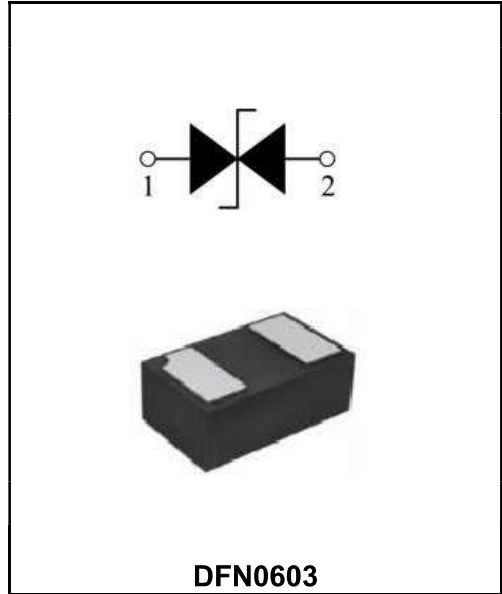


**Bi-directional ESD Protection Diode**

**Features**

- ◆Capacitance: 10pF(typ.)
- ◆Reverse Working Voltage: 3.3V
- ◆IEC 61000-4-2 (ESD Air): ±30KV
- ◆IEC 61000-4-2 (ESD Contact): ±30KV
- ◆IEC 61000-4-5 (Lightning 8/20μs): 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
ESD0603B3V3B	DFN0603	C3	0.60X0.30X0.30	7" T&R	15000PCS/Tape

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

Symbol	Parameter	Conditions	Min	Max	Unit
V <sub>ESD</sub>	Electrostatic Discharge Voltage	IEC 61000-4-2; Contact Discharge	-	±30	kV
		IEC 61000-4-2; Air Discharge	-	±30	kV
P <sub>PP</sub>	Peak Pulse Power	tP = 8/20 μs		60	W
I <sub>PPM</sub>	Rated Peak Pulse Current	tP = 8/20 μs		7	A
T <sub>A</sub>	Operating Temperature Range	-	-55	125	°C
T <sub>stg</sub>	Storage Temperature Range	-	-55	150	°C

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

Symbol	Parameter	Conditions	Min	Typ.	Max	Unit
V <sub>RWM</sub>	Reverse Working Voltage	TA = 25 °C	-	-	3.3	V
V <sub>BR</sub>	Breakdown Voltage	I <sub>R</sub> = 1mA	3.7	-	-	V
I <sub>R</sub>	Reverse Leakage Current	V <sub>RWM</sub> = 3.3V	-	-	0.1	μA
V <sub>C</sub>	Clamping Voltage	I <sub>PP</sub> =1A, tP =8/20μs	-	5.5	7.0	V
		I <sub>PP</sub> =7A, tP =8/20μs	-	8.5	10	V
C <sub>J</sub>	Line Capacitance	V <sub>R</sub> = 0V, f = 1 MHz	-	10	15	pF

Typical Characteristics

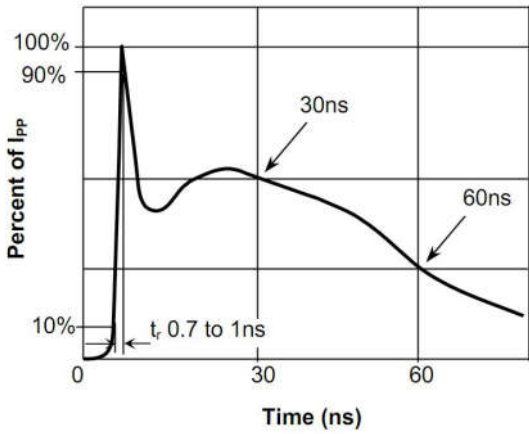


Fig.1 Pulse Waveform-ESD (IEC61000-4-2)

