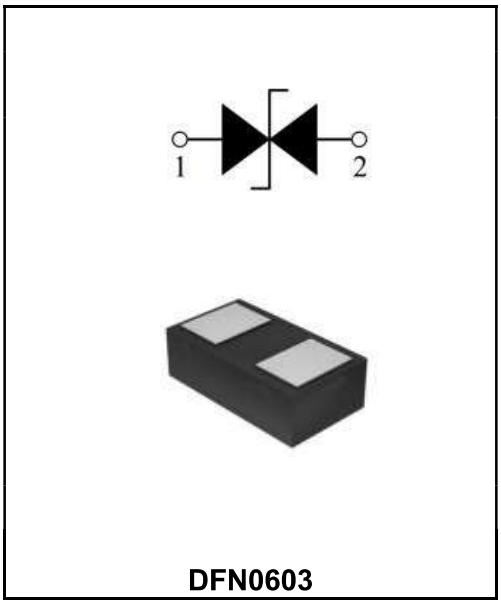
Bi-directional ESD Protection Diode

Features

- Capacitance: 0.25pF(typ.)
- Reverse Working Voltage: 3.3V
- IEC 61000-4-2 (ESD Air): ±20KV
- IEC 61000-4-2 (ESD Contact): ±20KV
- IEC 61000-4-5 (Lightning 8/20μs): 9A



DFN0603

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
ESD0603C3V3A	DFN0603	03	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	-	±20	kV
		IEC 61000-4-2; Air Discharge	-	±20	kV
P_{PP}	Peak Pulse Power	tP = 8/20 μs		54	W
I_{PPM}	Rated Peak Pulse Current	tP = 8/20 μs		9	A
T_A	Operating Temperature Range	-	-55	125	℃
Tstg	Storage Temperature Range	-	-55	150	℃

Electrical Characteristics(TA = 25 °C unless otherwise specified

Symbol	Parameter	Conditions	Min	Typ.	Max	Unit
V_{RWM}	Reverse Working Voltage	TA = 25 °C	-	-	3.3	V
V_{BR}	Breakdown Voltage	IR = 1mA; TA = 25 °C	4	-	-	V
V_h	Holding Voltage	Ih=100mA	1.2	-	-	V
I_R	Reverse Leakage Current	VRWM = 3.3V; TA = 25 °C	-	-	1	μA
V_C	Clamping Voltage	IPP=9A, tP =8/20μs	-	6	-	V
		IPP=16A, tP =10/100ns	-	6.5	-	V
R_{DYN}	Dynamtic Resistance	tP =10/100ns, IPP=8A to 16A	-	0.2	-	Ω
CJ	Junction Capacitance	VR = 1V, f = 1 MHz	-	0.25	-	pF

Typical Characteristics

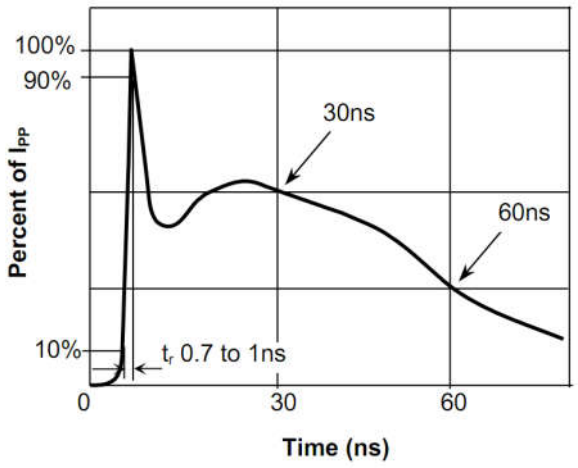


Fig.1 Pulse Waveform-ESD (IEC61000-4-2)

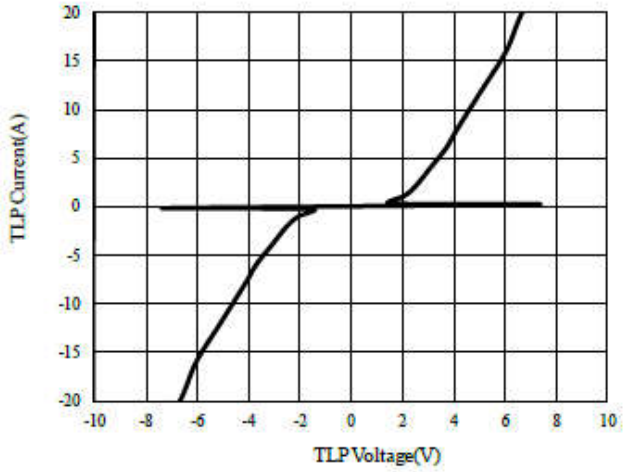


Fig.2 Transmission Line Pulse (TLP)

