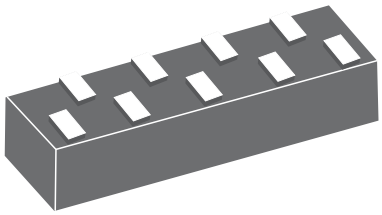
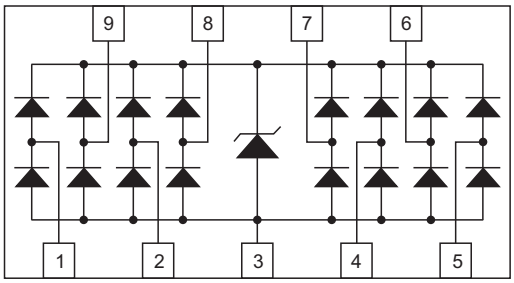
Electro-Static Discharge
TUSD05T8U
Ultra Low Capacitance ESD array for High Speed Data

DFN3180-9L



Pin Configuration



Features

- With TVS Diode
- ESD Protection:Level 4
- Flow through
- 150 Watts peak pulse power per line(tp=8/20uS)
- Ultra low capacitance:0.3pf max.(any I/O to I/O .)
- Protection 4 pair(8 lines) I/O port

IEC Compatibility

- EN61000 - 4
- IEC61000-4-2(ESD):Level 4,Contact:>±12kv,Air:>±15kv
- IEC61000-4-4 (EFT) 40A (5/50ηs)
- IEC61000-4-5 (Surge) 5A (8/20μs)

Applications

- USB Type C
- Wireless System
- HDMI 1.3,1.4 and 2.0
- High Speed Data Line
- Display Port
- Notebook computers

Mechanical Characteristics

- Molded DFN3810-9L package
- Packing: Tape and Reel
- Flammability rating UL 94V -0
- Quantity Per Reel : 3,000pcs
- Reel Size : 7 inch
- Halogen Free

Maximum Ratings(T_A=25℃ unless otherwise specified)

Parameter	Symbol	Value	Units
Peak Pulse Power(tp=8/20μs)	P_{PP}	150	Watts
Operating Temperature Range	T_J	-55~150	℃
Storage Temperature Range	T_{STG}	-55~150	℃
Peak Pulse Current(tp=8/20μs)	I_{PP}	5	A

Electrical Characteristics(T_A=25℃ unless otherwise specified)

TUSD05T8U(Marking:8005)

Parameter	Symbol	Conditions	Min.	Typ.	Max.	Units
Reverse Stand-off Voltage	V_{RWM}	I/O to GND			5	V
Reverse Breakdown Voltage	V_{BR}	I_Z=1mA,I/O to GND	6.1		8.5	V
Reverse Leakage Current	I_R	V_R=5V,I/O to GND			0.9	μA
Clamping Voltage	V_C	I_{PP}=1A,tp=8/20μs,I/O to GND			10	V
Junction Capacitance	$C_{I/O}$	0Vdc,f=1MHz Pin Capacitance to GND		0.5		pF
Junction Capacitance	$C_{I/O-I/O}$	0Vdc,f=1MHz		0.3		pF

Ratings and Characteristic Curves

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

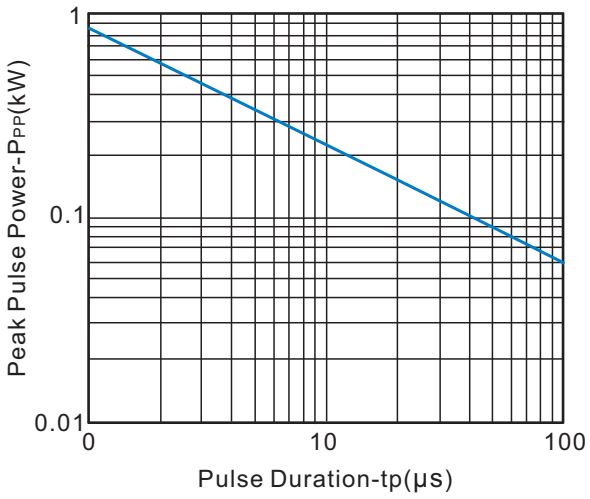
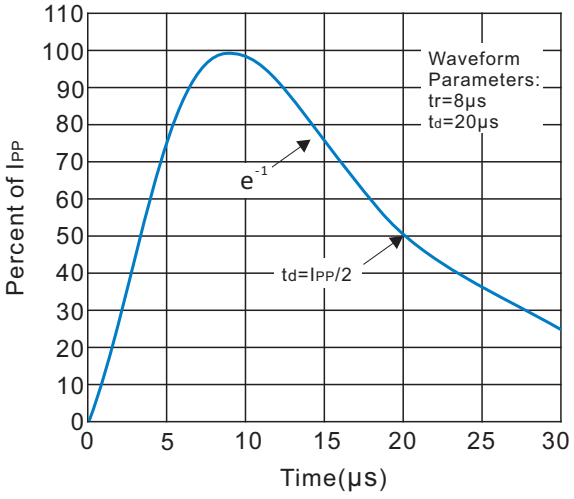


