

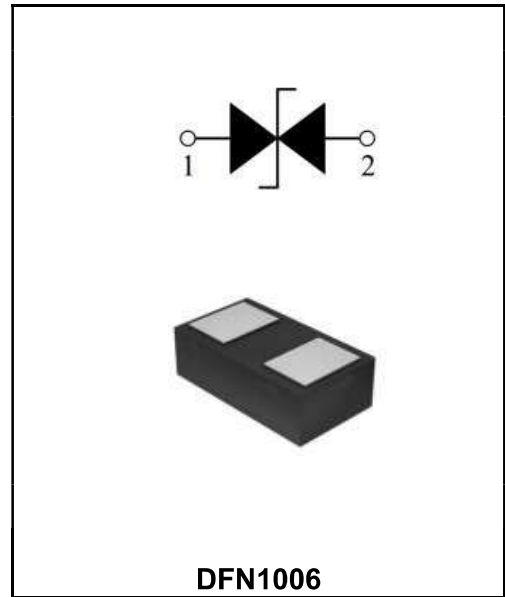
**Bi-directional ESD Protection Diode**

**Features**

- ◆Capacitance: 80pF(typ.)
- ◆Reverse Working Voltage: 4.5V
- ◆IEC 61000-4-2(ESD Air): ± 30KV
- ◆IEC 61000-4-2(ESD Contact): ± 30kV
- ◆IEC61000-4-5(Lightning 8/20us): 35A

**Application**

- ◆Cellular phones
- ◆Portable devices
- ◆Digital cameras
- ◆Power supplies



**Order Information**

Part Number	Package	Marking	Size (mm)	Delivery Form	Delivery Quantity
ESD1006B4V5	DFN1006	45	1.00x0.60x0.37	7" T&R	10000PCS/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	-	315	W
I <sub>PPM</sub>	Rated Peak Pulse Current	tP = 8/20 μs	-	35	A
T <sub>A</sub>	Operating Temperature Range	-	-55	150	°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	-	-	4.5	V
V <sub>BR</sub>	Breakdown Voltage	I <sub>R</sub> = 1mA; TA = 25 °C	5.0	-	6.5	V
I <sub>R</sub>	Reverse Leakage Current	V <sub>RWM</sub> = 4.5 V; TA = 25 °C	-	-	1	uA
V <sub>C</sub>	Clamping Voltage	I <sub>PP</sub> =10A, tP =8/20μs	-	-	6	V
		I <sub>PP</sub> =35A, tP =8/20μs	-	-	9	V
C <sub>J</sub>	Junction Capacitance	V <sub>R</sub> = 0V, f = 1 MHz	-	-	80	pF

Typical Characteristics

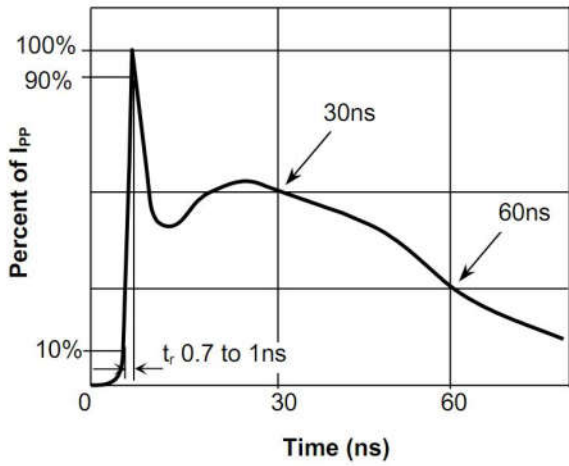


Fig.1 Pulse Waveform-ESD (IEC61000-4-2)