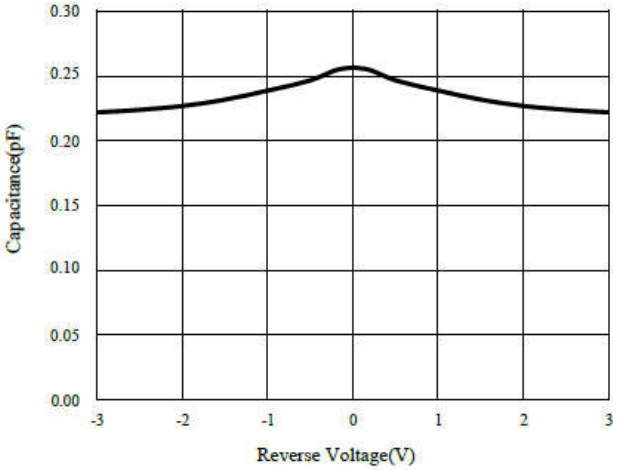


Fig.3 Capacitance VS. Voltage

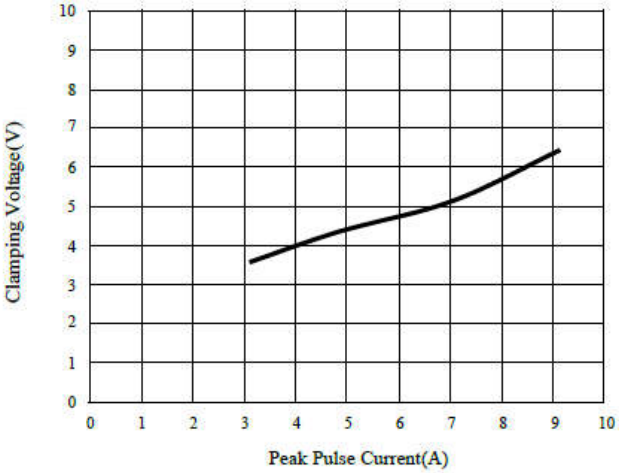


Fig.4 Clamping Voltage VS. Peak Pulse Current

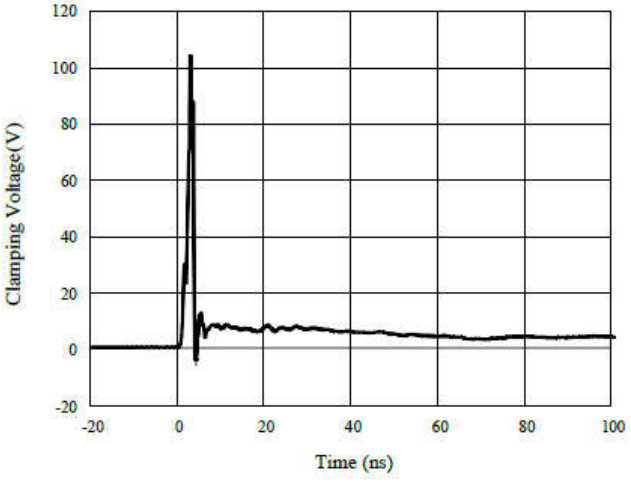


Fig.5 Clamping Voltage at IEC61000-4-2
-8kV Pulse Waveform

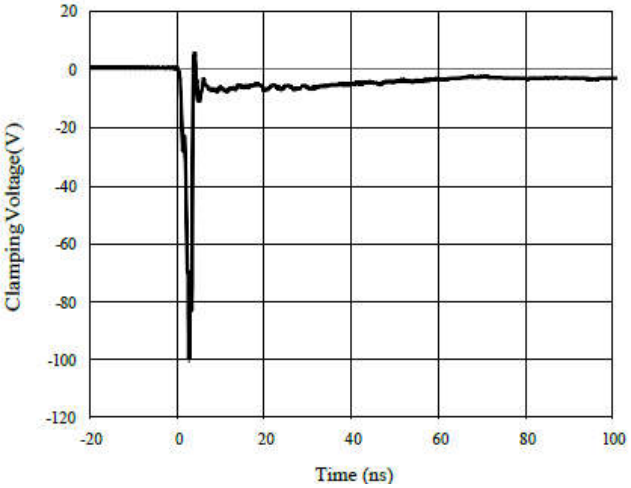
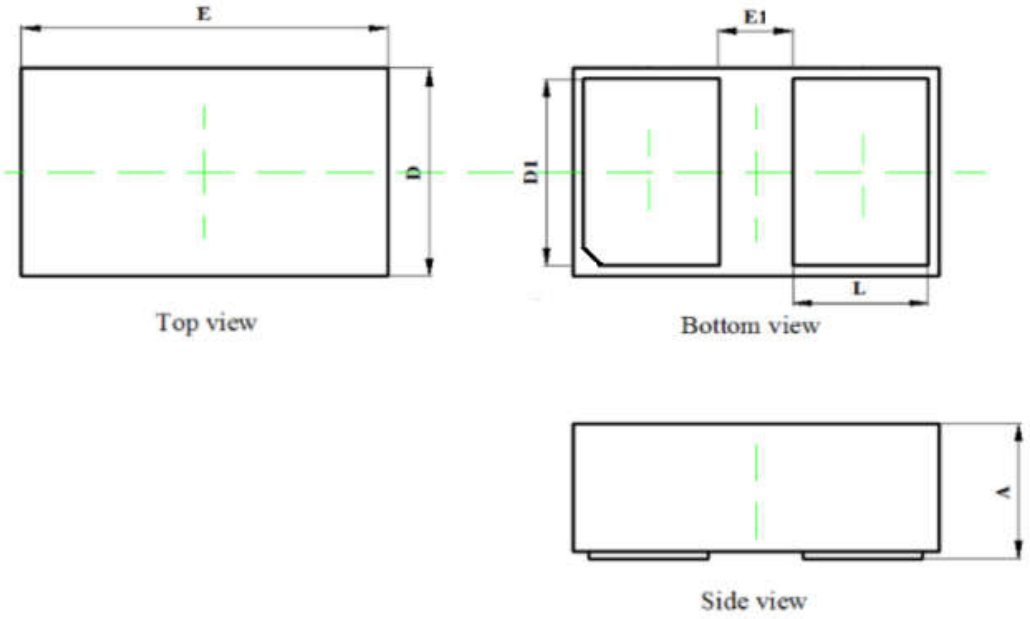


