

Features

- Ultra small package: 1.6x1.0x0.5mm
- Protects one data or power line
- Working voltage: 12V
- 2-pin leadless package
- RoHS Compliant



DFN1610-2L

IEC COMPATIBILITY (EN61000-4)

- IEC 61000-4-2 $\pm 30\text{kV}$ contact $\pm 30\text{kV}$ air
- IEC 61000-4-5 (Lightning) 75A (8/20 μs)

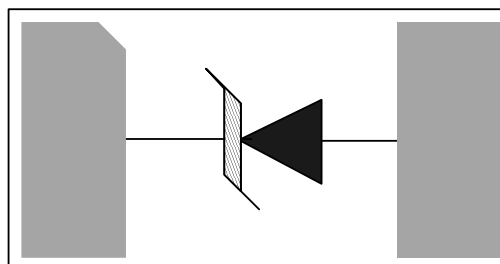
Applications

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

Mechanical Characteristics

- Package: DFN1610-2 (1.6x1.0x0.5mm)
- Case Material: "Green" Molding Compound.
- UL Flammability Classification Rating 94V-0
- Moisture Sensitivity: Level 3 per J-STD-020
- Terminal Connections: See Diagram Below
- Marking Information: See Below

Schematic & PIN Configuration



DFN1610-2L

Absolute Maximum Rating

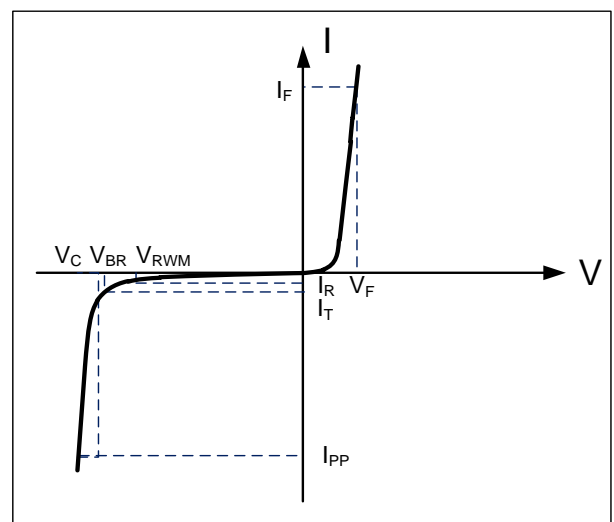
Rating	Symbol	Value	Units
Peak Pulse Power ($t_p = 8/20\mu s$)	P_{PP}	1800	Watts
Peak Pulse Current ($t_p = 8/20\mu s$)	I_{pp}	75	A
ESD per IEC 61000-4-2 (Air) ESD per IEC 61000-4-2 (Contact)	V_{ESD}	30 30	kV
Junction Temperature	T_J	-55 to + 125	°C
Storage Temperature	T_{stg}	-55 to + 125	°C

Electrical Characteristics

Parameter	Test Condition	Symbol	Min	Typ	Max	Unit
Reverse Working Voltage		V_{RWM}			12	V
Breakdown Voltage	$I_T = 1mA$	V_{BR}	13.3		17.8	V
Reverse Leakage Current	$V_{RWM} = 12V$	I_R			0.2	uA
Forward Voltage	$I_F = 10mA$	V_F		1.0	1.2	V
Clamping Voltage	$I_{PP} = 10A$ (8 x 20 μs pulse)	V_C			18	V
Clamping Voltage	$I_{PP} = 70A$ (8 x 20 μs pulse)	V_C			25	V
Junction Capacitance	$V_R = 0V, f = 1MHz$	C_J			500	pF

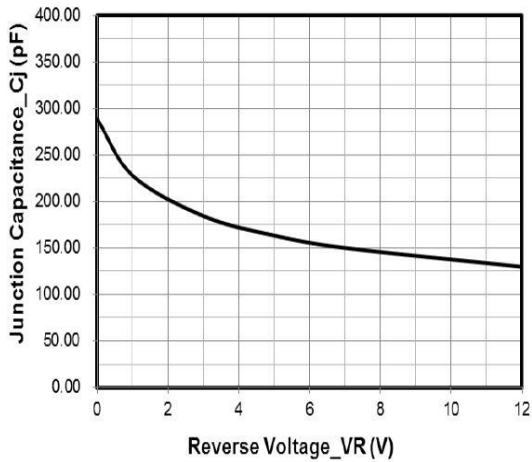
Electrical Parameters (TA = 25°C unless otherwise noted)

Symbol	Parameter
I_{PP}	Maximum Reverse Peak Pulse Current
V_C	Clamping Voltage @ I_{PP}
V_{RWM}	Working Peak Reverse Voltage
I_R	Maximum Reverse Leakage Current @ V_{RWM}
V_{BR}	Breakdown Voltage @ I_T
I_T	Test Current

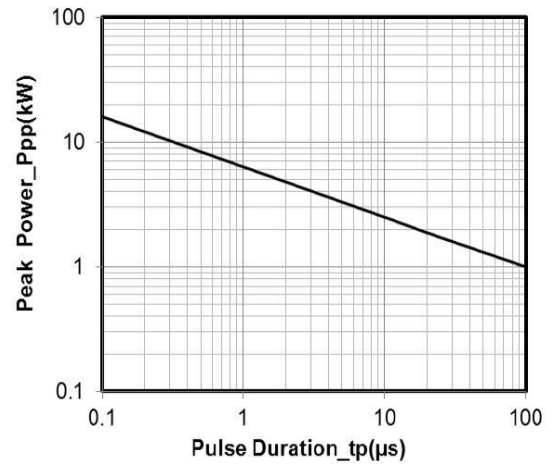


Note: 8/20 μs pulse waveform.

