

Features

- ❑ IEC61000-4-2 (ESD) +/-30kV (air),
 +/-30KV(contact)
- IEC61000-4-4 (EFT) 80A (5/50ns)
- ❑ Peak Pulse Current(tp=8/20us) 180A
- ❑ Protects one I/O line (unidirectional)
- ❑ Working voltages : 4.8V
- ❑ Low leakagecurrent

Description

The TS0491LDX is designed for applications requiring transient overvoltage protection capability. They are intended for use in voltage and ESD sensitive equipment such as computers, printers, business machines communication , systems , medical equipment and other applications. These devices are ideal for situations where board space is at a premium. The TS0491LDX has been specifically designed to protect sensitive components which are connected to power data and transmission lines from overvoltage caused by ESD (electrostatic discharge), CDE(Cable Discharge Events) , and EFT (electrical fast transients).

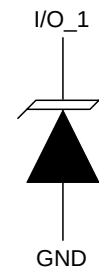
Applications

- ❑ Cell Phone Handsets and Accessories
- ❑ Microprocessor based equipmentPersonal
- ❑ Digital Assistants (PDA's)Notebooks,
- ❑ Desktops, and ServersPortable
- ❑ Instrumentation
- ❑ Networking and Telecom
- ❑ Serial and Parallel Ports.
- ❑ Peripherals

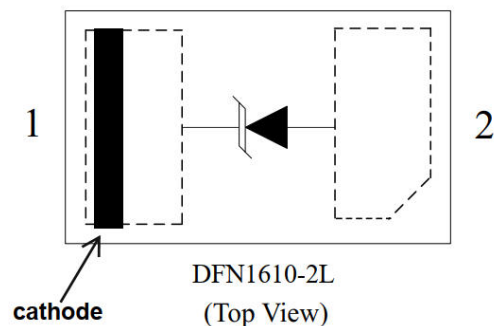
Mechanical Characteristics

- ❑ DFN1610-2L package
- ❑ Flammability Rating: UL 94V-0
- ❑ Packaging: Tape and Reel
- ❑ High temperature soldering guaranteed:260°C/10s
- ❑ Reel size: 7 inch

Circuit Diagram



Pin Configuration





Absolute Maximum Rating

Symbol	Parameter	Value	Units
V_{ESD}	ESD per IEC 61000-4-2 (Air) ESD per IEC 61000-4-2 (Contact)	± 30 ± 30	kV
I_{PP}	Peak Pulse Current(8/20us)	180	A
T_{OPT}	Operating Temperature	-55/+150	°C
T_{STG}	Storage Temperature	-55/+150	°C
T_L	Lead Soldering Temperature	260 (10 sec.)	°C

Electrical Characteristics (T = 25°C)

Symbol	Parameter	Diagram
V_{RWM}	Nominal Reverse Working Voltage	
I_R	Reverse Leakage Current @ V_{RWM}	
V_{BR}	Reverse Breakdown Voltage @ I_T	
I_T	Test Current for Reverse Breakdown	
V_C	Clamping Voltage @ I_{PP}	
I_{PP}	Maximum Peak Pulse Current	
C_{ESD}	Parasitic Capacitance	
I_F	Forward Current	
V_F	Forward Voltage @ I_F	

Symbol	Test Condition	Minimum	Typical	Maximum	Units
V_{RWM}				4.8	V
I_R	$V_{RWM} = 4.8V$, T = 25°C			1.0	μA
V_{BR}	$I_T = 10\mu A$	5.0		6.5	V
V_H	$I_H = 1mA$		5.5		V
V_C	$I_{PP} = 100A$, $t_p = 8/20\mu s$			8.8	V
	$I_{PP} = 180A$, $t_p = 8/20\mu s$			10.8	V
C_{ESD}	$V_R = 0V$, f = 1MHz Between I/O and GND		360	650	pF

