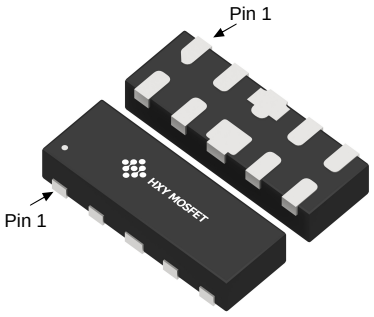
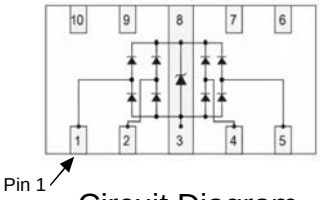
Discription

The ESD8104MUTAG 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
(DFN-10(1x2.5))



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)
ESD8104MUTAG	DFN2510-10L(DFN-10(1x2.5))	3000

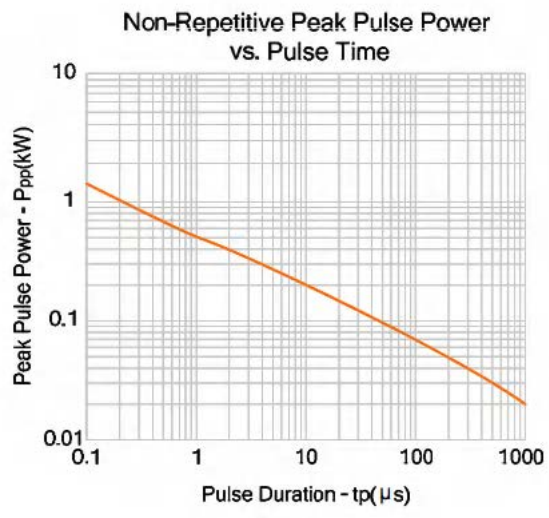
Absolute Ratings(Tamb = 25°C)

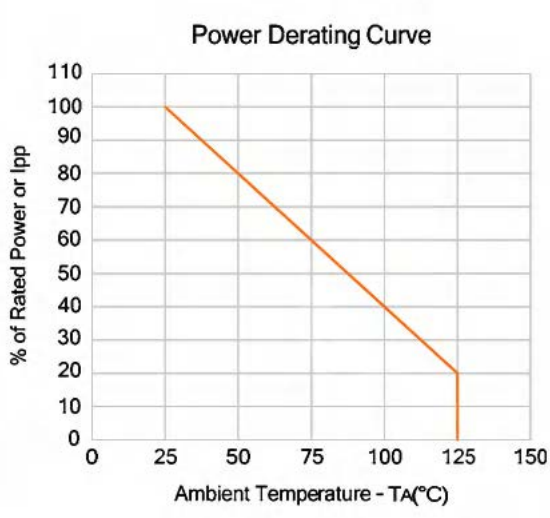
Symbol	Parameter	Value	Units
P_{PP}	Peak Pulse Power (t_p = 8/20μs)	70	W
I_{PP}	Peak Pulse Current(8/20us)	4	A
T_L	Maximum lead temperature for soldering during 10s	260	°C
T_{stg}	Storage Temperature Range	-55 to +150	°C
T_{op}	Operating Temperature Range	-40 to +125	°C
T_j	Maximum junction temperature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

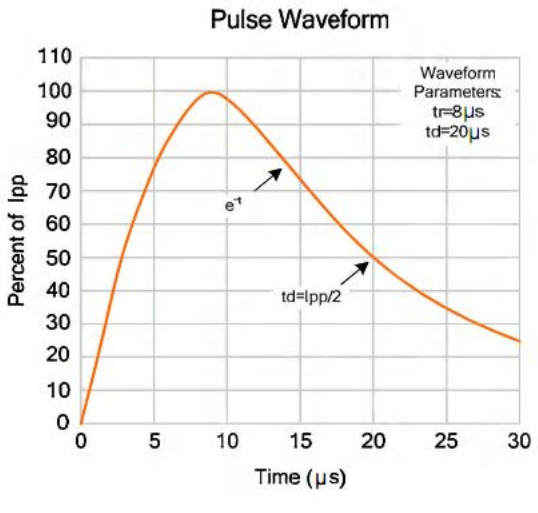
Electrical Characteristics (Ta= 25℃)

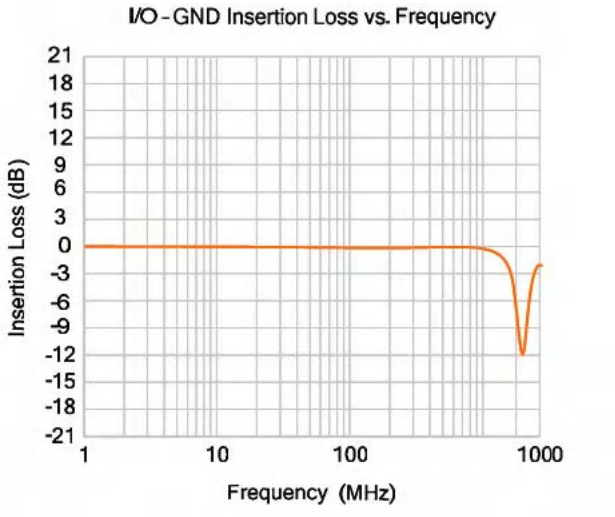
Symbol	Parameter	Test Condition	Min	Typ	Max	Units
V_{RWM}	Reverse Working Voltage				3.3	V
V_{BR}	Reverse Breakdown Voltage	I_T = 1mA	5.6			V
I_R	Reverse Leakage Current	V_{RWM} = 5.0V			1.0	μA
V_C	Clamping Voltage	I_{PP} = 1A, t_p = 8/20μs		7		V
		I_{PP} = 4A, t_p = 8/20μs		8	20	V
C_J	Junction Capacitance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

