

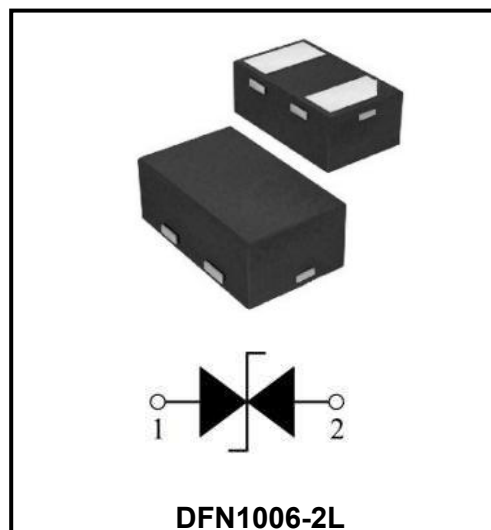
Bi-directional ESD Protection Diode

Features

- ◆Low Capacitance: 8pF(typ.)
- ◆Reverse Working Voltage: 12V
- ◆IEC 61000-4-2 (ESD Air): ±30KV
- ◆IEC 61000-4-2 (ESD Contact): ±30KV
- ◆IEC 61000-4-5 (Lightning 8/20μs): 8A

Applications

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



DFN1006-2L

Marking Code

ESD1006B12A

AF

Limiting Values($T_A = 25\text{ }^{\circ}\text{C}$, unless otherwise specified)

Parameter		Symbol	Limit	Unit
Electrostatic Discharge Voltage	IEC 61000-4-2; Contact Discharge	V_{ESD}	±30	kV
	IEC 61000-4-2; Air Discharge		±30	kV
Peak Pulse Power	$t_P = 8/20\text{ }\mu\text{s}$	P_{PP}	150	W
Peak Pulse Current	$t_P = 8/20\text{ }\mu\text{s}$	I_{PPM}	8.0	A
Ambient Temperature Range		T_A	-55 ~ +125	$^{\circ}\text{C}$
Storage Temperature Range		T_{stg}	-55 ~ +150	$^{\circ}\text{C}$

ELECTRICAL CHARACTERISTICS ($T_A=25^{\circ}\text{C}$) unless otherwise noted)

Parameter	Symbol	Test conditions	Min	Typ	Max	Unit
Reverse Working Voltage	V_{RWM}	$T_A = 25\text{ }^{\circ}\text{C}$	-	-	12	V
Breakdown Voltage	$V_{(BR)}$	$I_R = 1\text{ mA}; T_A = 25\text{ }^{\circ}\text{C}$	14	14.5	15	V
Reverse leakage current	I_R	$V_{RWM} = 12\text{ V}; T_A = 25\text{ }^{\circ}\text{C}$	-	-	0.1	μA
Clamping Voltage	V_C	$I_{PP}=8.0\text{ A}, t_P=8/20\mu\text{s}$	-	-	19	V
Junction capacitance	C_J	$V_R = 0\text{ V}, f = 1\text{ MHz}$	-	8.0	8.5	pF

Typical Characteristics

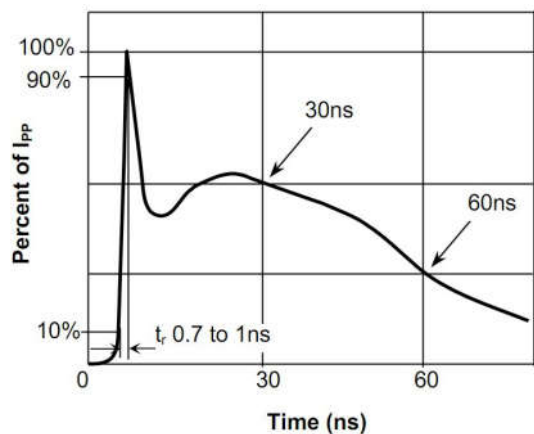


Fig.1 Pulse Waveform-ESD (IEC61000-4-2)

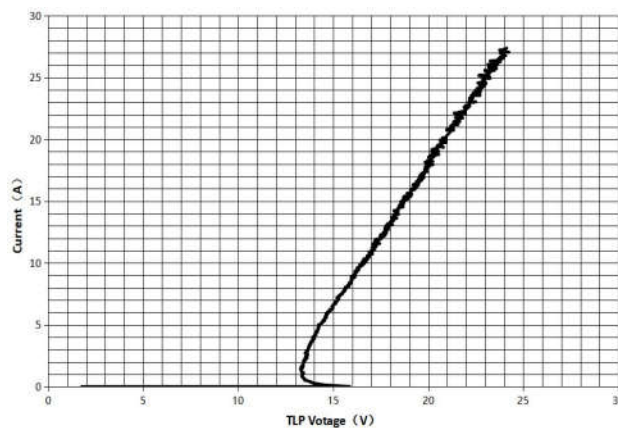


Fig.2 Transmission Line Pulse (TLP)