Fig.2 Pulse Waveform



Ratings and Characteristic Curves

Fig.3 Power Derating Curve

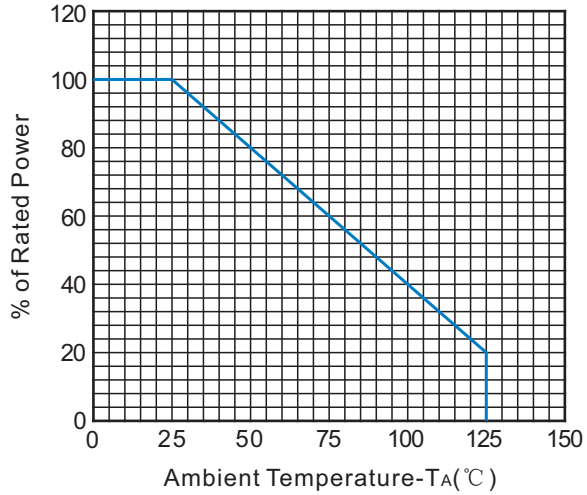


Fig.4 Normalized Capacitance vs.Reverse Voltage

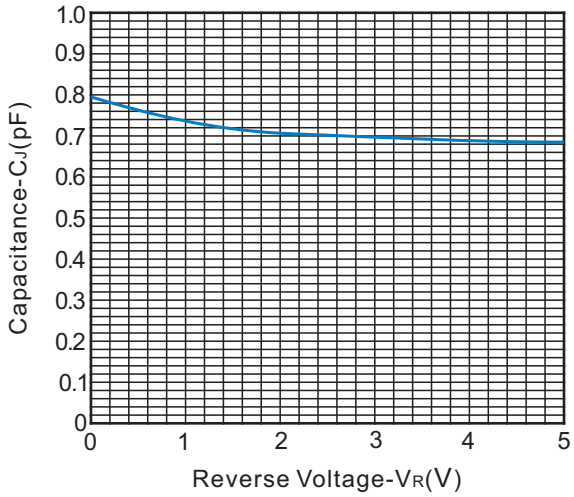


Fig.5 Forward Voltage V_F Map

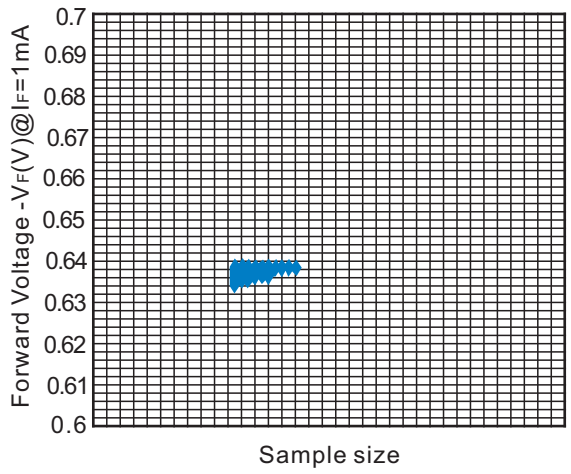


Fig.6 Breakdown Voltage V_B Map I/O Pin to GND

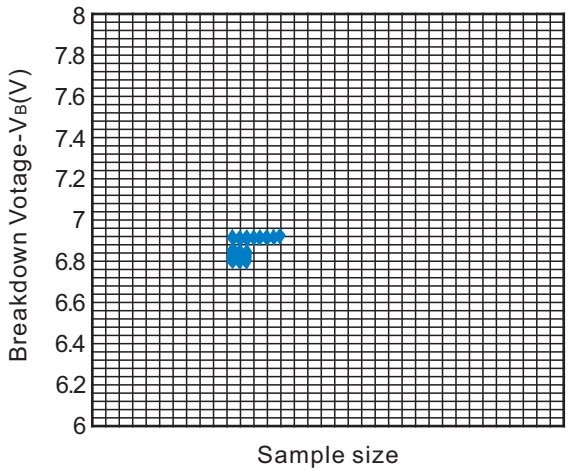
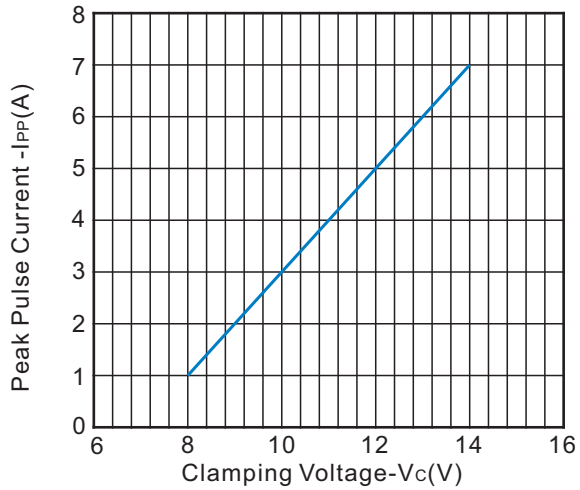
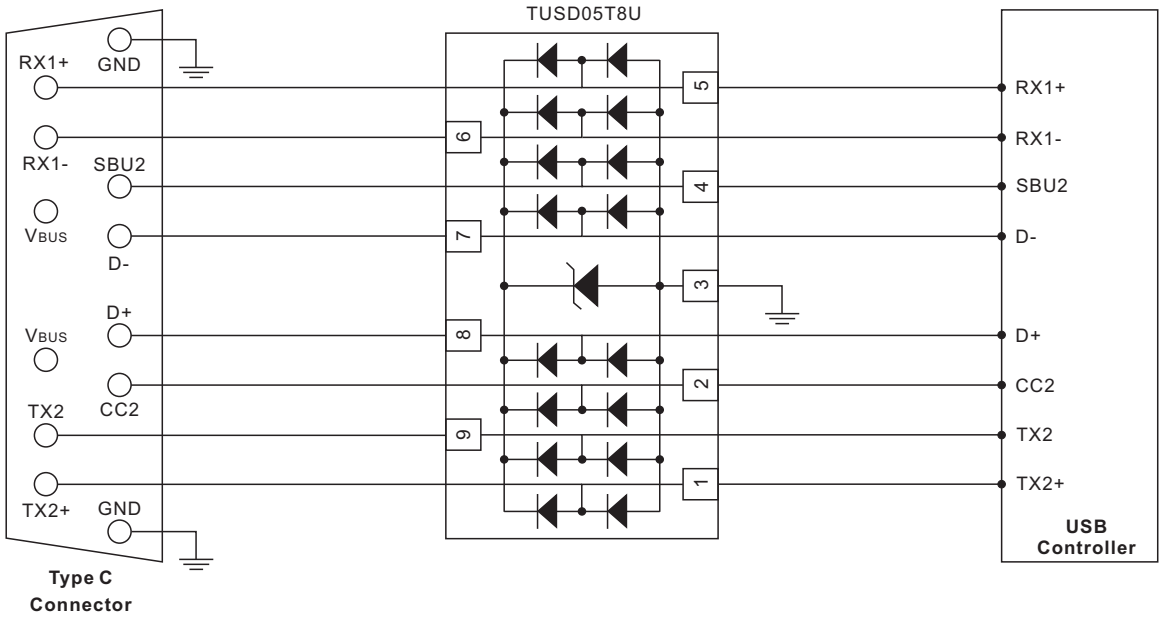