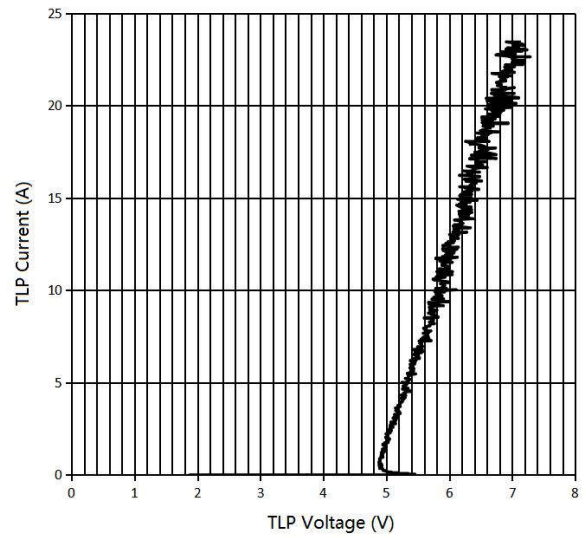


Fig.2 Transmission Line Pulse (TLP)

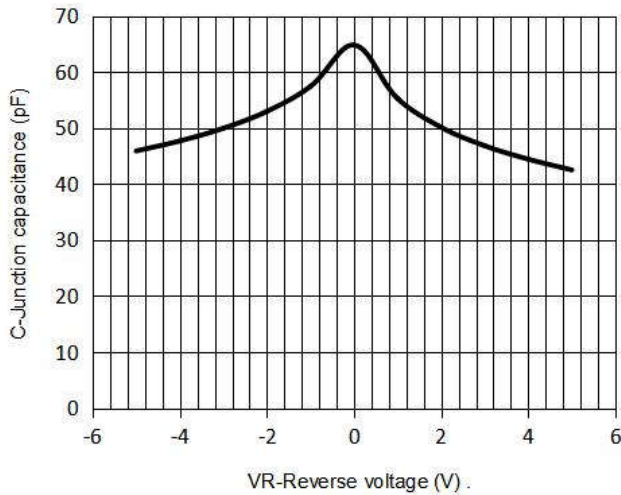


Fig.3 Capacitance vs. Revers Voltage

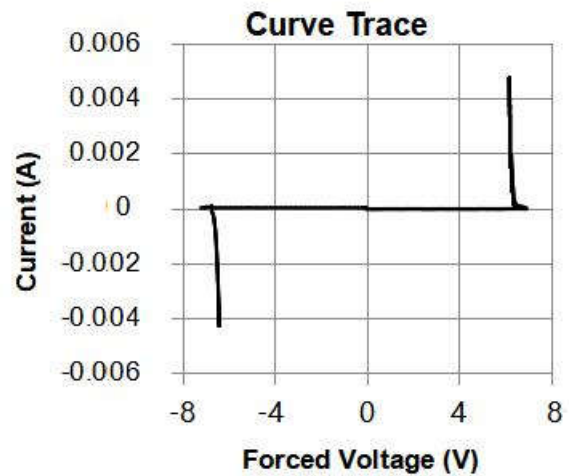
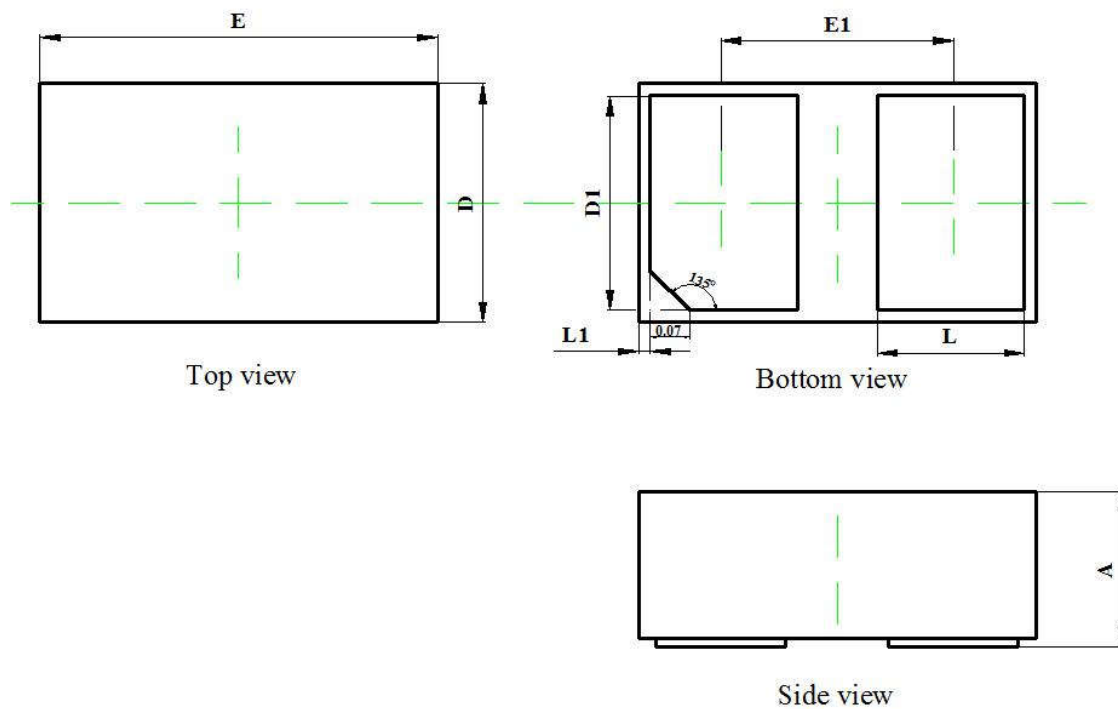
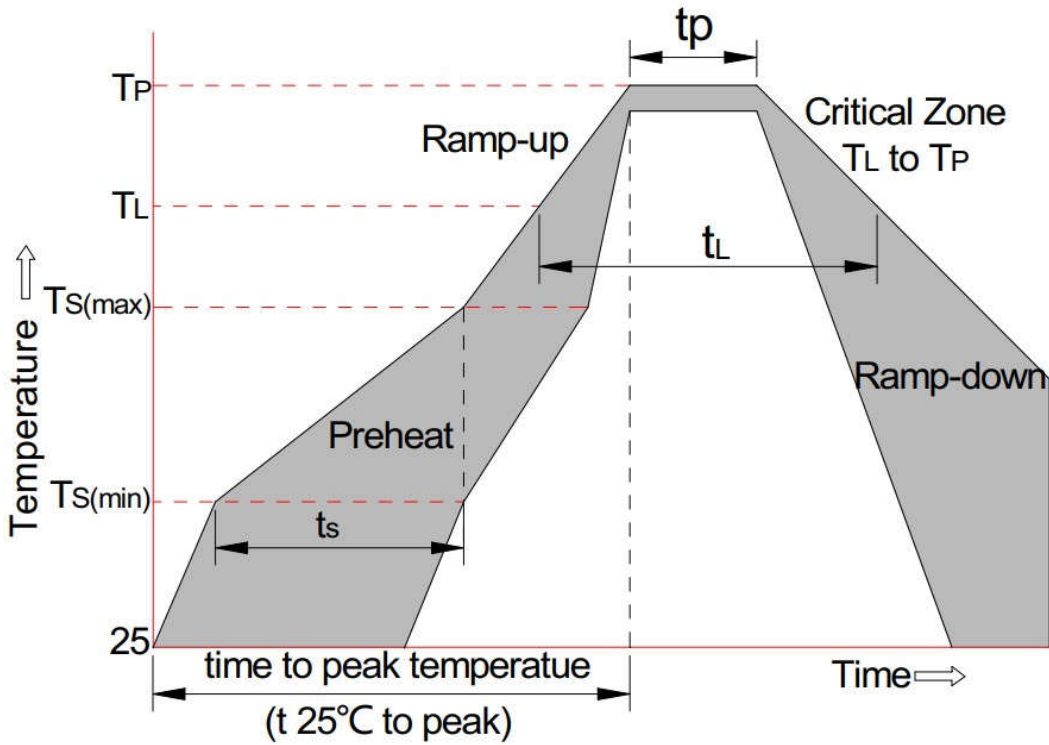


Fig.4 IV Curve ( Forward Voltage )

DFN1006 Package Outline



Symbol	Dimensions In Millimeters		Dimensions In Inches	
	Min	Max	Min	Max
A	0.350	0.450	0.014	0.018
D	0.550	0.650	0.022	0.026
E	0.950	1.050	0.037	0.041
D1	0.420	0.520	0.017	0.020
E1	0.550	0.650	0.022	0.026
L	0.270	0.370	0.011	0.015
L1	0.000	0.100	0.000	0.004



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