

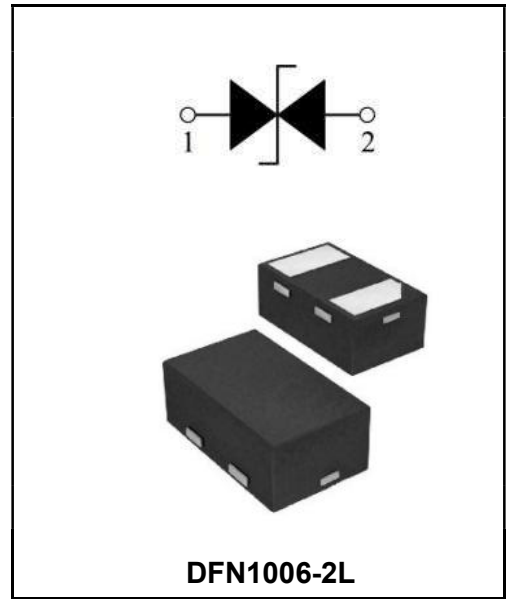
**Uni-directional ESD Protection Diode**

**Features**

- ◆Capacitance:60pF(typ.)
- ◆Reverse Working Voltage: 24 V
- ◆IEC 61000-4-2(ESD Air): ± 30kV
- ◆IEC 61000-4-2(ESD Contact): ± 30kV
- ◆IEC61000-4-5(Lightning 8/20us): 9 A

**Application**

- ◆USB Type-C CC and SBU protection
- ◆USB VBUS protection
- ◆Power supply protection
- ◆Hand-held portable applications
- ◆Low speed data or control line protection
- ◆Consumer electronics
- ◆Peripherals



<b>Marking Code</b>	
ESD1006D24	24

**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	-	380	W
I <sub>PPM</sub>	Rated Peak Pulse Current	tP = 8/20 μs	-	9	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	-	-	24	V
V <sub>BR</sub>	Breakdown Voltage	IR = 1mA; TA = 25 °C	25.5	-	31.5	V
I <sub>R</sub>	Reverse Leakage Current	VRWM = 24 V; TA = 25 °C	-	-	0.1	uA
V <sub>C</sub>	Clamping Voltage	IPP=5 A, tP =8/20μs	-	-	33	V
		IPP=9 A, tP =8/20μs	-	-	38	V
C <sub>J</sub>	Junction Capacitance	VR = 0V, f = 1 MHz	-	52	60	pF

Typical Characteristics

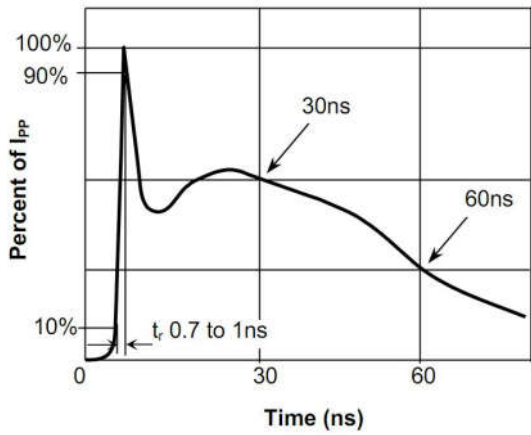


Fig.1 Pulse Waveform-ESD (IEC61000-4-2)

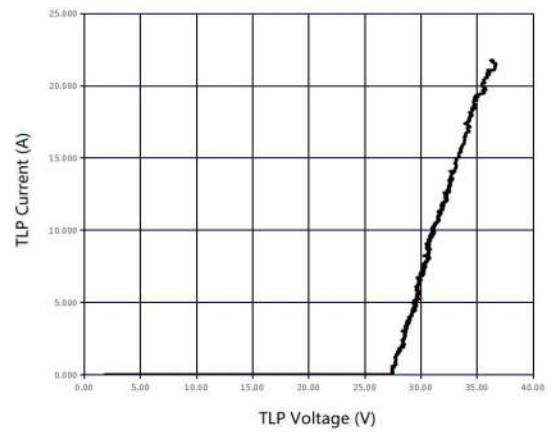


Fig.2 Transmission Line Pulse (TLP)

