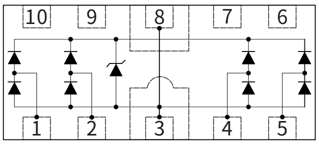
H5VU25U

Uni-directional 5V Ultra Small Capacitance ESD

Features

- Low capacitance: 0.6pF(Typ.)
- Reverse Working Voltage: 5V
- Uni-directional protection
- DFN2510 surface mount package
- IEC 61000-4-2 (ESD Air): ±15kV
- IEC 61000-4-2 (ESD Contact): ±10kV
- IEC 61000-4-5 (I/O to GND Lightning 8/20μs): 4.0A

DFN2510



Applications

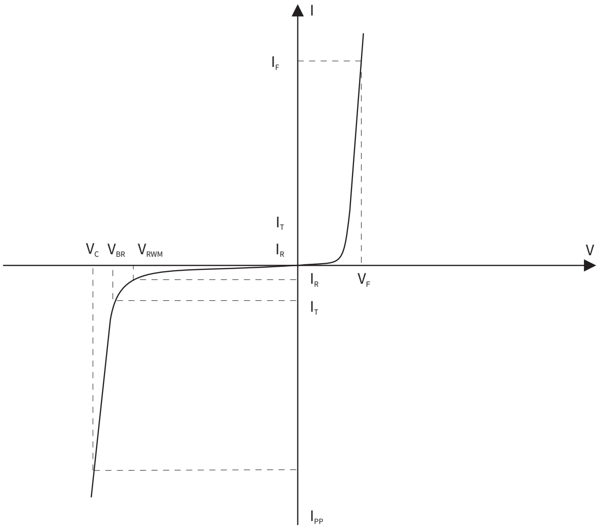
- USB 3.0, USB 2.0
- HDMI 1.3/1.4
- Display Port 1.3
- eSATA
- Unified Display Interface (UDI)
- PDAs

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)	±15	KV
		ESD per IEC 61000-4-2(Contact)	±10	KV
P_{PP}	Peak Pulse Power	tp = 8/20 μs	56	W
I_{PP}	Rated Peak Pulse Current	tp = 8/20 μs	4.0	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 @ VRWM
V_{RWM}	Peak Reverse Working Voltage
P_{PP}	Peak Pulse Power Dissipation
C_J	Junction Capacitance @ V_R=0V,f=1MHz
I_F	Forward Current
V_F	Forward Voltage @I_F



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	6.0	—	—	V
Reverse Leakage Current	I_R	V_{RWM}=5.0V;T_A=25°C	—	—	1.0	µA
Clamping Voltage	V_C	I_{PP}=1A,tP=8/20µs, Any I/O to GND , Positive	—	8.5	12	V
		I_{PP}=4A,tP=8/20µs, Any I/O to GND , Positive	—	12	14	V
Junction Capacitance	C_J	V_R = 0V, f = 1 MHz, I/O to I/O	—	0.4	0.5	pF
		V_R = 0V, f = 1 MHz, I/O to GND	—	0.6	0.8	pF

Ordering Information

PREFERED P/N	PACKAGE	SIZE(mm)	DELIVERY MODE	MPQ(PCS)
H5VU25U	DFN2510	2.50×1.00×0.50	7'' REEL	3,000

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

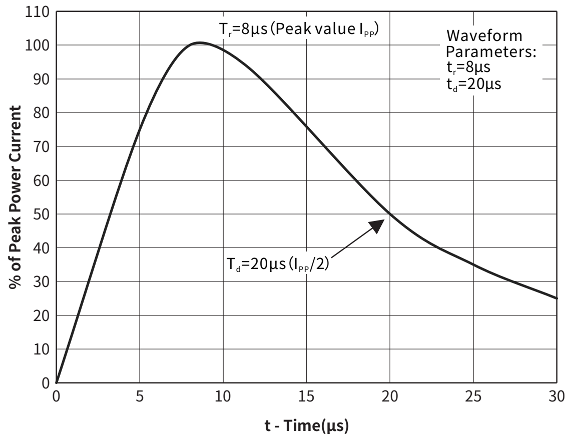


Fig.1 Pulse Waveform

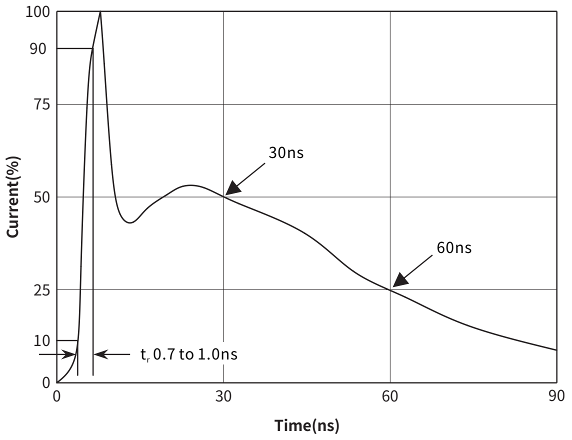


Fig.2 Pulse Waveform-ESD(IEC61000-4-2)

