

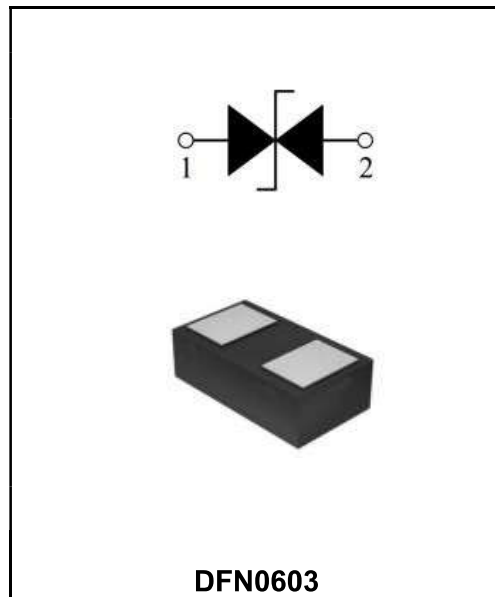
Bi-directional ESD Protection Diode

Features

- ◆Capacitance: 15pF(typ.)
- ◆Reverse Working Voltage: 5V
- ◆IEC 61000-4-2 (ESD Air): $\pm 25\text{KV}$
- ◆IEC 61000-4-2 (ESD Contact): $\pm 25\text{KV}$
- ◆IEC 61000-4-5 (Lightning 8/20 μs): 7A

Application

- ◆Smart Phone and Tablet PC
- ◆TV and Set Top Box
- ◆Wearable Devices
- ◆PDA



Order Information

Part Number	Package	Marking	Size (mm)	Delivery Form	Delivery Quantity
ESD0603B5V0C	DFN0603	A5.	0.62x0.32x0.31	7" T&R	15000PCS/Tape

Limiting Values(TA = 25 °C, unless otherwise specified)

Symbol	Parameter	Conditions	Min	Max	Unit
V _{ESD}	Electrostatic Discharge Voltage	IEC 61000-4-2; Contact Discharge	-	± 25	kV
		IEC 61000-4-2; Air Discharge	-	± 25	kV
P _{PP}	Peak Pulse Power	tP = 8/20 μs		70	W
I _{PPM}	Rated Peak Pulse Current	tP = 8/20 μs		7	A
T _A	Operating Temperature Range	-	-55	125	°C
T _{stg}	Storage Temperature Range	-	-55	150	°C

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

Symbol	Parameter	Conditions	Min	Typ.	Max	Unit
V _{RWM}	Reverse Working Voltage	TA = 25 °C	-	-	5.0	V
V _{BR}	Breakdown Voltage	IR = 1mA; TA = 25 °C	5.6	6.5	8.4	V
I _R	Reverse Leakage Current	VRWM = 5 V; TA = 25 °C	-	-	0.1	μA
V _C	Clamping Voltage	IPP=1A, tP =8/20 μs	-	-	6	V
		IPP=7A, tP =8/20 μs	-	-	10	V
C _J	Junction Capacitance	VR = 0V, f = 1 MHz	-	15	18	pF

Typical Characteristics

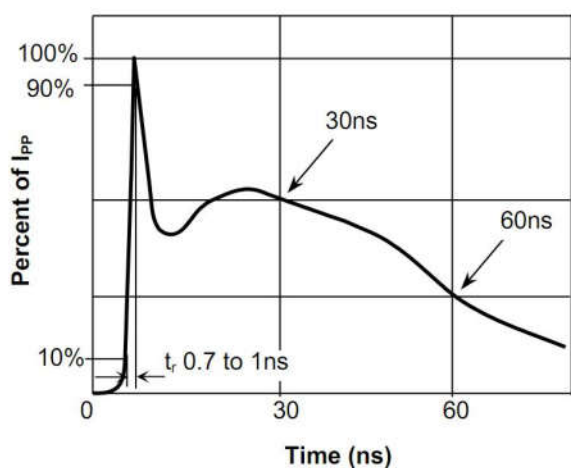


Fig.1 Pulse Waveform-ESD (IEC61000-4-2)

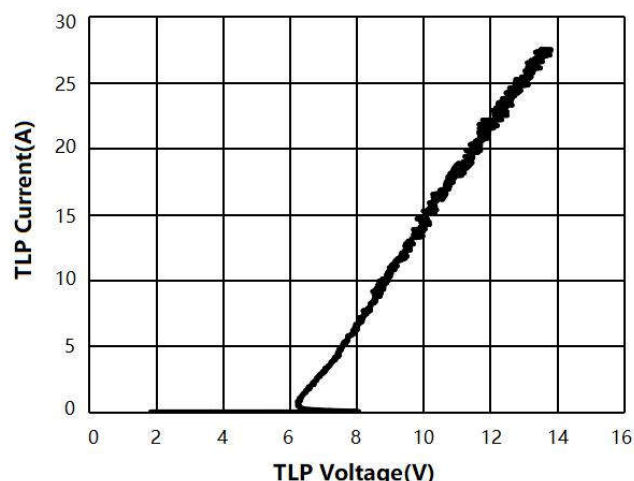


Fig.2 Transmission Line Pulse (TLP)