Fig.7 Clamping Voltage V_C Map I/O Pin to GND



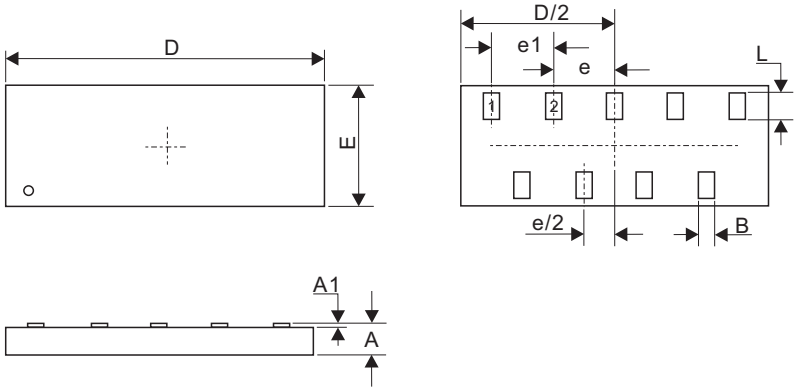
Application

Type-C Protection



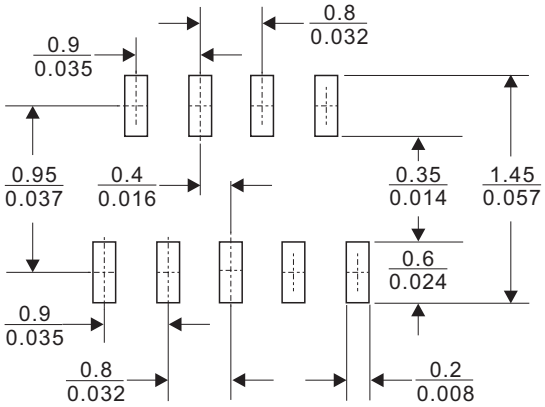
Dimensions(DFN3810-9L)

DFN3810-9L



DIM	Millimeters		Inches	
	Min	Max	Min	Max
A	0.475	0.525	0.019	0.021
A1	0.00	0.05	0.000	0.002
b	0.15	0.25	0.006	0.010
D	3.7	3.9	0.146	0.154
E	0.9	1.1	0.035	0.043
e1	0.9BSC		0.035BSC	
e	0.8BSC		0.032BSC	
L	0.25	0.35	0.010	0.014

Recommended Mounting Pad Layout



Dimensions in (millimeters / inches)