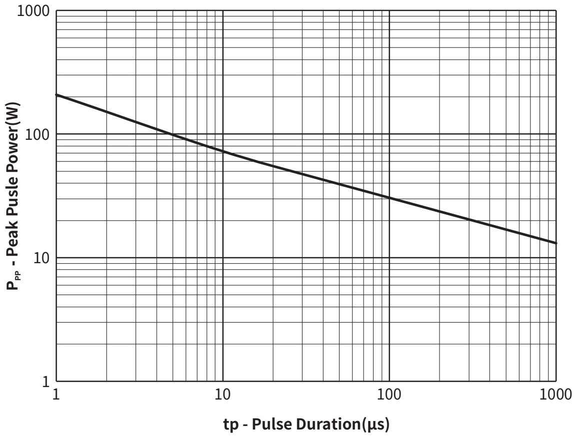


Fig.3 Peak Pulse Power vs. Pulse Time

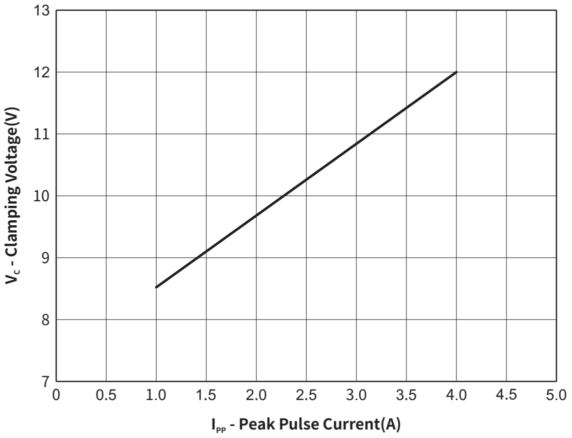
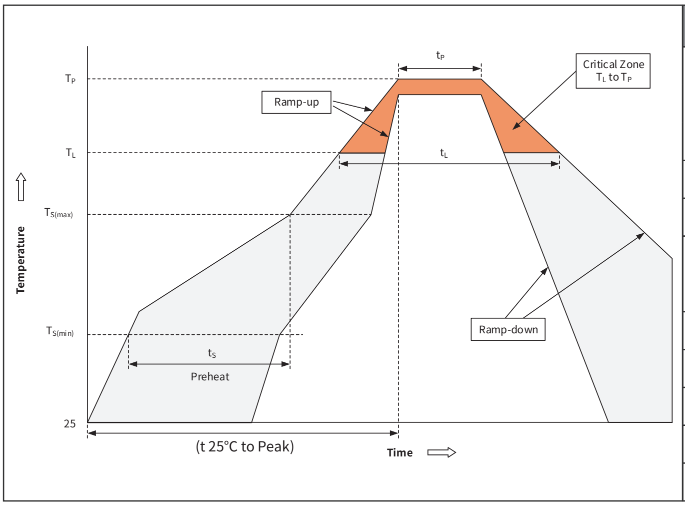


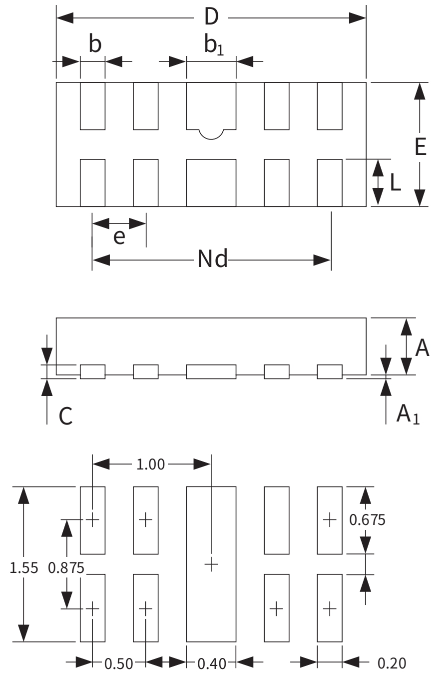
Fig.4 Clamping Voltage vs. Peak Pulse Current

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 (DFN2510)



Symbol	Millimeters(mm)		
	Min.	Type.	Max.
D	2.45	2.50	2.55
E	0.95	1.00	1.05
b_1	0.35	0.40	0.45
b	0.15	0.20	0.25
L	0.33	0.38	0.43
Nd	2.00 BSC		
e	0.50 BSC		
A	0.45	0.50	0.55
c	0.15 REF		
A_1	0.00	-	0.05

Note :

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