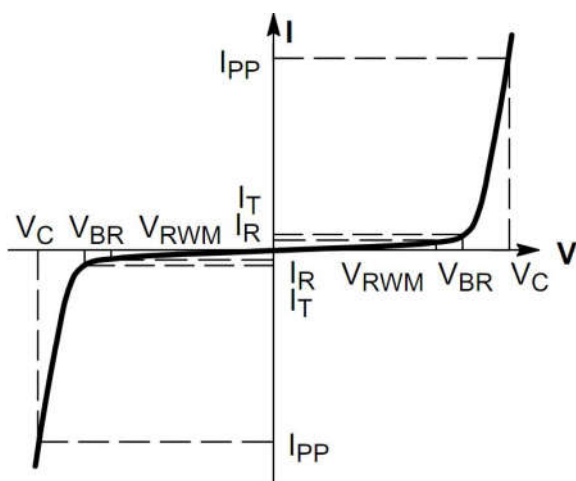


Fig.3 V-I Characteristics for Bidirectional Diode

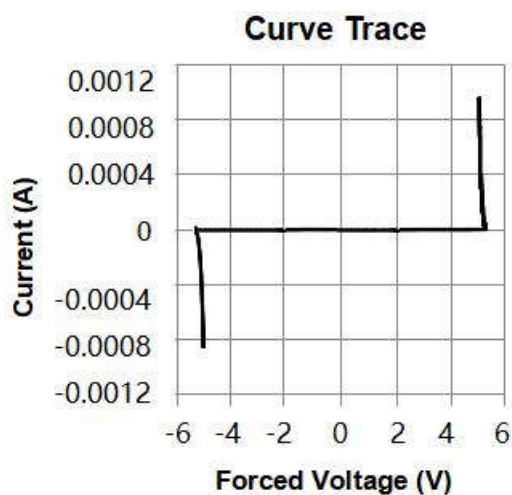


Fig.4 IV Curve

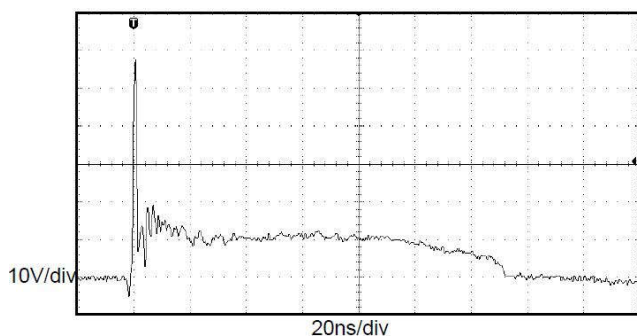


Fig.5 Clamping Voltage at IEC61000-4-2
-8kV Pulse Waveform

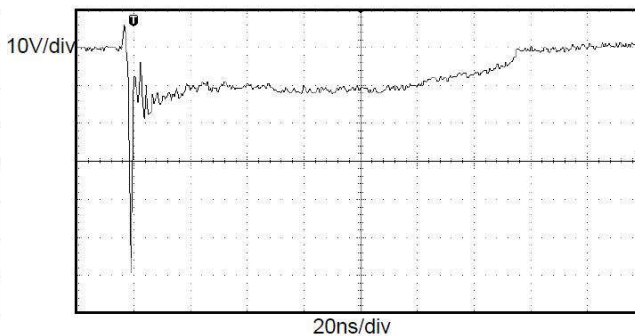
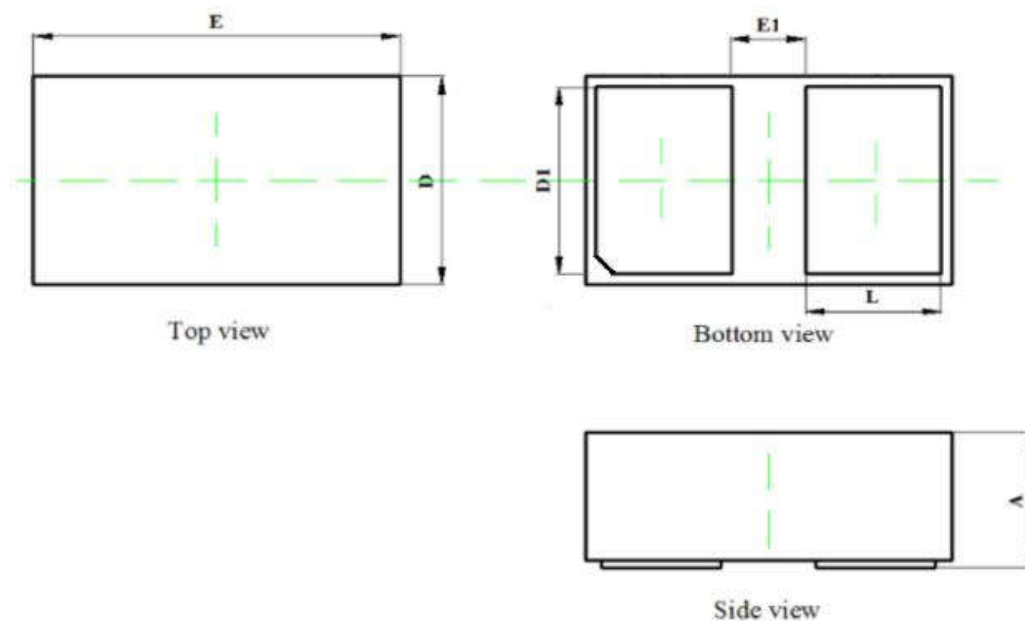
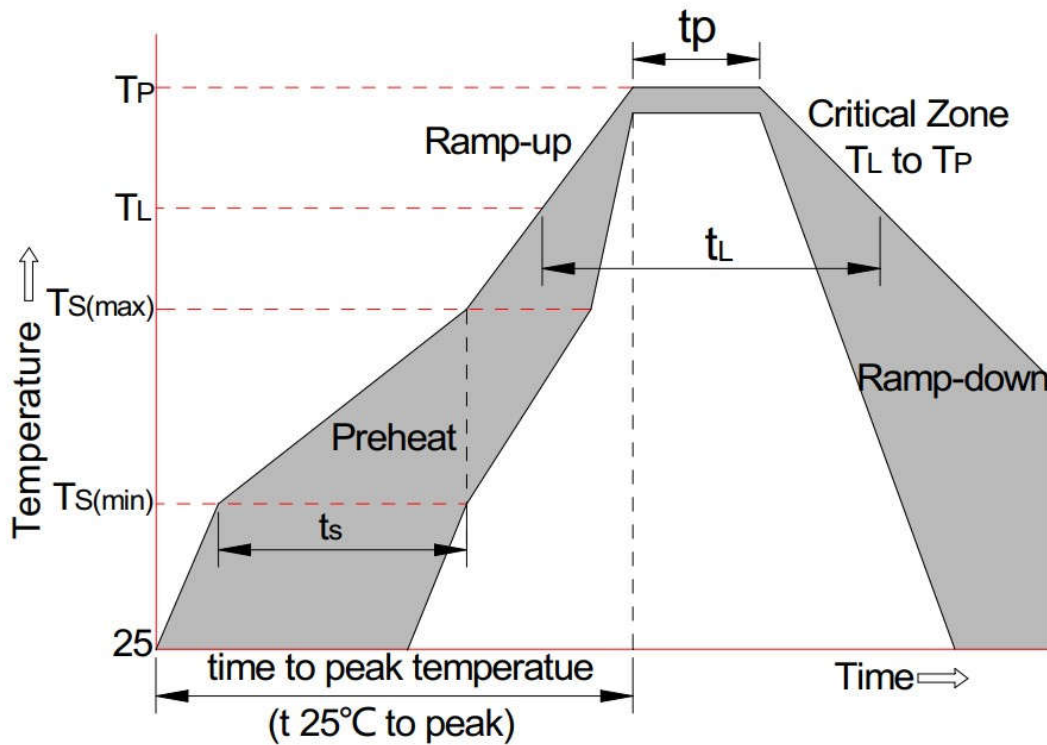


Fig.6 Clamping Voltage at IEC61000-4-2
+8kV Pulse Waveform

DFN0603 Package Outline



Symbol	Dimensions In Millimeters		
	Min	Typical	Max
A	0.28	0.30	0.32
D	0.29	0.32	0.35
E	0.59	0.62	0.65
D1	0.22	0.25	0.28
E1	0.15	0.18	0.21
L	0.16	0.19	0.22



Reflow Condition		Pb-Free Assembly
Pre-heat	-Temperature Min ($T_{S(min)}$)	+150°C
	-Temperature Max($T_{S(max)}$)	+200°C
	-Time (Min to Max) (t_s)	60-180 secs.
Average ramp up rate (Liquid us Temp (T_L) to peak)		3°C/sec. Max
$T_{S(max)}$ to T_L - Ramp-up Rate		3°C/sec. Max
Reflow	-Temperature(T_L)(Liquid us)	+217°C
	-Temperature(t_L)	60-150 secs.
Peak Temp (T_p)		+260(+0/-5)°C
Time within 5°C of actual Peak Temp (t_p)		30 secs. Max
Ramp-down Rate		6°C/sec. Max
xTime 25°C to Peak Temp (T_P)		8 min. Max
Do not exceed		+260°C