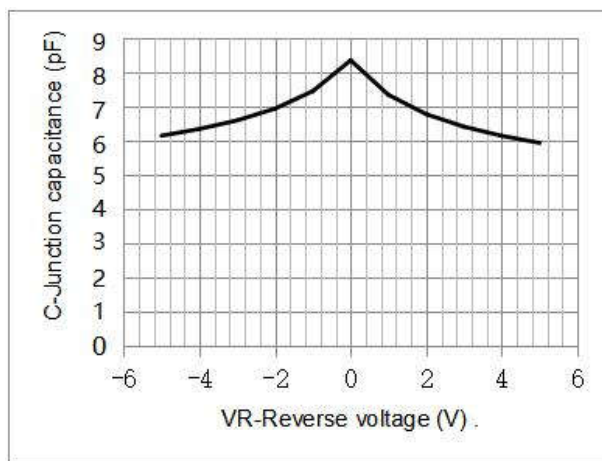


Fig.3 Capacitance vs. Reverse Voltage

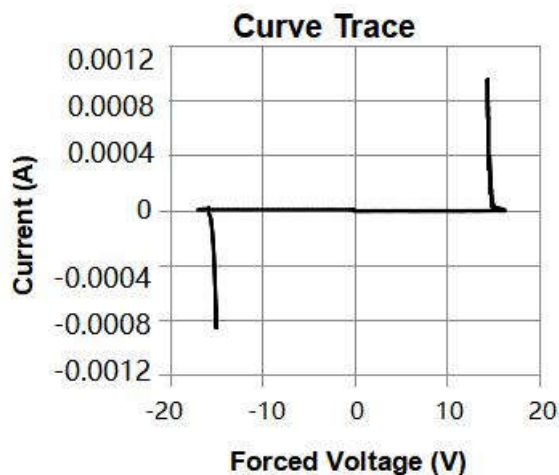


Fig.4 IV Curve (Forward Voltage)

Ordering information

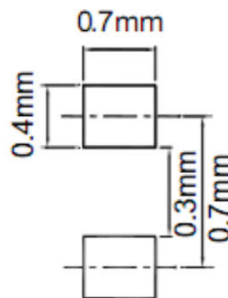
Package	Packing Description	Packing Quantity
DFN1006-2L	Tape/Reel, 7" reel	10000PCS/Reel 400000PCS/Carton

Package Dimensions

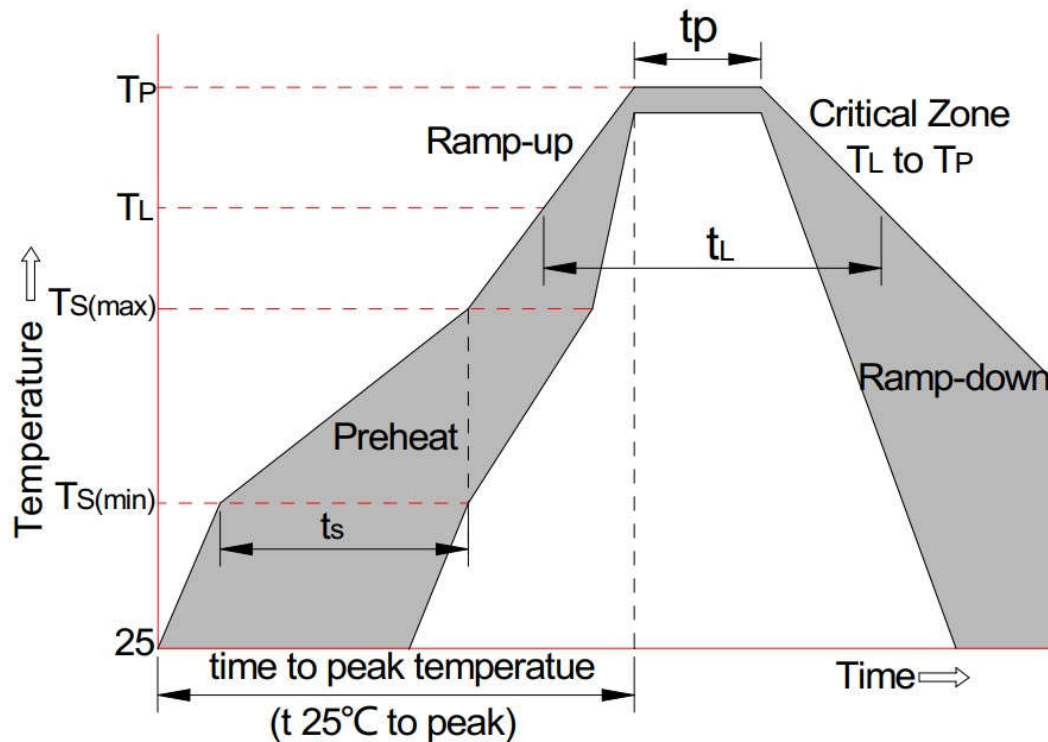
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Dim.	Millimeter(mm)		Inches	
	Min.	Max.	Min.	Max.
A	0.350	0.450	0.014	0.018
D	0.550	0.650	0.022	0.026
E	0.950	1.050	0.037	0.041
D1	0.420	0.520	0.017	0.020
E1	0.550	0.650	0.022	0.026
L	0.270	0.370	0.011	0.015
L1	-	0.100	-	0.004

The recommended mounting pad size



Soldering Parameters



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

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