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TPESD7338P

8-Line Ultra Low Capacitance TVS Diode Array

www.sot23.com.tw

Features

- Ultra low capacitance: 0.29pF typical (IO to IO)
- Ultra low leakage: nA level
- Low operating voltage: 3.3V
- Low clamping voltage
- Protects eight data lines
- Leadless flow-through package
- Complies with following standards:
  - – IEC 61000-4-2 (ESD) immunity test
    - Air discharge: ±25kV
    - Contact discharge: ±20kV
  - – IEC61000-4-5 (Lightning) 5A (8/20μs)
  - – IEC61000-4-4 (EFT) 40A (5/50ns)

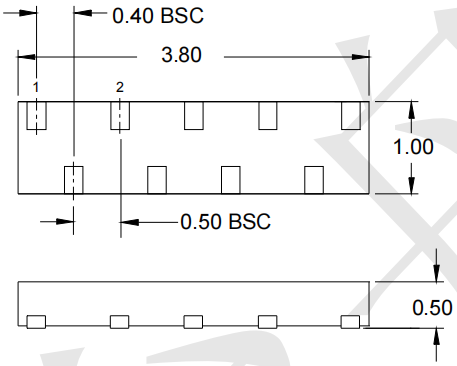
Mechanical Characteristics

- Package: DFN3810-9
- Lead Finish: NiPdAu
- Case Material: “Green” Molding Compound.
- UL Flammability Classification Rating 94V-0
- Moisture Sensitivity: Level 3 per J-STD-020
- Terminal Connections: See Diagram Below
- Shipping Qty :3000 /7Inch Tape & Reel

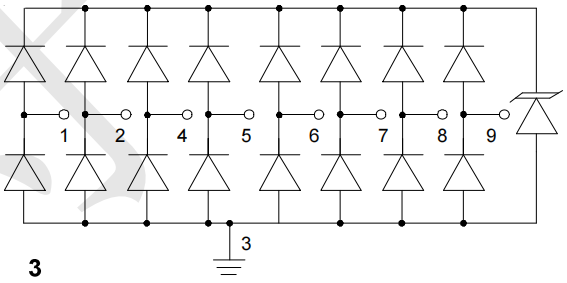
Applications

- USB 3.0, 3.1 and type C
- HDMI 1.4
- High-Speed Data Lines

Dimensions and Pin Configuration



Dimensions



Circuit Diagram

Marking:T318xx

“xx ”is internal code

Absolute Maximum Ratings (Tamb=25°C unless otherwise specified)

Parameter	Symbol	Value	Unit
Peak Pulse Power (8/20μs)	Ppk	100	W
Peak Pulse Current (8/20μs)	I_{PP}	5	A
ESD per IEC 61000−4−2 (Air) ESD per IEC 61000−4−2 (Contact)	V_{ESD}	±25 ±20	kV
Operating Temperature Range	T_J	−55 to +125	°C
Storage Temperature Range	Tstg	−55 to +150	°C

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

Parameter	Symbol	Min	Typ	Max	Unit	Test Condition
Reverse Working Voltage	V_{RWM}			3.3	V	Any I/O pin to ground
Breakdown Voltage	V_{BR}	4.5			V	I_T = 1mA, any I/O pin to ground
Reverse Leakage Current	I_R			0.5	μA	V_{RWM} = 3.3V, any I/O pin to ground
Clamping Voltage	V_C			15	V	I_{PP} = 1A (8 x 20μs pulse), any I/O pin to ground
Clamping Voltage	V_C			18	V	I_{PP} = 5A (8 x 20us pulse), any I/O pin to ground
Junction Capacitance	C_J		0.5	0.6	pF	VR = 0V, f = 1MHz, any I/O pin to ground
Line Capacitance Difference	ΔC_{Line}		0.29	0.45	pF	VR = 0V, f = 1MHz, any I/O pin to pin variation

Typical Performance Characteristics (T_A=25°C unless otherwise Specified)

Fig1. 8/20μs Pulse Waveform

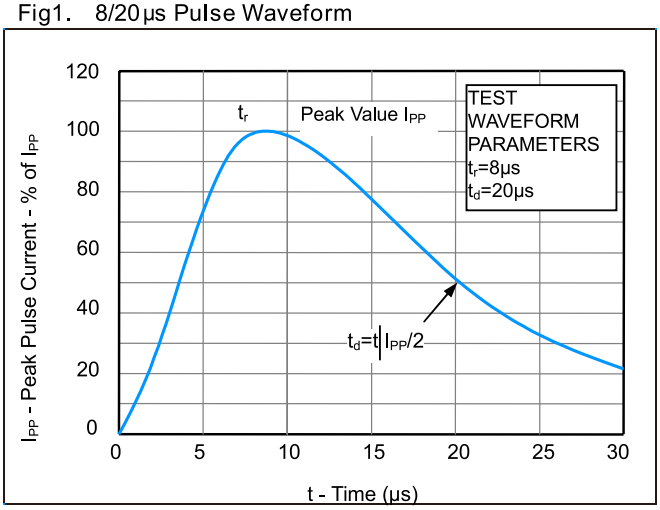


Fig2. ESD Pulse Waveform (according to IEC 61000-4-2)

