

1-Line Uni-directional TVS Diode

Applications

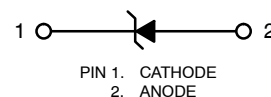
- | Mobile Phones
- | Battery Protection
- | Power Line Protection
- | Vbat pin for Mobile Devices
- | Hand Held Portable Applications

Features

- | Ultra-small package: 1.6x1.0x0.5mm (DFN1610-2)
- | Protects one data or power line
- | Ultra-low leakage current: nA level
- | Low clamping voltage
- | Compliant with:
 - IEC 61000-4-2 (ESD): $\pm 30\text{kV}$ air/contact discharge
 - IEC 61000-4-4 (EFT): 120A (5/50ns)
 - IEC 61000-4-5 (Lightning): 110A (8/20 μs)
- | RoHS compliant



DFN1610-2



MARKING : 5P

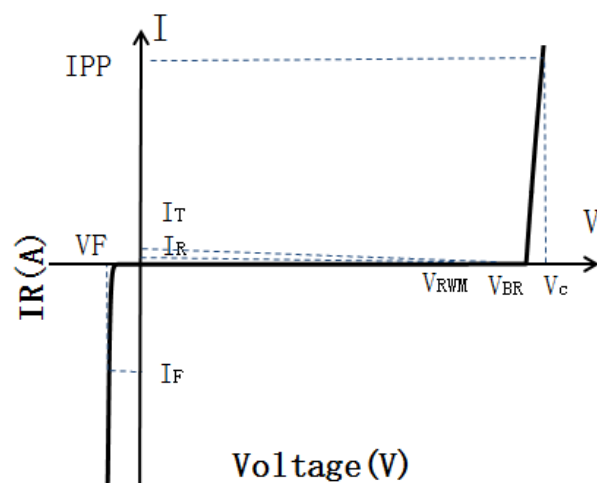
Absolute Maximum Ratings (TA=25°C unless otherwise specified)

Parameter	Symbol	Value	Unit
Peak Pulse Power (8/20 μs)	Ppk	1300	W
Peak Pulse Current (8/20 μs)	IPP	110	A
ESD per IEC 61000-4-2 (Air)	VESD	± 30	kV
ESD per IEC 61000-4-2 (Contact)		± 30	
Operating Temperature Range	TJ	-55 to +125	°C
Storage Temperature Range	Tstg	-55 to +150	°C

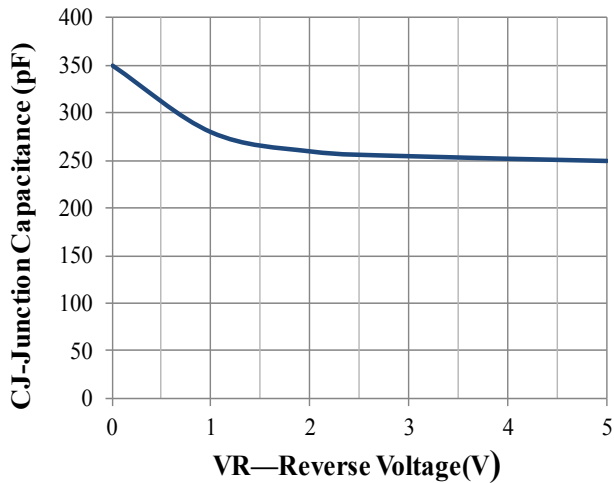
Electrical Characteristics (TA=25°C unless otherwise specified)

Parameter	Symbol	Test Condition	Min	Typ	Max	Unit
Reverse Working Voltage	V_{RWM}				5	V
Breakdown Voltage	V_{BR}	$I_T = 1\text{mA}$		6.0		V
Reverse Leakage Current	I_R	$V_{RWM} = 5\text{V}$			1.0	μA
Clamping Voltage	V_C	$I_{PP} = 1\text{A}$ (8 x 20 μs pulse)		7		V
Clamping Voltage	V_C	$I_{PP} = 110\text{A}$ (8 x 20 μs pulse)		11	13	V
Junction Capacitance	C_J	$V_R = 0\text{V}$, $f = 1\text{MHz}$		350		pF

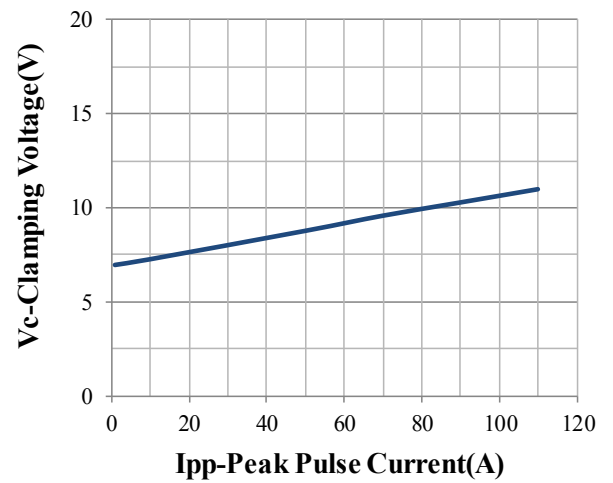
Symbol	Parameter
I_T	Test Current
I_{PP}	Maximum Reverse Peak Pulse Current
V_C	Clamping Voltage @ I_C
I_F	Forward Current
V_F	Forward Voltage @ I_F