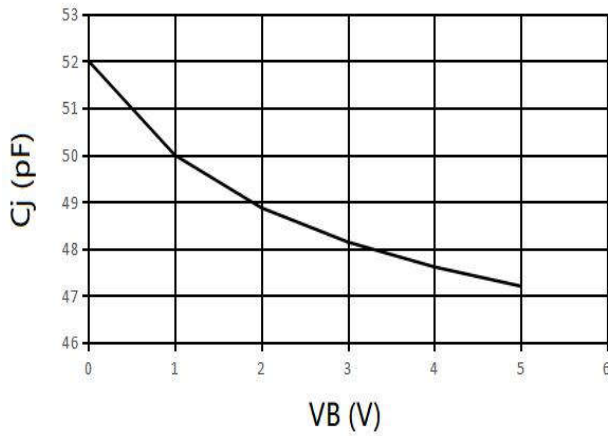


Fig.3 Capacitance vs. Revers Voltage

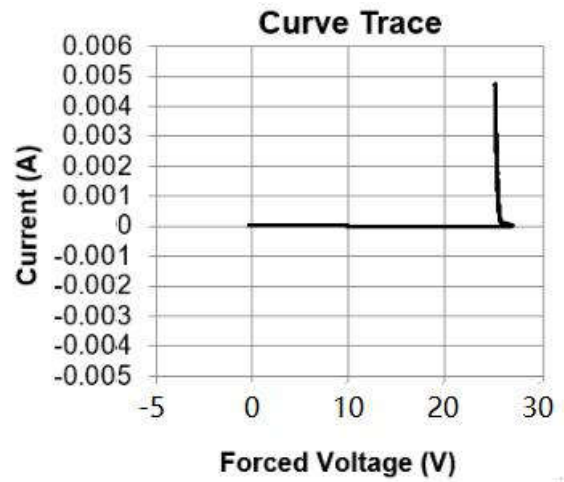
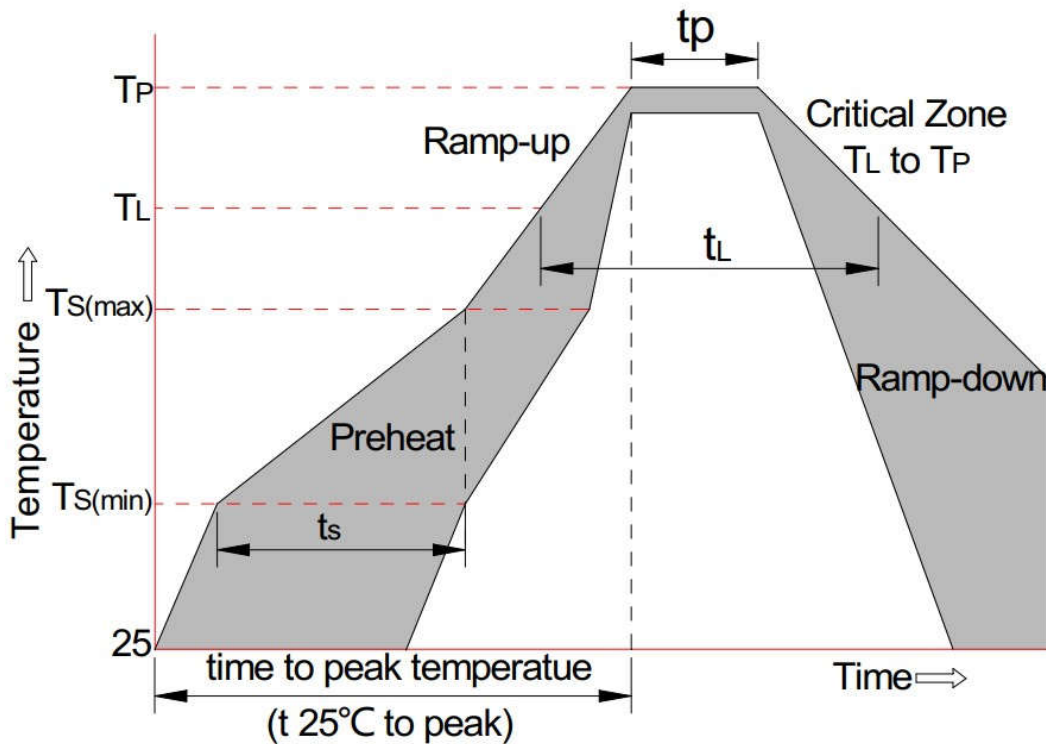


Fig.4 IV Curve ( Forward Voltage )

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 (TP)		8 min. Max
Do not exceed		+260°C

**Ordering information**

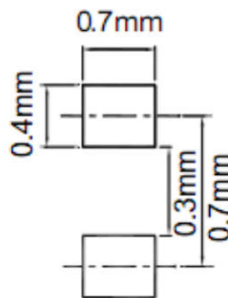
Package	Packing Description	Packing Quantity
DFN1006-2L	Tape/Reel,7"reel	10000PCS/Reel 400000PCS/Carton

**Package Dimensions**

**DFN1006-2L**

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**



## Disclaimer

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