

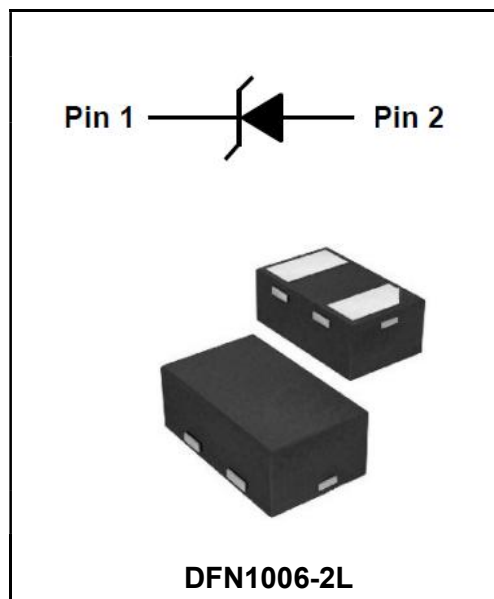
Uni-directional ESD Protection Diode

Features

- ◆Capacitance:60pF(typ.)
- ◆Reverse Working Voltage: 24 V
- ◆IEC 61000-4-2(ESD Air): $\pm 30\text{kV}$
- ◆IEC 61000-4-2(ESD Contact): $\pm 30\text{kV}$
- ◆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



Marking Code

ESD1006D24

24

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	-	± 30	kV
		IEC 61000-4-2; Air Discharge	-	± 30	kV
P _{PP}	Peak Pulse Power	tP = 8/20 μs	-	380	W
I _{PPM}	Rated Peak Pulse Current	tP = 8/20 μs	-	9	A
T _A	Operating Temperature Range	-	-55	125	°C
T _{stg}	Storage Temperature Range	-	-55	150	°C

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

Symbol	Parameter	Conditions	Min	Typ.	Max	Unit
V _{RWM}	Reverse Working Voltage	TA = 25 °C	-	-	24	V
V _{BR}	Breakdown Voltage	IR = 1mA; TA = 25 °C	25.5	-	31.5	V
I _R	Reverse Leakage Current	VRWM = 24 V; TA = 25 °C	-	-	0.1	μA
V _C	Clamping Voltage	IPP=5 A, tP =8/20 μs	-	-	33	V
		IPP=9 A, tP =8/20 μs	-	-	38	V
CJ	Junction Capacitance	VR = 0V, f = 1 MHz	-	52	60	pF

Typical Characteristics

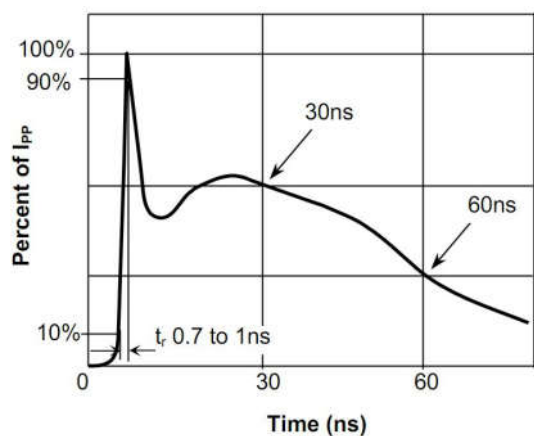


Fig.1 Pulse Waveform-ESD (IEC61000-4-2)

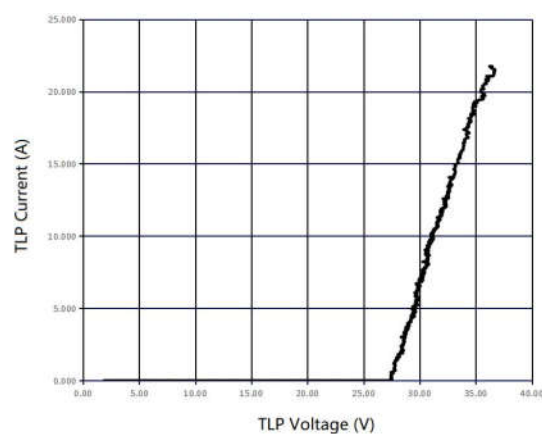


Fig.2 Transmission Line Pulse (TLP)