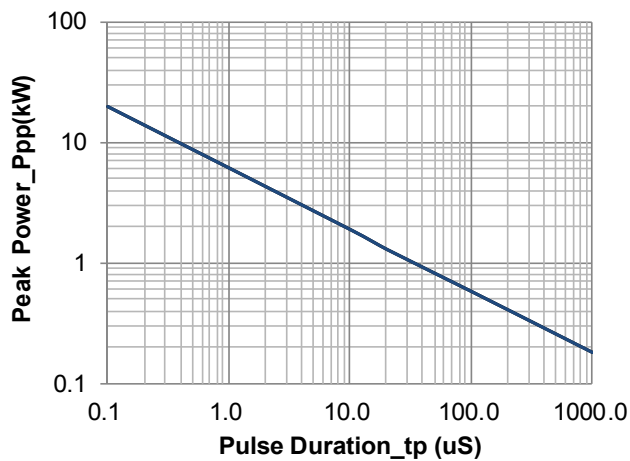
Typical Characteristics



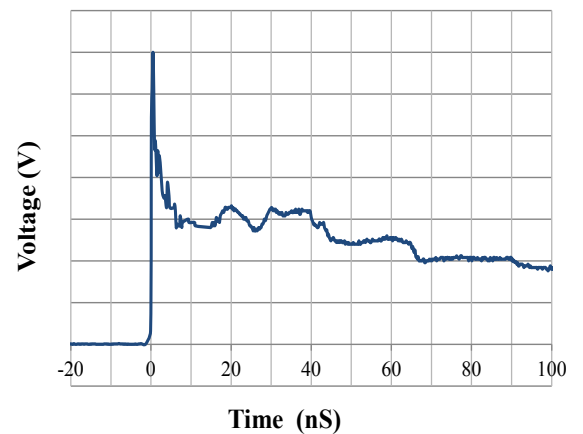
Junction Capacitance vs. Reverse Voltage



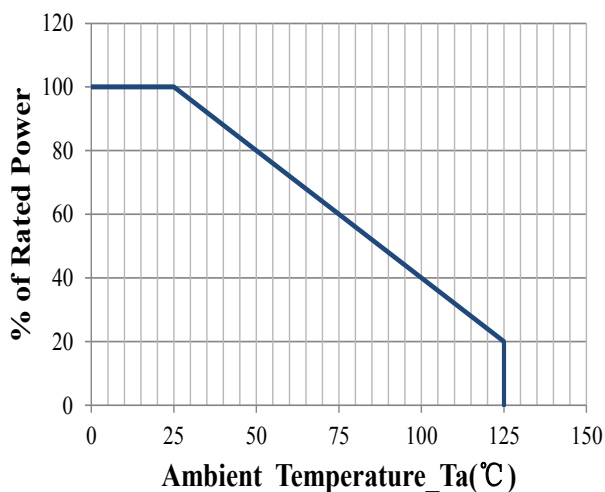
Clamping Voltage vs. Peak Pulse Current



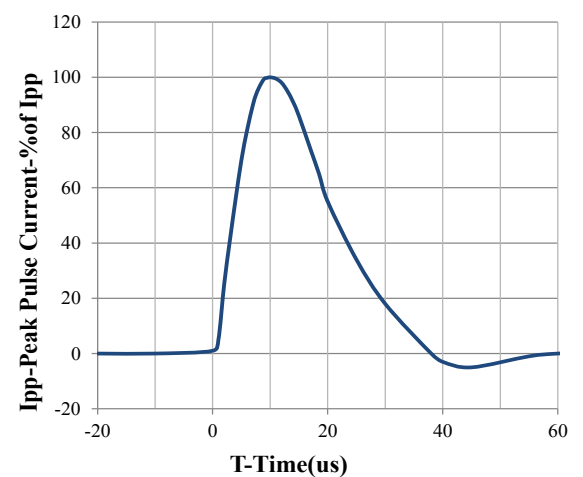
Peak Pulse Power vs. Pulse Time



IEC61000-4-2 Pulse Waveform

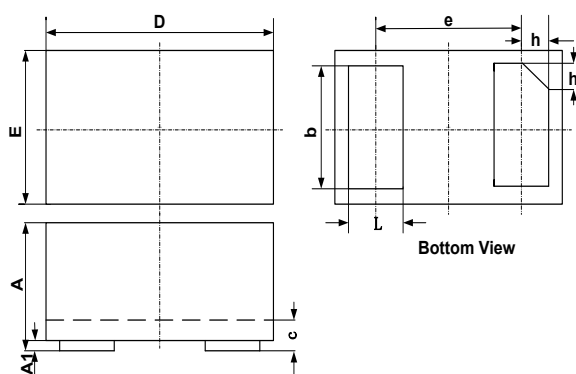


Power Derating Curve

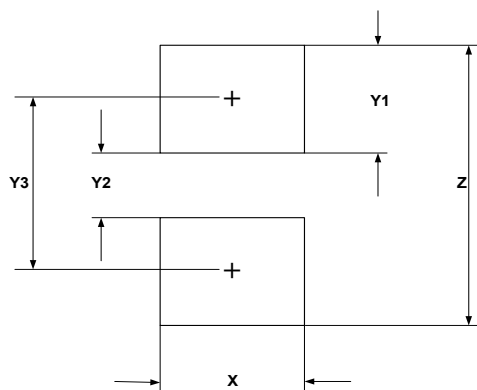


8 X 20us Pulse Waveform

DFN1610-2 PACKAGE OUTLINE DIMENSIONS



SYM	DIMENSIONS					
	MILLIMETERS			INCHES		
	MIN	NOM	MAX	MIN	NOM	MAX
A	0.40	0.45	0.55	0.016	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



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