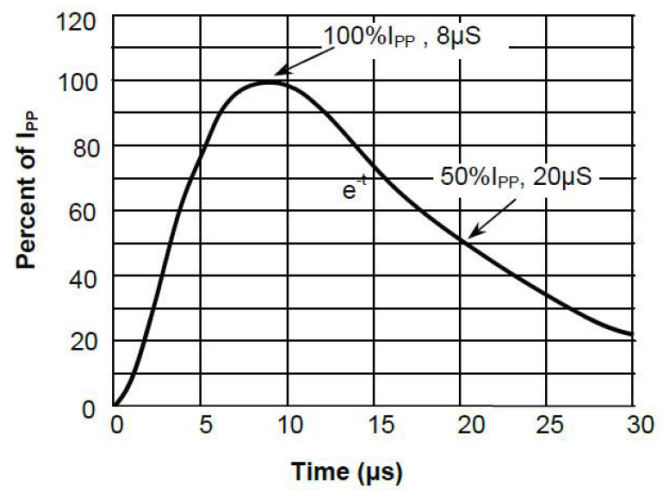


Fig 4. 8 X 20 μs Pulse Waveform

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
STCDF018UH	78

Ordering information

Part Number	Package	Base qty	Reel Size	Delivery mode
		(pcs)	(inch)	
STCDF018UH	DFN1610-2L	3,000	7	Tape and reel