

1-Line Ultra Low Capacitance Bi-directional TVS Diode

Features

- Operating voltage: 1.5V
- Low clamping voltage
- 2-pin leadless package
- Complies with following standards:
 - IEC 61000-4-2 (ESD) immunity test
Air discharge: $\pm 15\text{kV}$
Contact discharge: $\pm 12\text{kV}$
 - IEC61000-4-5 (Lightning) 4 A (8/20 μs)
- RoHS Compliant

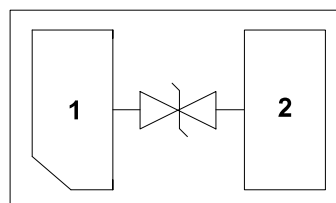
Dimensions DFN0603



Applications

- USB Ports
- SIM Ports
- Smart Phones
- Wireless Systems
- Set-top box and digital TV
- Digital video interface (DVI)
- Ethernet 10/100/1000 Base T

Pin Configuration



Mechanical Characteristics

- Package: DFN0603
- Lead Finish: Lead Free
- UL Flammability Classification Rating 94V-0
- Quantity Per Reel: 10,000pcs
- Reel Size: 7 inch
- Device Marking: 1S

Absolute Maximum Ratings (T_{amb}=25°C unless otherwise specified)

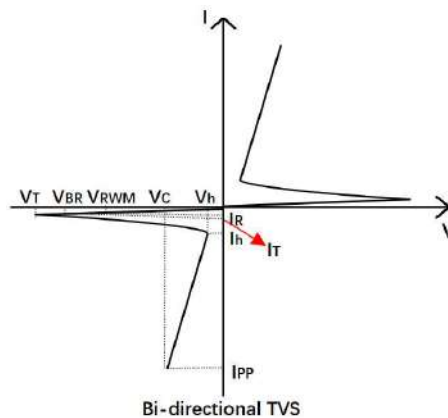
Parameter	Symbol	Value	Unit
Peak Pulse Power (8/20 μs)	P _{pp}	20	W
ESD per IEC 61000-4-2 (Air)	V _{ESD}	± 15	kV
ESD per IEC 61000-4-2 (Contact)		± 12	
Operating Temperature Range	T _J	-40 to +125	°C
Storage Temperature Range	T _{STJ}	-55 to +150	°C

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

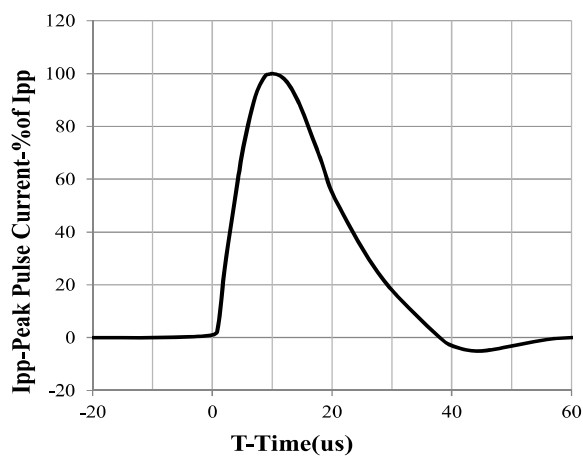
Parameter	Symbol	Test Condition	Min	Typ	Max	Unit
Reverse Working Voltage	V_{RWM}				1.5	V
Breakdown Voltage	V_{BR}	$I_T = 1\text{mA}$	5	6.5		V
Reverse Leakage Current	I_R	$V_{RWM} = 1.5\text{V}$			0.1	μA
Clamping Voltage	V_C	$I_{PP} = 1\text{A}$ (8 x 20 μs pulse)		1.8		V
Clamping Voltage	V_C	$I_{PP} = 4\text{A}$ (8 x 20 μs pulse)		2.9	3.5	V
Junction Capacitance	C_J	$V_R = 0\text{V}$, $f = 1\text{MHz}$		0.2	0.3	pF