Typical Characteristics

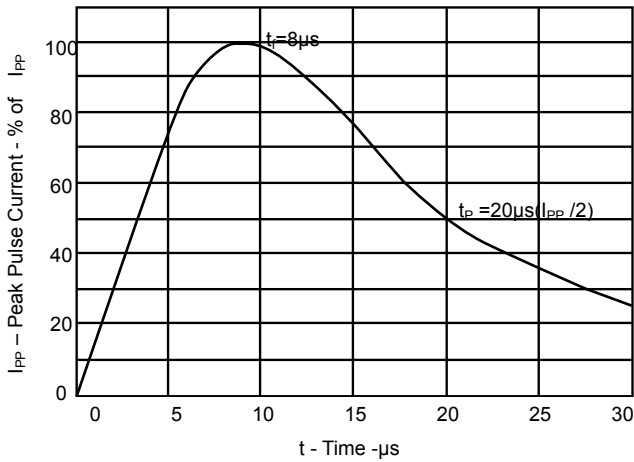


Fig 1. Pulse Waveform

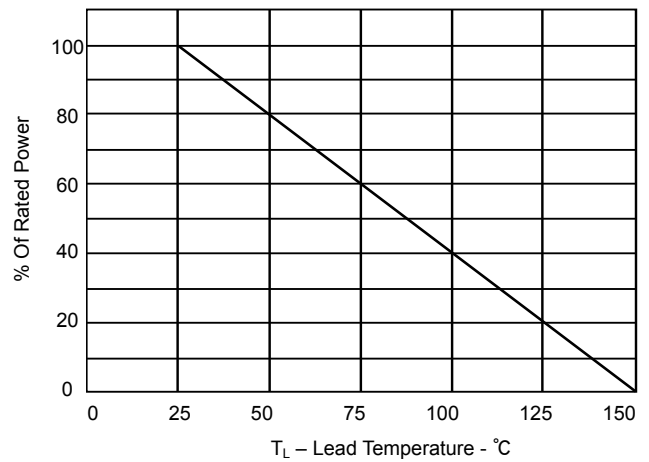


Fig 2. Power Derating Curve

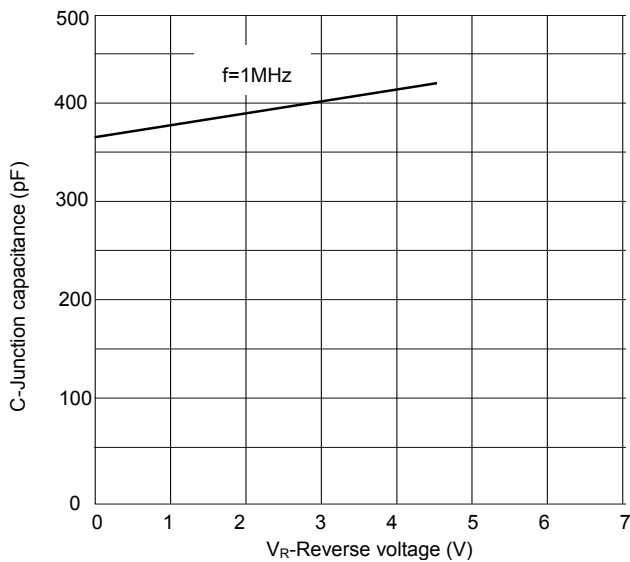
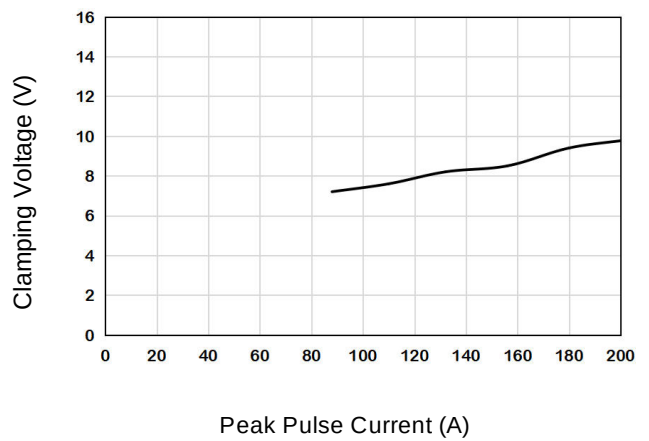


