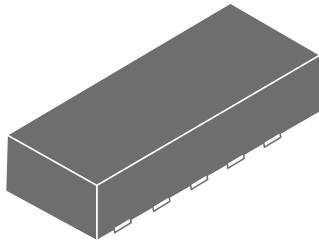
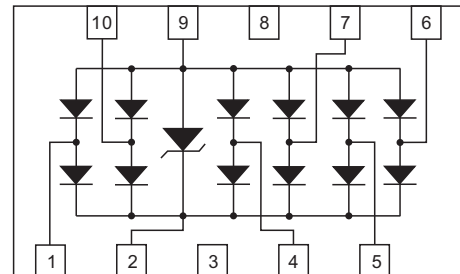


Electro-Static Discharge TUSD05R6U Ultra Low Capacitance TVS Diode

DFN4120-10L



Pin Configuration



Features

- With TVS Diode
- ESD Protection:Level 4
- Low clamping voltage
- 150 Watts peak pulse power per line(tp=8/20μs)
- Ultra low capacitance:0.4pf max.(any I/O to GND.)
- Protection 6 lines I/O port

IEC Compatibility

- EN61000 - 4
- IEC61000-4-2(ESD):Level 4,Contact:>±8kv,Air:>±15kv
- IEC61000-4-4 (EFT) 40A (5/50ns)
- IEC61000-4-5 (Surge) 5A (8/20μs)

Applications

- Personal Digital Assistance
- Wireless System
- HDMI 1.4
- High Speed Data Line
- Ethernet
- USB 3.0 Power and Data line Protection

Mechanical Characteristics

- JEDEC DFN4120-10L Package
- Molding Compound Flammability Rating : UL 94V-O
- Quantity Per Reel : 3,000pcs
- Reel Size : 7 inch
- Halogen Free

Maximum Ratings($T_A=25^{\circ}\text{C}$ unless otherwise specified)

Parameter	Symbol	Value	Units
Peak Pulse Power($t_p=8/20\mu\text{s}$)	P_{PP}	150	Watts
Lead Soldering Temperature	T_L	260(10 sec.)	$^{\circ}\text{C}$
Operating Temperature Range	T_J	-55~150	$^{\circ}\text{C}$
Storage Temperature Range	T_{STG}	-55~150	$^{\circ}\text{C}$

Electrical Characteristics($T_A=25^{\circ}\text{C}$ unless otherwise specified)

TUSD05R6U(Marking:FW05D)

Parameter	Symbol	Conditions	Min.	Typ.	Max.	Units
Reverse Stand-off Voltage	V_{RWM}	Pin 2 to 9			5	V
Reverse Breakdown Voltage	V_{BR}	$I_z=1\text{mA}$, Pin 2 to 9	6.1	8.5		V
Forward Voltage	V_F	$I_F=15\text{mA}$, GND to any I/O Pins			1.15	V
Clamping Voltage	V_C	$I_{PP}=1\text{A}$, $t_p=8/20\mu\text{s}$			15	V
		$I_{PP}=5\text{A}$, $t_p=8/20\mu\text{s}$			28	V
Reverse Leakage Current	I_R	@ V_{RWM} , Any I/O Pins to GND			0.9	μA
Junction Capacitance	$C_{I/O}$	0Vdc, $f=1\text{MHz}$ Between I/O Pins and GND			0.4	pF

Ratings and Characteristic Curves

Fig.1 Non-repetitive Peak Pulse Power V.S Pulse Time

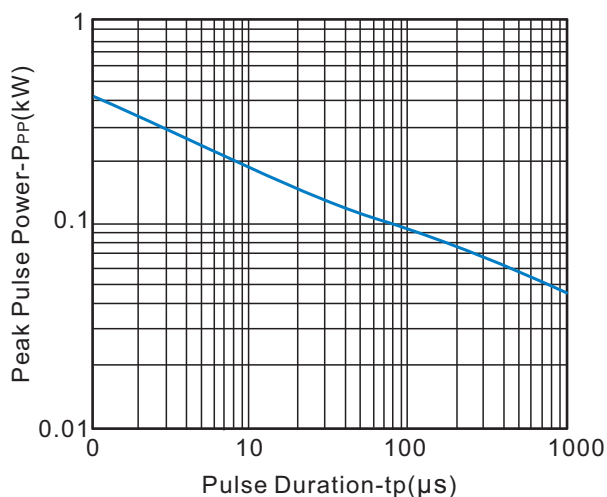
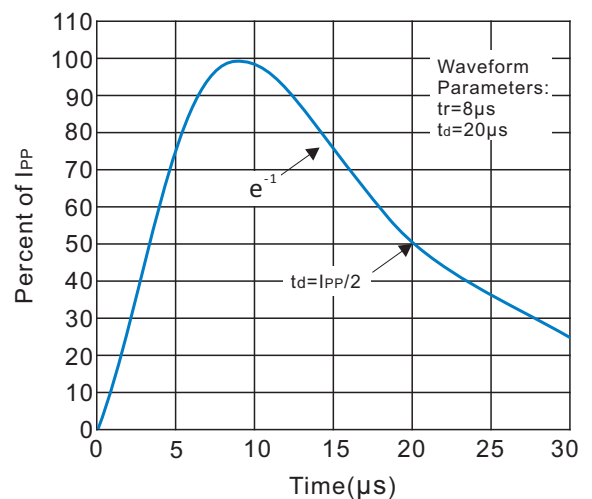
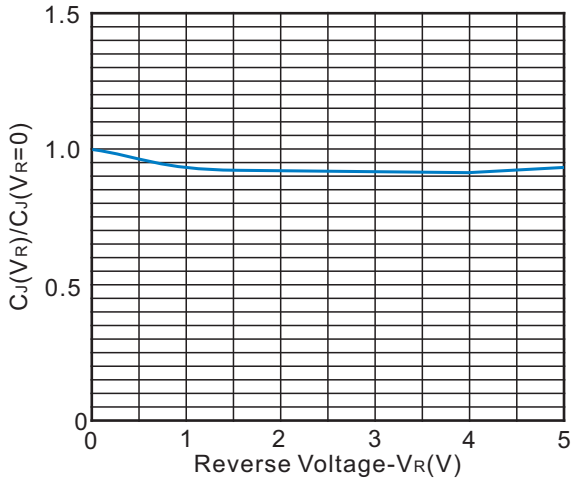