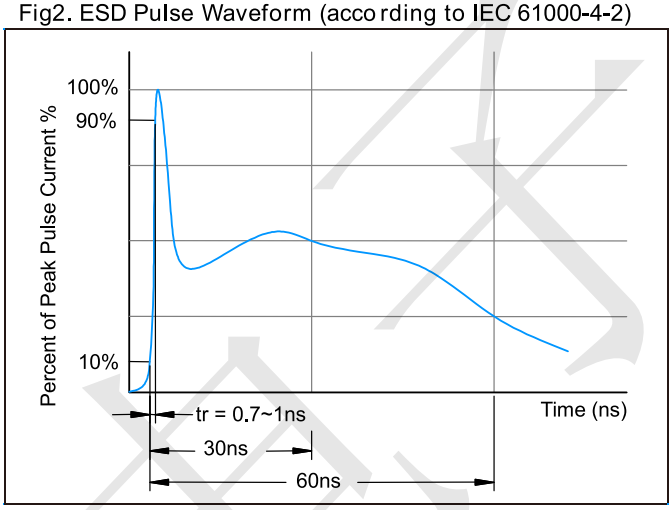
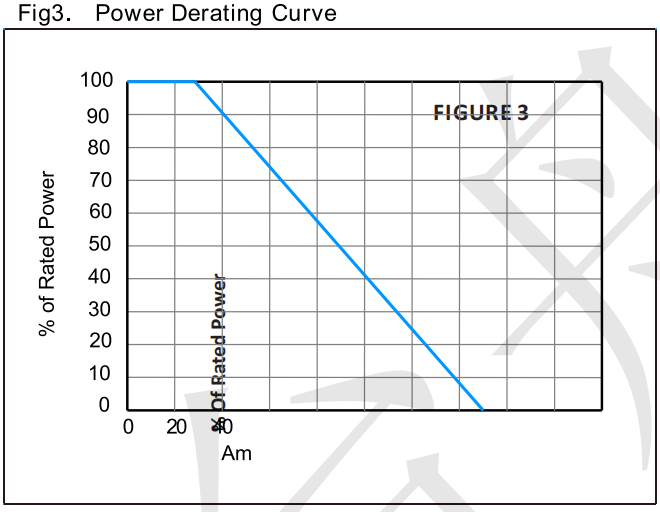
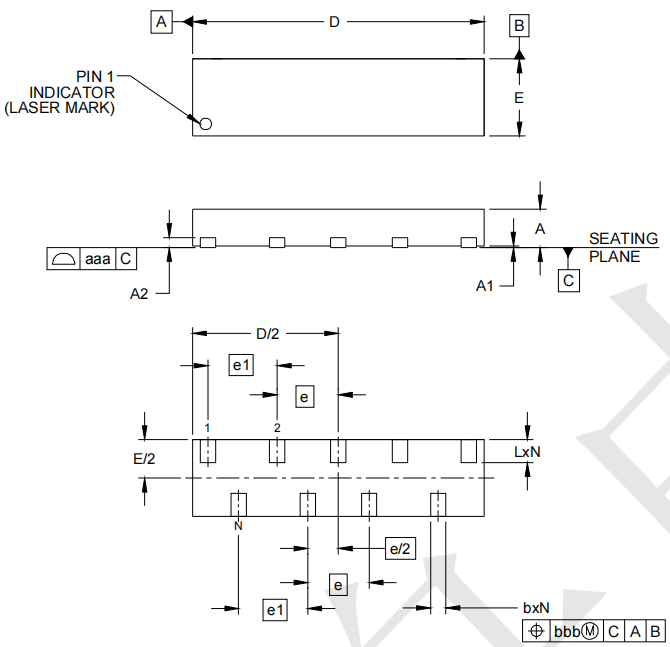


Fig3. Power Derating Curve

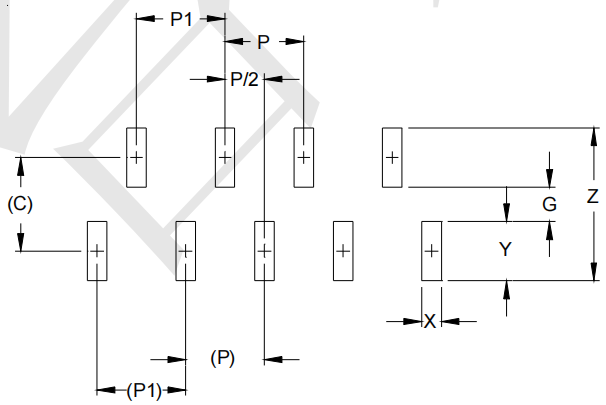


DFN3810-9 Package Outline Drawing



DIMENSIONS			
DIM	MILLIMETERS		
	MIN	NOM	MAX
A	0.45	0.50	0.55
A1	0.00	0.02	0.05
A2		(0.13)	
b	0.15	0.20	0.25
D	3.70	3.80	3.90
E	0.90	1.00	1.10
e		0.80 BSC	
e1		0.90 BSC	
L	0.25	0.30	0.35
N		9	
aaa		0.08	
bbb		0.10	

Land Pattern - DFN3810-9



DIMENSIONS	
DIM	MILLIMETERS
C	(0.95)
G	0.35
P	0.80
P1	0.90
X	0.20
Y	0.60
Z	1.55