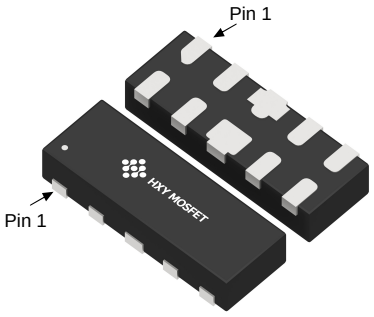
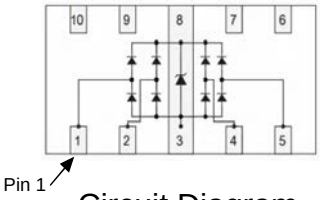
## Discription

The DT1240A-04LPQ-7 is a 4-channel ultra low capacitance rail clam ESD protection diodes array . Each channel consists of a pair of diodes that steer positive or negative ESD current to either the positive or negative rail . A zener diode is integrated in to the array between the positive and negative supply rails. In the typical applications, the negative rail pin (assigned as GND) is connected with system ground . The Positive ESD current is steered to the ground through an ESD diode and Zener diode and the positive ESD voltage is clamped to the zener voltage.




DFN2510-10L
(U-DFN2510-10)




Circuit Diagram

## Features

★ 4 channels of ESD protection;
★ Provides ESD protection to IEC61000-4-2 level 4
- ±15kV air discharge
- ±10kV contact discharge;
★ Channel I/O to GND capacitance: 0.55pF (Max)
★ Channel I/O to I/O capacitance: 0.6pF (Max)
★ Low clamping voltage;
★ Low operating voltage;
★ Improved zener structure;
★ Optimized package for easy high speed data lines PCB layout;
★ RoHS compliant and Halogen Free.

## Ordering information

| Product ID | Pack | Qty(PCS) |
|---|---|---|
| DT1240A-04LPQ-7 | DFN2510-10L(U-DFN2510-10) | 3000 |

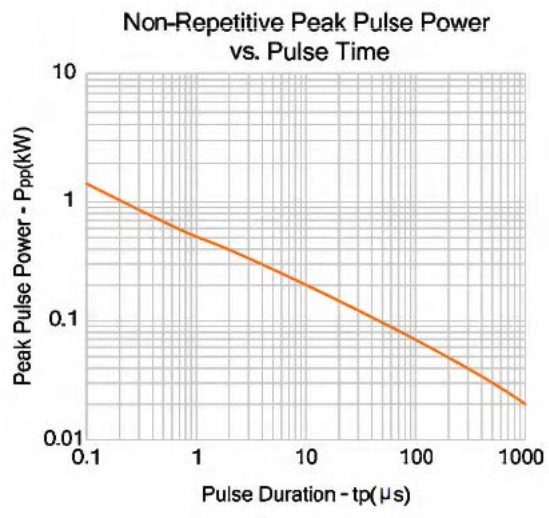
## Absolute Ratings(Tamb = 25°C)

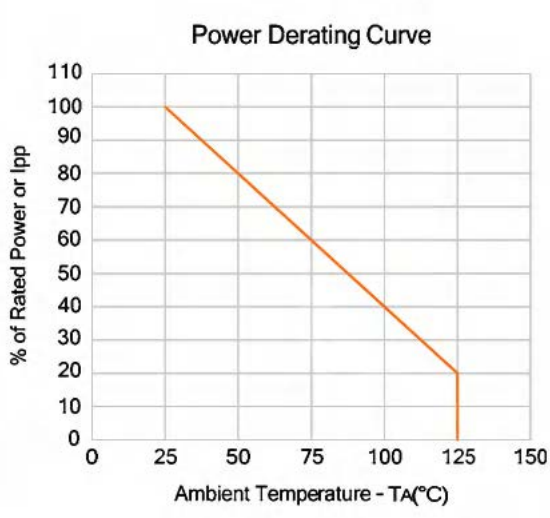
| Symbol | Parameter | Value | Units |
|---|---|---|---|
| $P_{PP}$ | Peak Pulse Power ($t_p$ = 8/20μs) | 70 | W |
| $I_{PP}$ | Peak Pulse Current(8/20us) | 4 | A |
| $T_L$ | Maximum lead temperature for soldering during 10s | 260 | °C |
| $T_{stg}$ | Storage Temperature Range | -55 to +150 | °C |
| $T_{op}$ | Operating Temperature Range | -40 to +125 | °C |
| $T_j$ | Maximum junction temperature | 150 | °C |
| | IEC61000-4-2 (ESD) air discharge<br>contact discharge | ±15<br>±10 | KV |