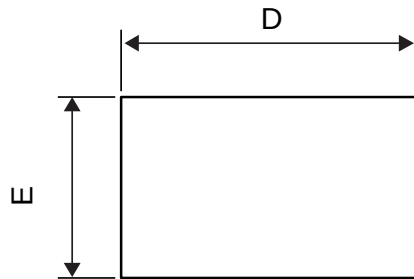
Fig 3. Capacitance vs. Reverse voltage

Clamping Voltage vs. Peak Pulse Current

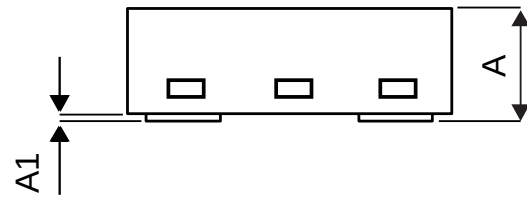


Package Outline Demensions

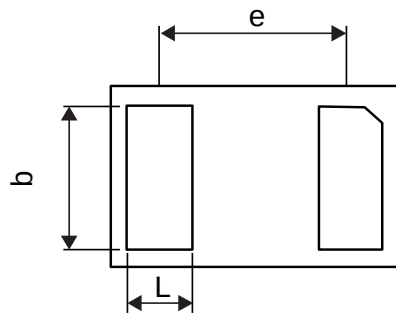
- DFN1610-2L Package
- MSL-1



Top View



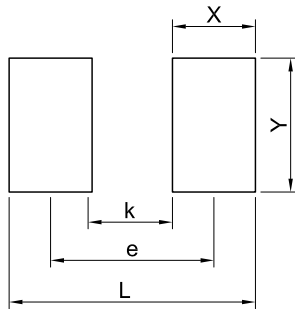
Side View



Bottom View

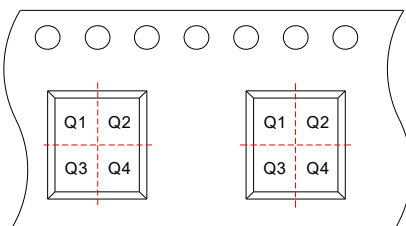
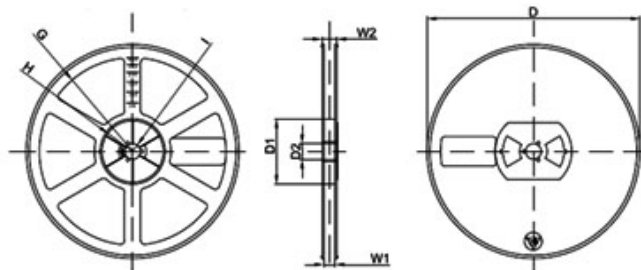
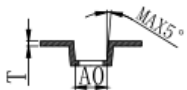
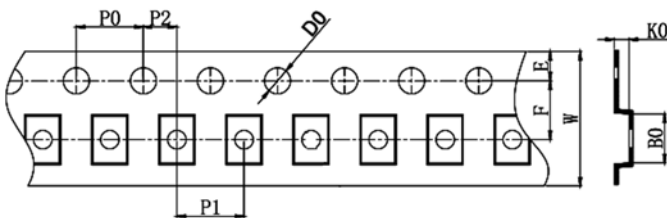
Symbol	Dimension In Millimeters			Dimension In Inches		
	Normal	Min	Max	Normal	Min	Max
A	0.550	0.500	0.600	0.022	0.020	0.024
A1	0.000	--	0.050	0.000	--	0.002
D	1.600	1.550	1.650	0.064	0.062	0.066
E	1.000	0.950	1.050	0.040	0.038	0.042
b	0.800	0.750	0.850	0.032	0.030	0.034
L	0.400	0.350	0.450	0.016	0.014	0.018
e	1.100 BSC			0.044 BSC		

SOLDERING FOOTPRINT



DFN1610	
DIM	(mm)
X	0.62
Y	1.00
L	1.84
e	1.22
K	0.60

Tape and Reel Specification



User direction of feed

Pin 1 quadrant: Q1&Q2

Symbol	Millimeters	
	Typ.	Typ.
A0	1.15	0.045
B0	1.75	0.069
K0	0.67	0.026
D0	1.55	0.061
P0	4.00	0.157
P1	4.00	0.157
P2	2.00	0.079
E	1.75	0.069
F	3.50	0.138
W	8.00	0.315
D	Φ178	Φ7.008
D1	54.40	2.142
D2	13.00	0.512
G	R78.00	R3.071
H	R25.60	R1.008
I	R6.50	R0.256
W1	9.50	0.374
W2	12.30	0.484

Marking Codes



Note:

- (1) "49" is part number, fixed
- (2) "XX" is the identification number.

Ordering Information

Part Number	Working Voltage	Quantity Per Reel	Reel Size
TS0491LDX	4.8V	3,000	7 Inch