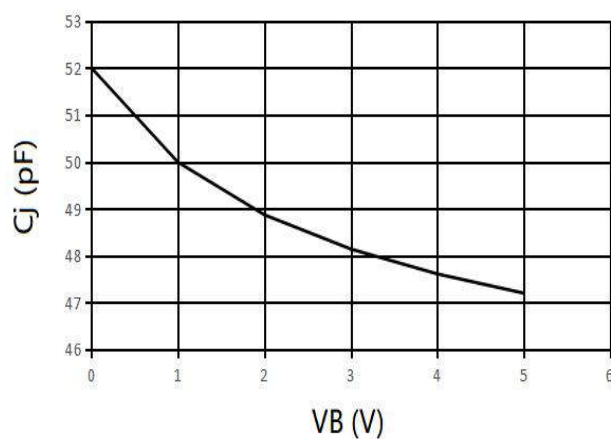


Fig.3 Capacitance vs. Reverse Voltage

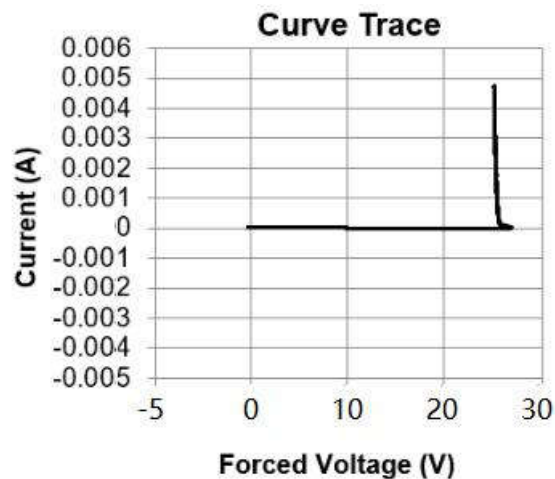
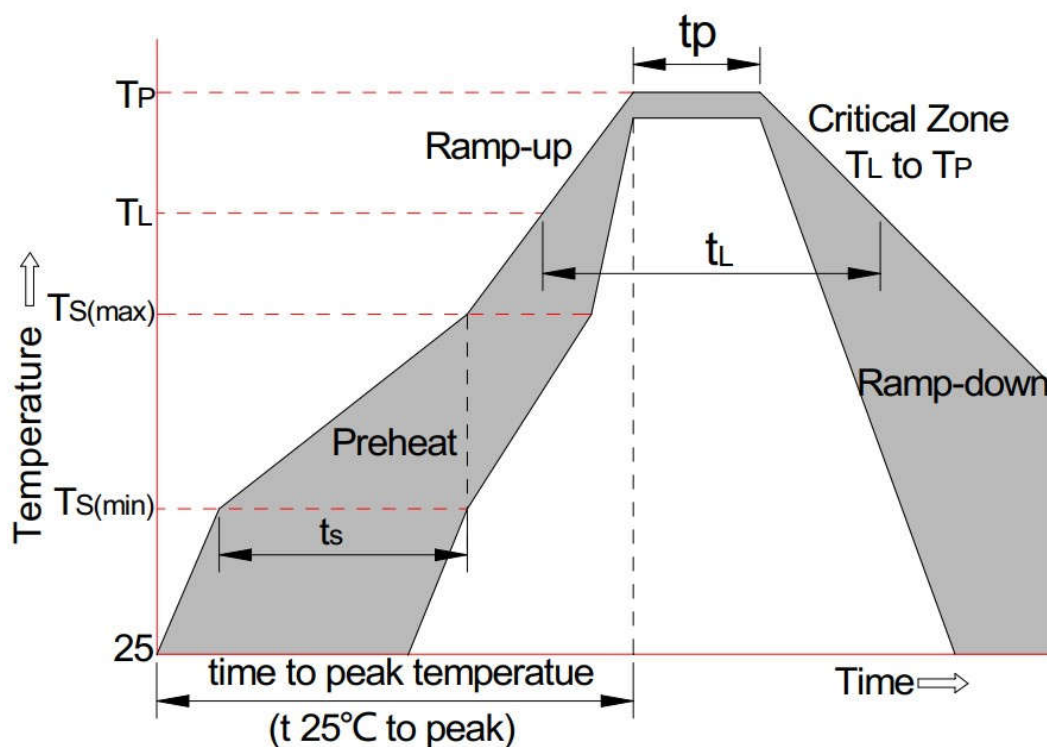


Fig.4 IV Curve (Forward Voltage)

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

Ordering information

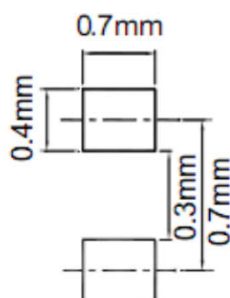
Package	Packing Description	Packing Quantity
DFN1006-2L	Tape/Reel, 7" reel	10000PCS/Reel 400000PCS/Carton

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



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