H5VL10B

Bi-directional 5V Low Capacitance ESD

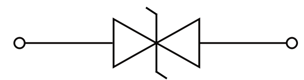
Features

- Low capacitance: 15pF(Typ.)
- Reverse Working Voltage: 5V
- Bi-directional protection
- DFN0603 surface mount package
- IEC 61000-4-2 (ESD Air): ±25kV
- IEC 61000-4-2 (ESD Contact): ±25kV
- IEC 61000-4-5 (Lightning 8/20μs): 5A

DFN1006

Applications

- Smart Phone and Tablet PC
- TV and Set Top Box
- Wearable Devices
- Digital cameras
- PADs

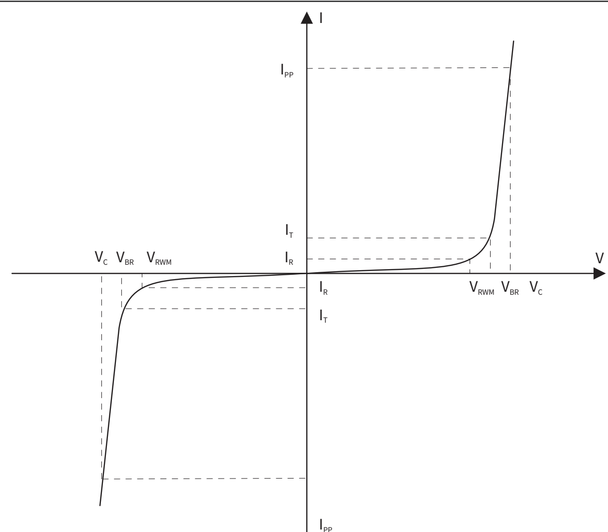


Maximum Ratings (Ta=25°C Unless otherwise specified)

SYMBOL	PARAMETER	CONDITIONS	VALUE	UNIT
V_{ESD}	Electrostatic Discharge Voltage	ESD per IEC 61000-4-2(Air)	±25	KV
		ESD per IEC 61000-4-2(Contact)	±25	KV
P_{PP}	Peak Pulse Power	tp = 8/20 μs	50	W
I_{PP}	Rated Peak Pulse Current	tp = 8/20 μs	5.0	A
T_J	Operating JunctionTemperature Range	—	-55 to +125	°C
T_{stg}	Storage Temperature Range	—	-55 to +150	°C

Electrical Parameter

SYMBOL	PARAMETER
V_C	Clamping Voltage @ I_{PP}
V_{BR}	Breakdown Voltage @ I_T
I_{PP}	Peak Pulse Current
I_T	Test Current
I_R	Reverse Leakage Current @ V_{RWM}
V_{RWM}	Peak Reverse Working Voltage
P_{PP}	Peak Pulse Power Dissipation
C_J	Junction Capacitance @ V_R=0V,f=1MHz



Electrical Characteristics (Ta=25°C Unless otherwise specified)

PARAMETER	SYMBOL	CONDITION	MIN.	TYP.	MAX.	UNIT
Peak Reverse Working Voltage	V_{RWM}	T_A=25°C	—	—	5.0	V
Breakdown Voltage	V_{BR}	I_T=1mA;T_A=25°C	5.6	6.5	8.0	V
Reverse Leakage Current	I_R	V_{RWM}=5.0V;T_A=25°C	—	—	0.1	μA
Clamping Voltage	V_C	I_{PP}=1.0A, t_p=8/20μs	—	—	8.0	V
		I_{PP}=5.0A,t_p=8/20μs	—	—	10.0	V
Junction Capacitance	C_J	V_R=0V,f=1MHz	—	15	18	pF

Ordering Information

PREFERED P/N	PACKAGE	SIZE(mm)	DELIVERY MODE	MPQ(PCS)
H5VL10B	DFN1006	1.00×0.60×0.37	7'' REEL	10,000

Ratings And Characteristics Curves (Ta=25°C Unless otherwise specified)