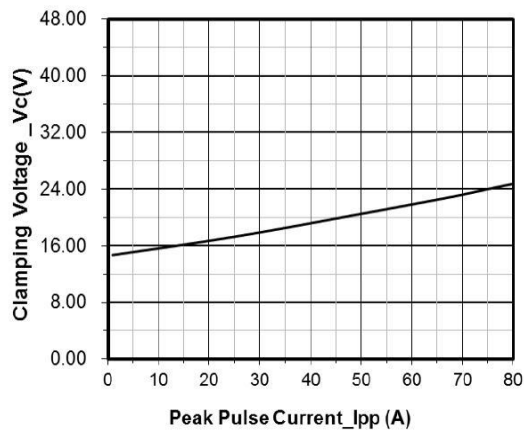
Typical Characteristics



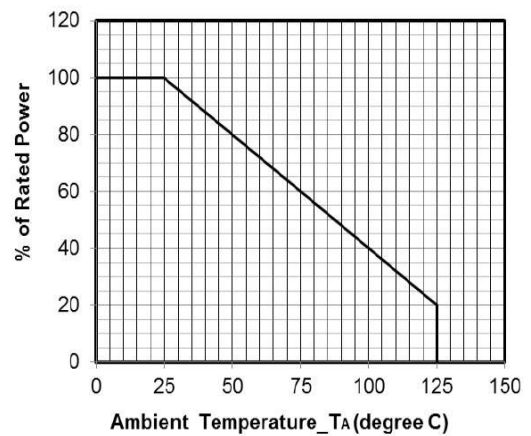
Junction Capacitance vs. Reverse Voltage



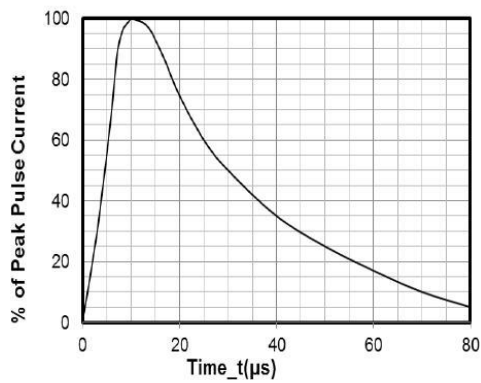
Peak Pulse Power vs. Pulse Time



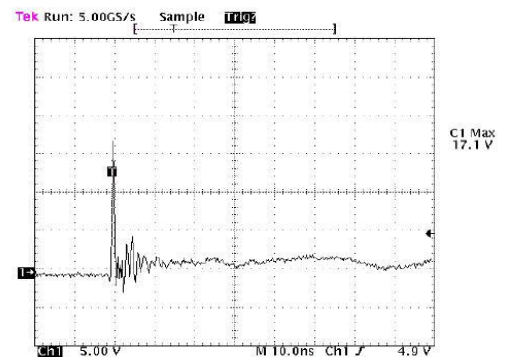
Clamping Voltage vs. Peak Pulse Current



Power Derating Curve



8 X 20μs Pulse Waveform



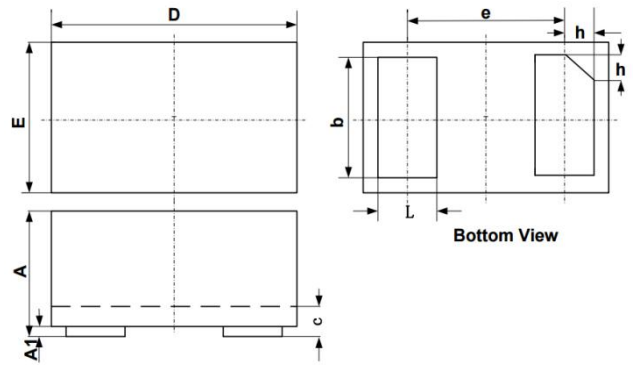
Note: Data is taken with a 10x attenuator

ESD Clamping Voltage

+8 kV Contact per IEC61000-4-2

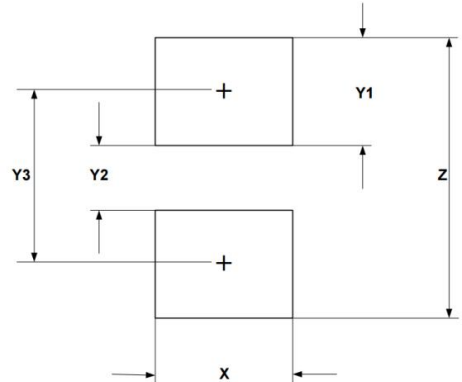
Outline Drawing

SYM	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	0.007
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

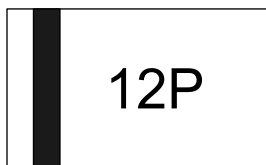


Suggested Land Pattern

SYM	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



Marking



Pin Style: 1. Cathode 2. Anode

Ordering information

Order code	Package	Base qty	Delivery mode
PTN162H500S12C180	DFN1610-2L	3k	Tape and reel