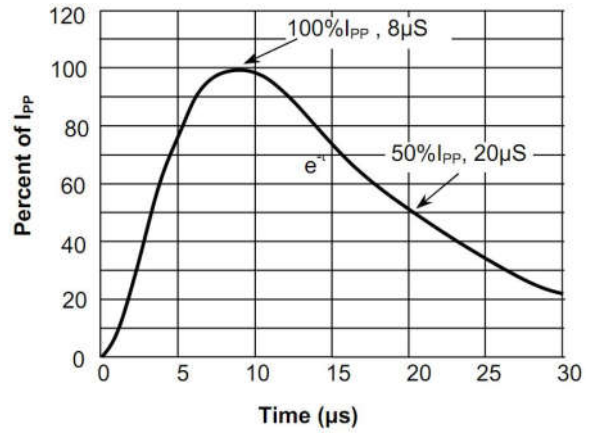


Fig.2 Pulse Waveform-8/20µs

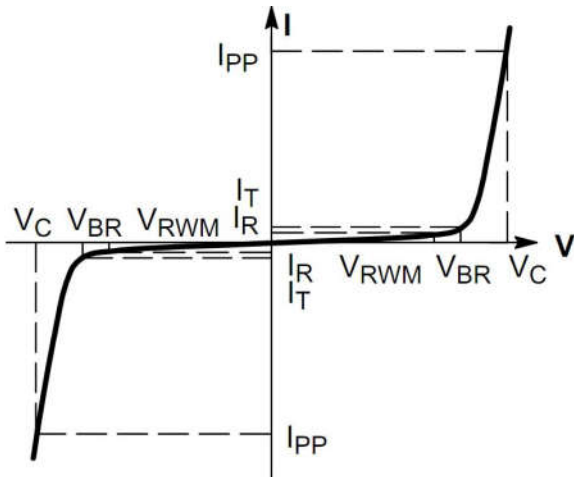


Fig.3 V-I Characteristics for Bidirectional Diode

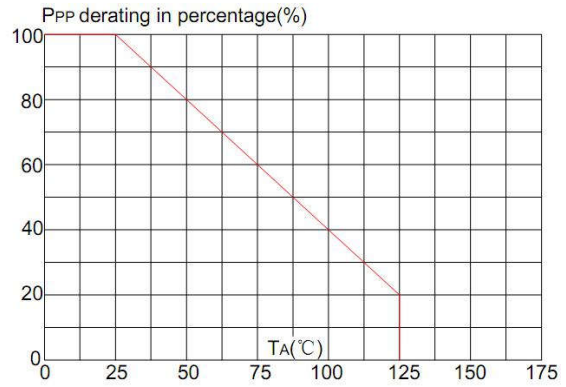
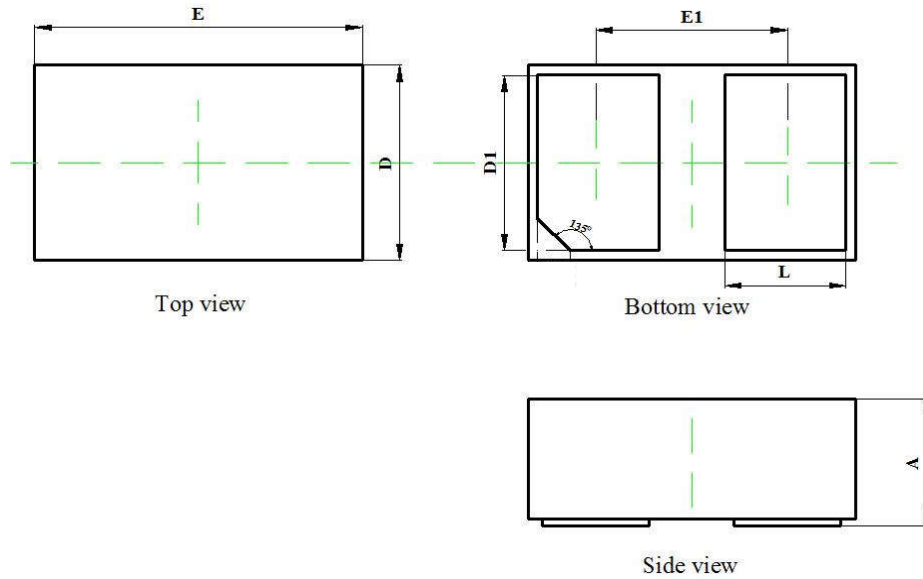
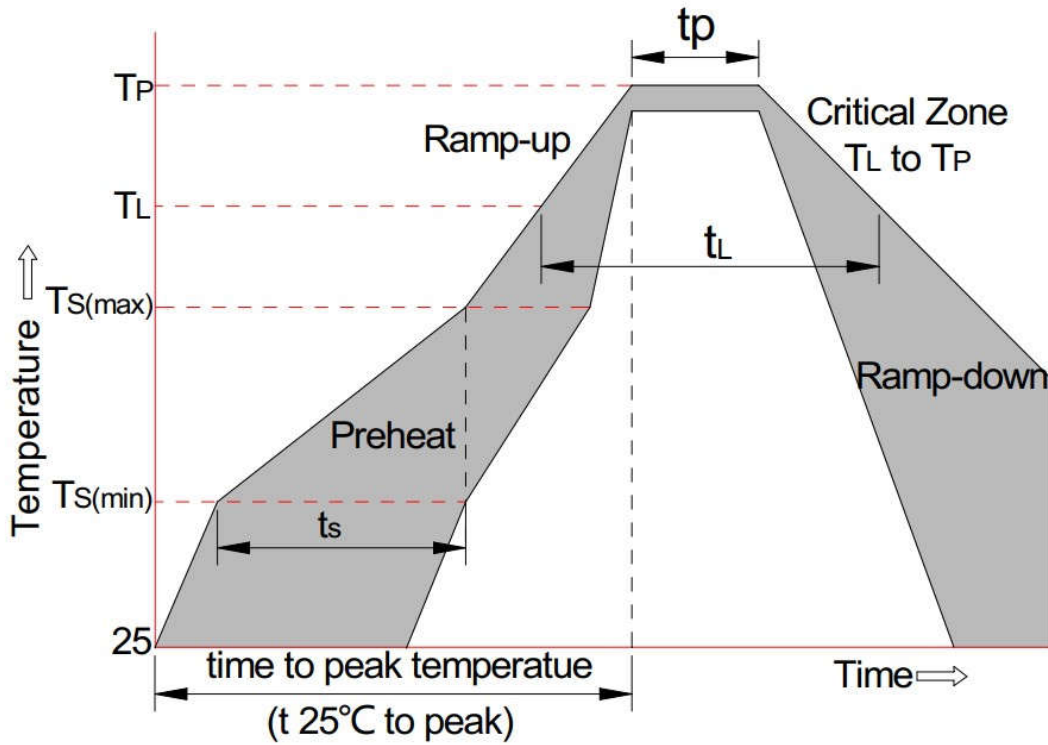


Fig.4 Power Derating Curve

DFN0603 Package Outline (Sizes in mm)



Symbol	Dimensions In Millimeters	
	Min	Max
<b>A</b>	0.230	0.330
<b>D</b>	0.250	0.350
<b>E</b>	0.550	0.650
<b>D1</b>	0.200	0.300
<b>E1</b>	0.350	
<b>L</b>	0.140	0.240



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