Fig.6 Clamping Voltage at IEC61000-4-2
+8kV Pulse Waveform

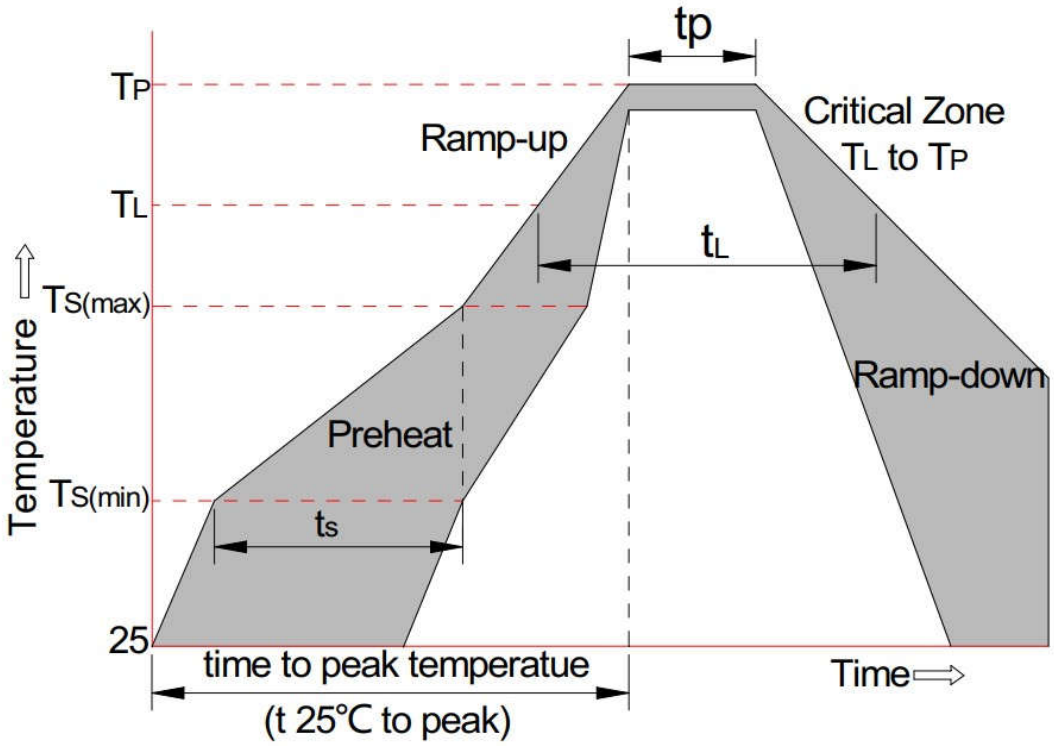
Package Dimension

DFN0603 Package Outline



Symbol	Dimensions In Millimeters		
	Min	Typical	Max
A	0.28	0.31	0.34
D	0.29	0.32	0.35
E	0.59	0.62	0.65
D1	0.23	0.26	0.29
E1	0.15	0.18	0.21
L	0.16	0.19	0.22

Soldering Parameters



Reflow Condition		Pb-Free Assembly
Pre-heat	-Temperature Min (Ts(min))	+150°C
	-Temperature Max(Ts(max))	+200°C
	-Time (Min to Max) (ts)	60-180 secs.
Average ramp up rate (Liquid us Temp (TL) to peak)		3°C/sec. Max
Ts(max) to TL - Ramp-up Rate		3°C/sec. Max
Reflow	-Temperature(TL)(Liquid us)	+217°C
	-Temperature(tL)	60-150 secs.
Peak Temp (Tp)		+260(+0/-5)°C
Time within 5°C of actual Peak Temp (tp)		30 secs. Max
Ramp-down Rate		6°C/sec. Max
xTime 25°C to Peak Temp (TP)		8 min. Max
Do not exceed		+260°C