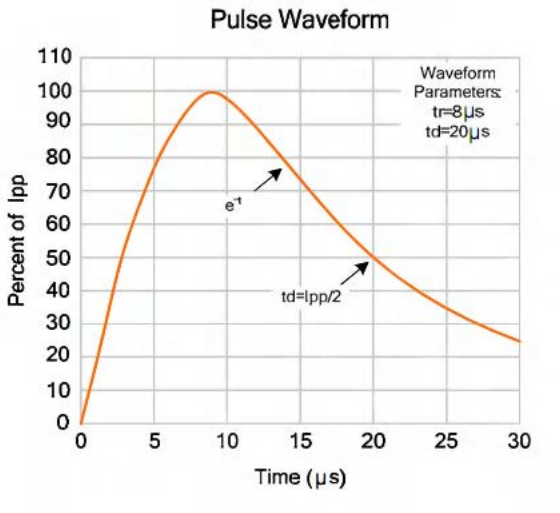
## Electrical Characteristics (Ta= 25℃)

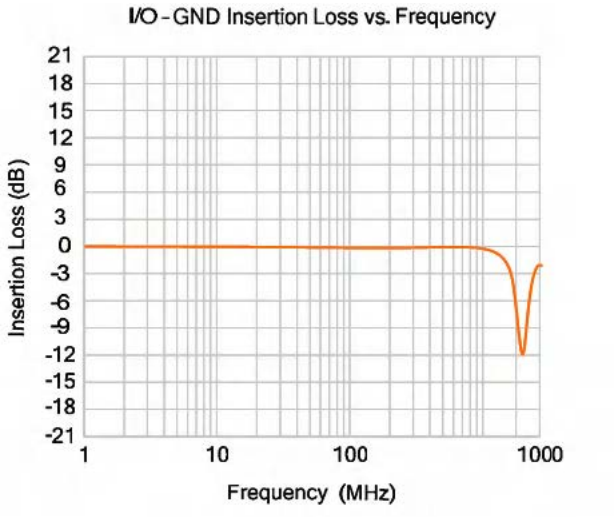
| Symbol | Parameter | Test Condition | Min | Typ | Max | Units |
|---|---|---|---|---|---|---|
| $V_{RWM}$ | Reverse Working Voltage | | | | 3.3 | V |
| $V_{BR}$ | Reverse Breakdown Voltage | $I_T$ = 1mA | 5.6 | | | V |
| $I_R$ | Reverse Leakage Current | $V_{RWM}$ = 5.0V | | | 1.0 | μA |
| $V_C$ | Clamping Voltage | $I_{PP}$ = 1A, $t_p$ = 8/20μs | | 7 | | V |
| | | $I_{PP}$ = 4A, $t_p$ = 8/20μs | | 8 | 20 | V |
| $C_J$ | Junction Capacitance | $V_R$ = 0V, f = 1MHz<br>Any I/O pin to GND | | 0.5 | 0.6 | pF |
| $C_J$ | Junction Capacitance | $V_R$ = 0V, f = 1MHz<br>Any I/O pin to I/O | | 0.3 | 0.4 | pF |