Fig.2 Pulse Waveform



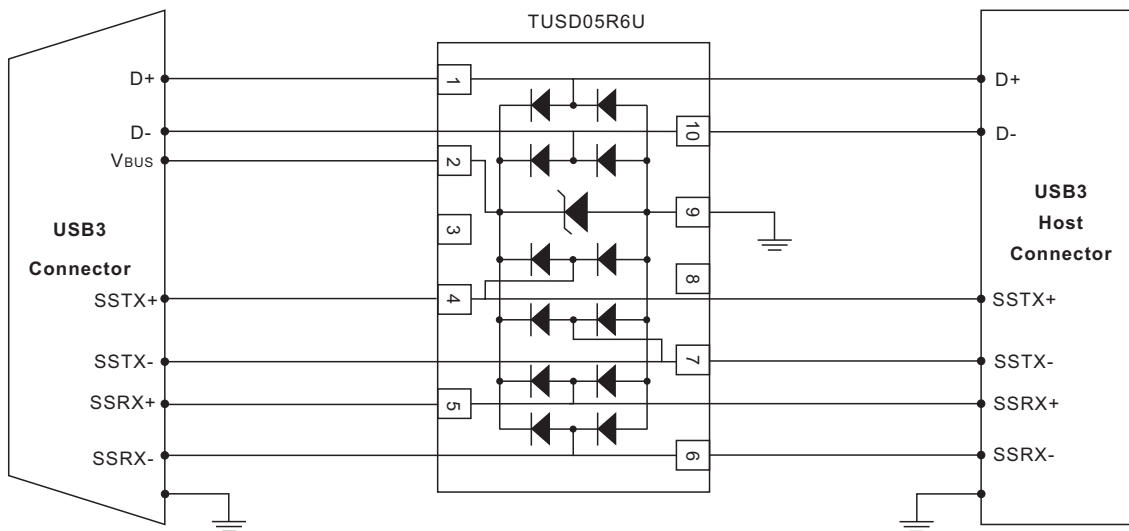
Ratings and Characteristic Curves

Fig.3 Normalized Capacitance vs. Reverse Voltage

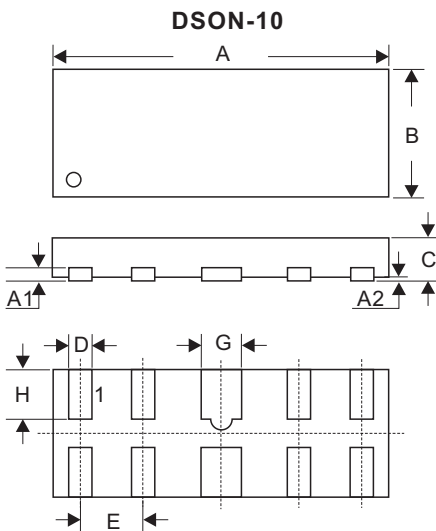


Application

USB3.0 Protection



Dimensions(DSON-10)



DIM	Millimeters		Inches	
	Min	Max	Min	Max
A	2.4	2.6	0.094	0.102
A1	0.13 BSC		0.005 BSC	
A2	0.00	0.05	0.00	0.002
B	0.90	1.10	0.035	0.043
C	0.50	0.65	0.020	0.026
D	0.15	0.25	0.006	0.010
E	0.50 BSC		0.020 BSC	
G	0.35	0.45	0.014	0.018
H	0.30	0.425	0.012	0.017

Recommended Mounting Pad Layout