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

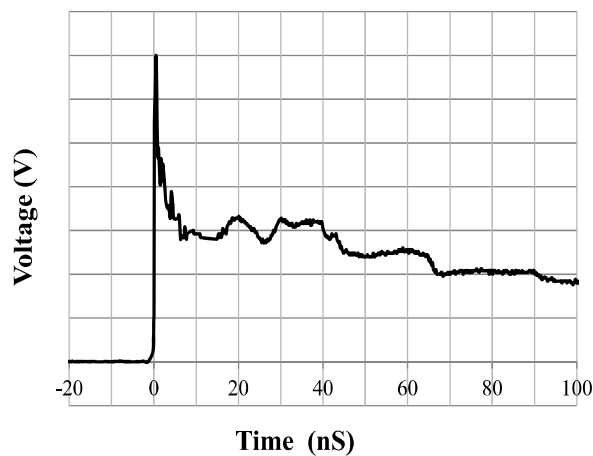
Symbol	Parameter
V_{RWM}	Peak Reverse Working Voltage
I_R	Reverse Leakage Current @ V_{RWM}
V_{BR}	Breakdown Voltage @ I_T
I_T	Test Current
I_{PP}	Maximum Reverse Peak Pulse Current
V_C	Clamping Voltage @ I_{PP}
V_h	Holding Voltage
I_h	Holding Current
V_T	Reverse Triggering Voltage



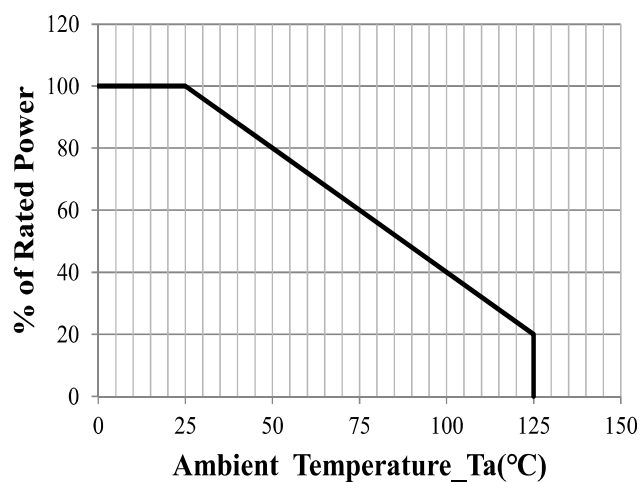
Typical Performance Characteristics (TA=25°C unless otherwise specified)



8 / 20us Pulse Waveform

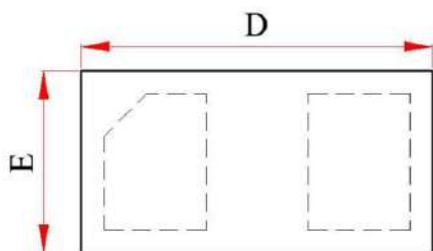


IEC61000-4-2 Pulse Waveform

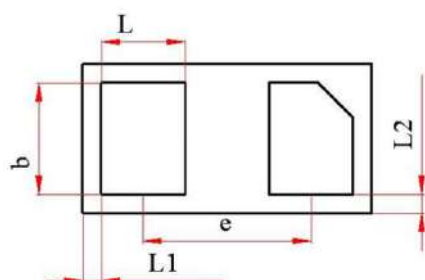


Power Derating Curve

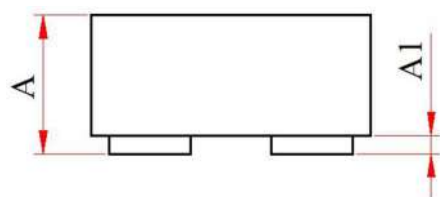
DFN0603 Package Outline Drawing



TOP VIEW



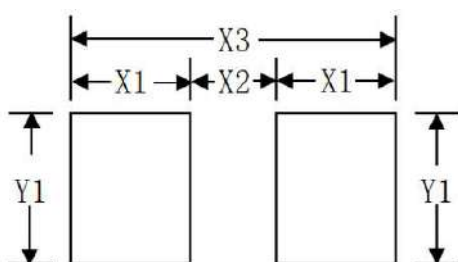
BOTTOM VIEW



SIDE VIEW

SYM	DIMENSIONS					
	MILLIMETERS			INCHES		
	Min	Typ	Max	Min	Typ	Max
A	0.280	--	0.340	0.0110	--	0.0134
A1	--	--	0.050	--	--	0.0020
D	0.590	0.620	0.640	0.0232	0.0244	0.0252
E	0.290	0.320	0.340	0.0114	0.0126	0.0134
b	0.215	0.240	0.265	0.0085	0.0094	0.0104
L	0.155	0.180	0.205	0.0061	0.0071	0.0081
L1	0.04 REF			0.0016 REF		
L2	0.04 REF			0.0016 REF		
e	0.36 BSC			0.0142 BSC		

Suggested Land Pattern



SYM	DIMENSIONS	
	MILLIMETER	INCHES
X1	0.25	0.010
X2	0.15	0.006
X3	0.65	0.026
Y1	0.30	0.012