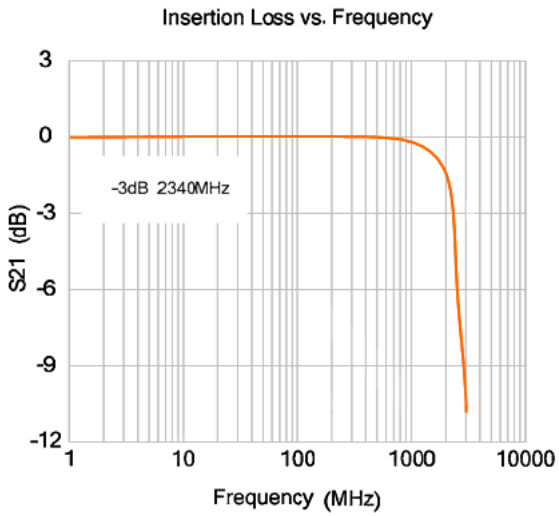
## Typical Characteristics

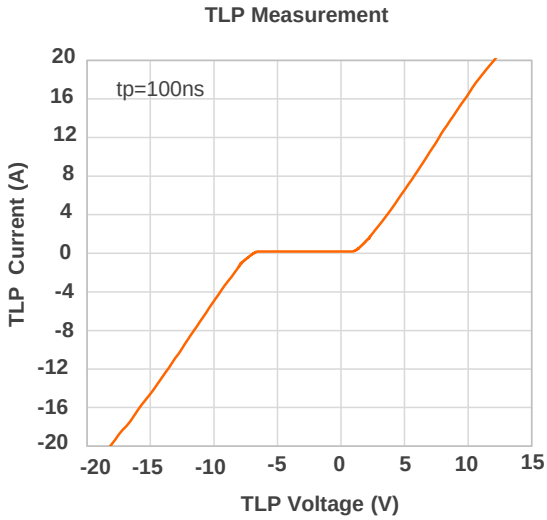


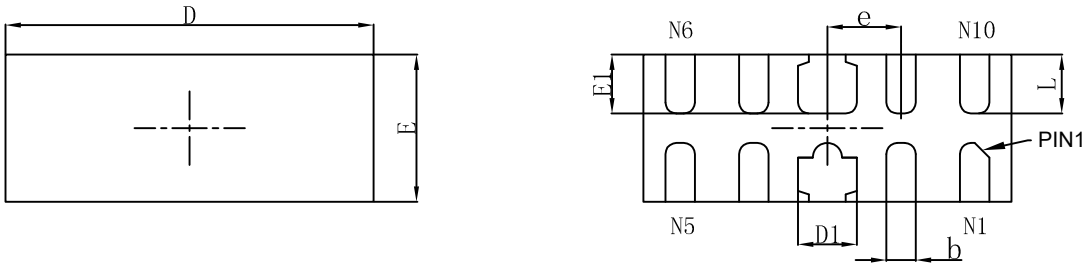

Pulse Waveform
Waveform
Parameters:
tr=8μs
td=20μs
e-1
td=Ipp/2
Percent of Ipp
Time (μs)
110
100
90
80
70
60
50
40
30
20
10
0
0
5
10
15
20
25
30


I/O - GND Insertion Loss vs. Frequency
Insertion Loss (dB)
Frequency (MHz)
21
18
15
12
9
6
3
0
-3
-6
-9
-12
-15
-18
-21
1
10
100
1000

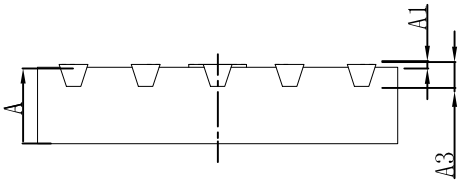

Insertion Loss vs. Frequency
-3dB 2340MHz
S21 (dB)
Frequency (MHz)
3
0
-3
-6
-9
-12
1
10
100
1000
10000


TLP Measurement
tp=100ns
TLP Current (A)
TLP Voltage (V)
20
16
12
8
4
0
-4
-8
-12
-16
-20
-20
-15
-10
-5
0
5
10
15

## Outline And Dimensions



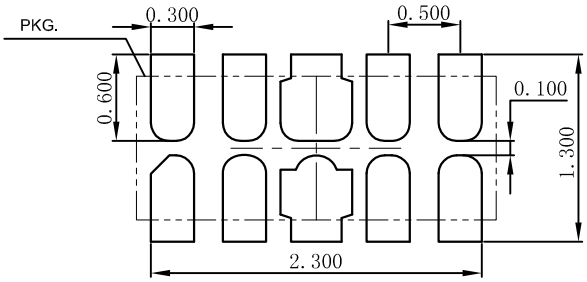

**Bottom View**




**Side View**

| Symbol | Dimensions In Millimeters | | Dimensions In Inches | |
|---|---|---|---|---|
| | Min. | Max. | Min. | Max. |
| A | 0.450 | 0.550 | 0.017 | 0.022 |
| A1 | 0.000 | 0.050 | 0.000 | 0.002 |
| A3 | 0.152REF. | | 0.006REF. | |
| D | 2.450 | 2.550 | 0.096 | 0.100 |
| E | 0.950 | 1.050 | 0.037 | 0.041 |
| D1 | 0.350 | 0.450 | 0.014 | 0.018 |
| E1 | 0.350 | 0.450 | 0.014 | 0.018 |
| b | 0.150 | 0.250 | 0.006 | 0.010 |
| e | 0.500TYP. | | 0.020TYP. | |
| L | | | | |

## Soledering Footprint



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