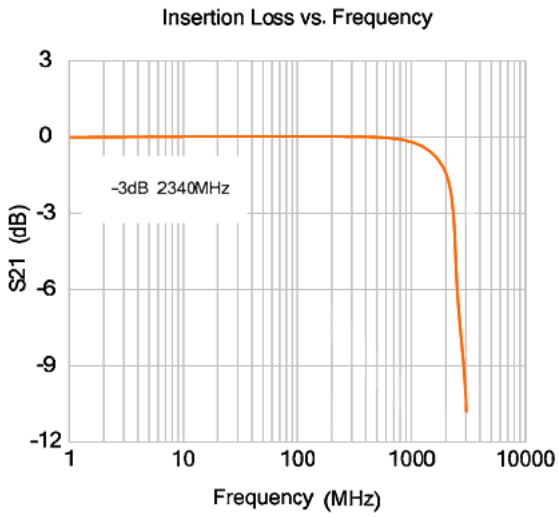
Typical Characteristics

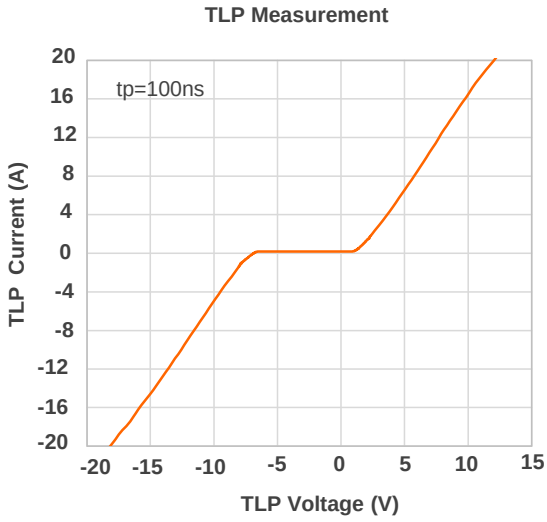




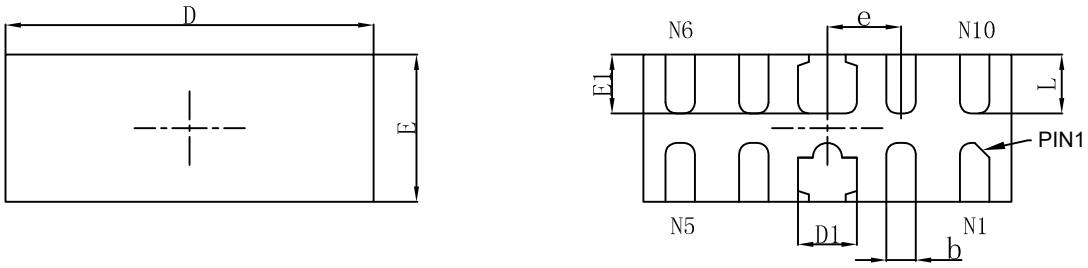

Pulse Waveform
Waveform
Parameters:
tr=8μs
td=20μs
e-1
td=Ipp/2
Percent of Ipp
Time (μs)
110
100
90
80
70
60
50
40
30
20
10
0
0
5
10
15
20
25
30


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

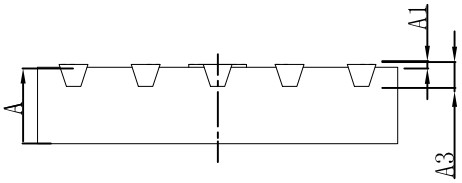

Insertion Loss vs. Frequency
-3dB 2340MHz
S21 (dB)
Frequency (MHz)
3
0
-3
-6
-9
-12
1
10
100
1000
10000


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



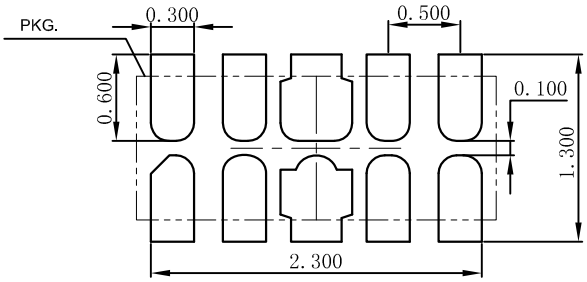
Bottom View



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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