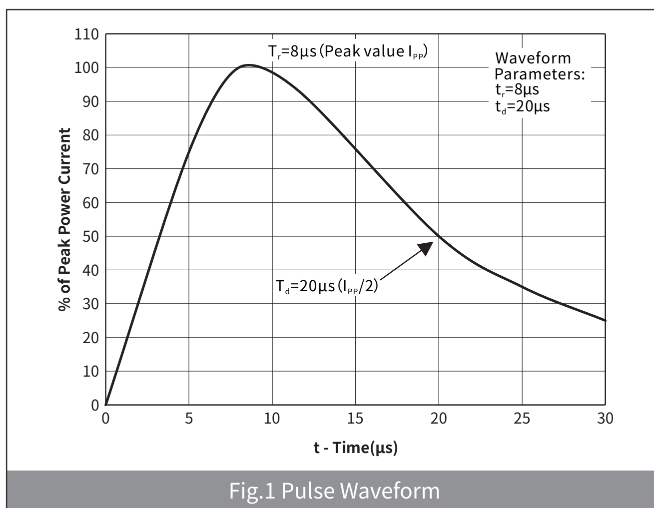


Fig.1 Pulse Waveform

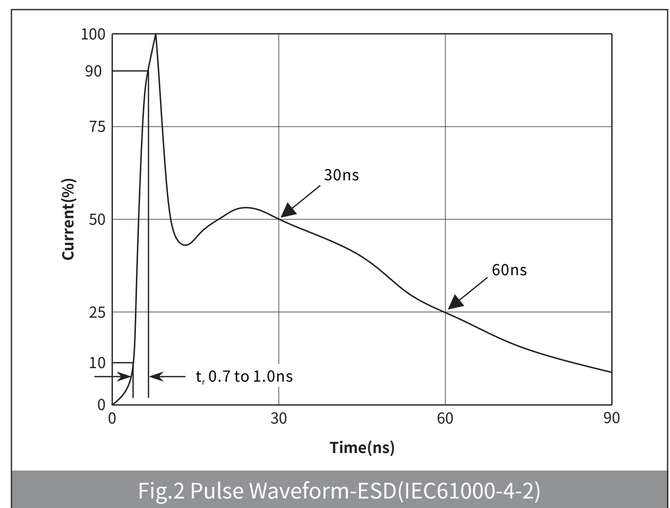


Fig.2 Pulse Waveform-ESD(IEC61000-4-2)

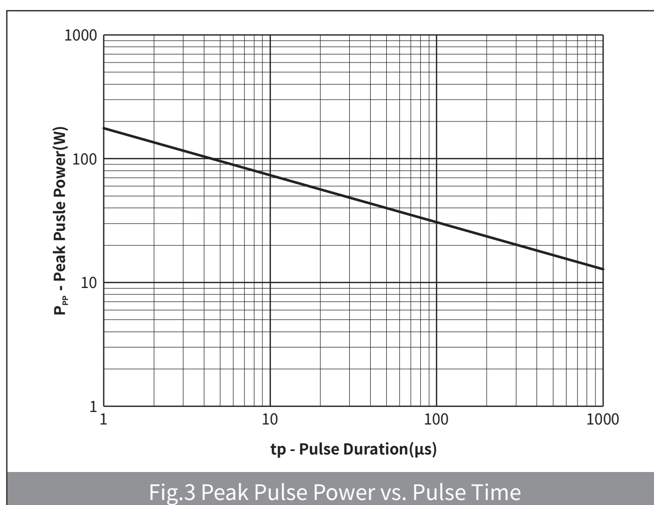


Fig.3 Peak Pulse Power vs. Pulse Time

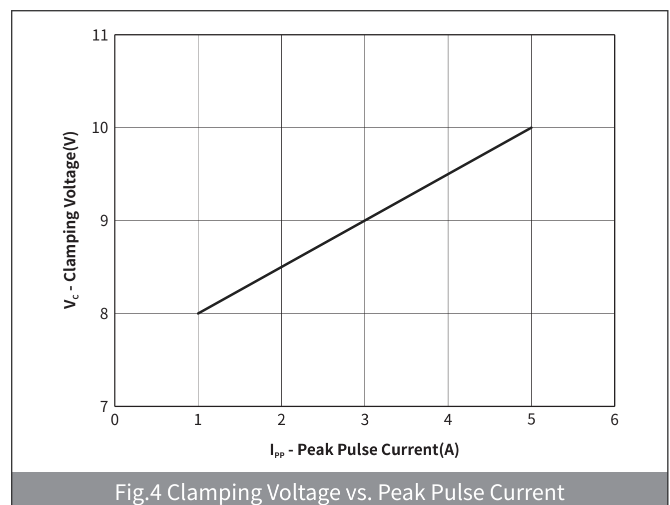
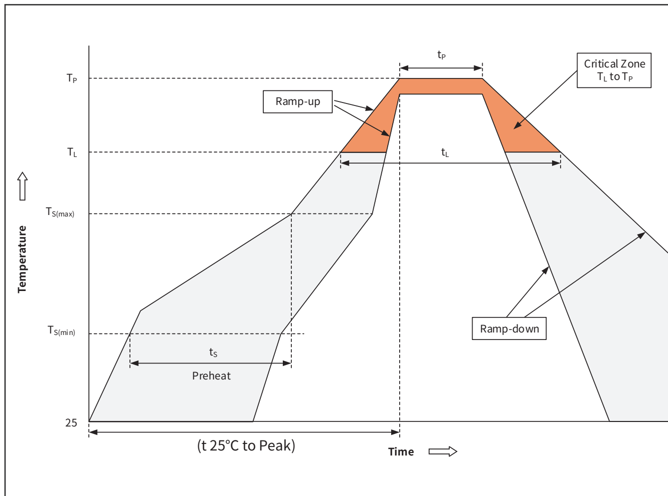


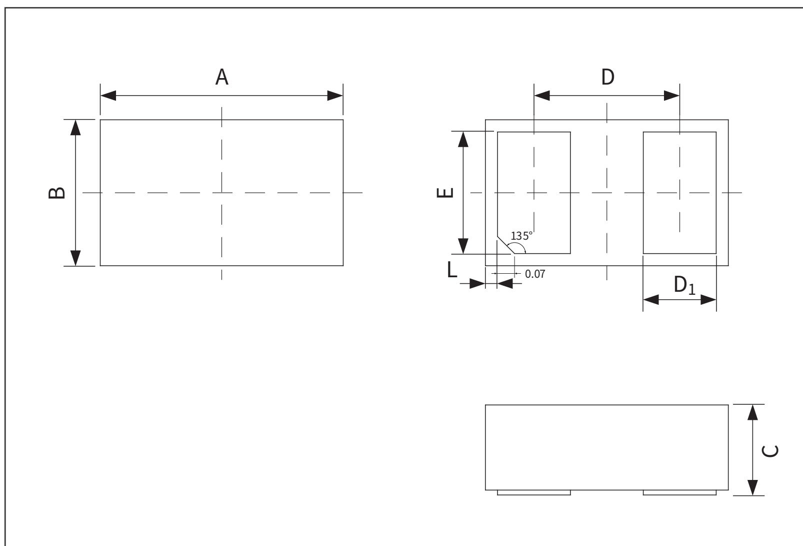
Fig.4 Clamping Voltage vs. Peak Pulse Current

Recommended Soldering Conditions



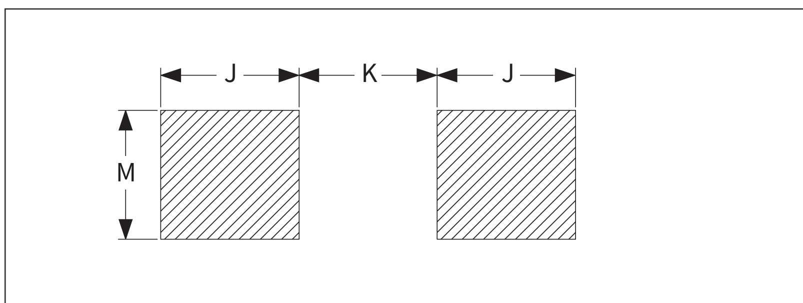
Profile Feature		Pb-Free Assembly
Pre-heat	Temperature Min ($T_{S(min)}$)	+150°C
	Temperature Max($T_{S(max)}$)	+200°C
	Time (Min to Max) (t_S)	60-180 secs.
Average ramp up rate (Liquid us Temp (T_L) to peak)		3°C /sec. Max
$T_{S(max)}$ to T_L - Ramp-up Rate		3°C /sec. Max
Reflow	Temperature(T_L)(Liquid 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
Time 25°C to Peak Temp (T_P)		8 min. Max
Do not exceed		+260°C

Package Outline Dimensions (DFN1006)



Symbol	Millimeters(mm)			
	Min.	Max.	Min.	Max.
A	0.950	1.050	0.037	0.041
B	0.550	0.650	0.022	0.026
C	0.350	0.450	0.014	0.018
D	0.550	0.650	0.022	0.026
D_1	0.280	0.380	0.011	0.015
E	0.450	0.550	0.018	0.022
L	0.000	0.100	0.000	0.004

Suggested Pad Layout



Symbol	Millimeters(mm)		
	Min.	Type.	Max.
J	0.55	—	—
K	0.28	0.30	0.32
M	0.60	—	—

Note :

This soldering footprint is for reference purposes only. Please consult your manufacturing group to ensure your PCB design guidelines are met.