NUP4107UPMU

Product Preview

Low Capacitance ESD Protection Array for High Speed Data Line Protection

The NUP4107UPMU ESD protection array is designed to protect high speed data lines from ESD. Ultra−low capacitance and high level of ESD protection makes this device well suited for use in USB 2.0 applications.

Features

- Low Capacitance (< 2 pF Typical Between I/O Lines and Ground)
- ESD Rating of Class 3B (Exceeding 8 kV) per Human Body model and Class C (Exceeding 400 V) per Machine Model
- Protection for the Following IEC Standards:
  IEC 61000−4−2 (12 kV Contact)
- UL Flammability Rating of 94 V−0
- This is a Pb−Free Device

Typical Applications

- USB 2.0 Data Line and Power Line Protection
- MIDDI Ports
- SIM Ports
- Gigabit Ethernet
- Notebook Computers

MAXIMUM RATINGS (T_J = 25°C unless otherwise noted)

Rating	Symbol	Value	Unit
Operating Junction Temperature Range	T_J	−40 to +125	°C
Storage Temperature Range	T_{stg}	−55 to +150	°C
Lead Solder Temperature − Maximum (10 Seconds)	T_L	260	°C
Human Body Model (HBM) Machine Model (MM) IEC 61000−4−2 Contact (ESD)	ESD	16000 400 12000	V

Stresses exceeding Maximum Ratings may damage the device. Maximum Ratings are stress ratings only. Functional operation above the Recommended Operating Conditions is not implied. Extended exposure to stresses above the Recommended Operating Conditions may affect device reliability.

This document contains information on a product under development. ON Semiconductor reserves the right to change or discontinue this product without notice.

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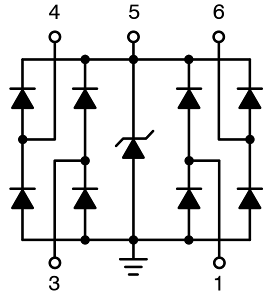
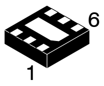
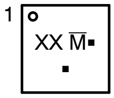


MARKING DIAGRAM



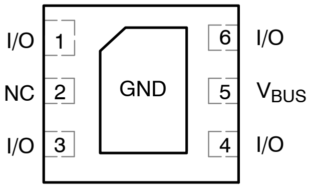
UDFN6 1.6x1.6
MU SUFFIX
CASE 517AP



XX = Specific Device Code
M̄ = Date Code
▪ = Pb−Free Package

(Note: Microdot may be in either location)

PIN CONNECTIONS



ORDERING INFORMATION

Device	Package	Shipping†
NUP4107UPMUTAG	UDFN6 (Pb−Free)	3000/Tape & Reel

†For information on tape and reel specifications, including part orientation and tape sizes, please refer to our Tape and Reel Packaging Specification Brochure, BRD8011/D.

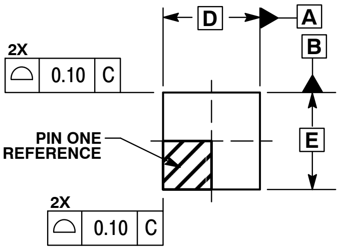
ELECTRICAL CHARACTERISTICS (T_J=25°C unless otherwise specified)

Parameter	Symbol	Conditions	Min	Typ	Max	Unit
Reverse Working Voltage	V_{RWM}	(Note 1)			5.0	V
Breakdown Voltage	V_{BR}	I_T = 1 mA, (Note 2)	6.0			V
Reverse Leakage Current	I_R	V_{RWM} = 5 V			1.0	μA
Junction Capacitance	C_J	V_R = 0 V, f = 1 MHz between I/O Pins and GND		1.9	3.0	pF
Junction Capacitance	C_J	V_R = 0 V, f = 1 MHz between I/O Pins		0.8	1.0	pF

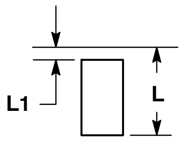
1. TVS devices are normally selected according to the working peak reverse voltage (V_{RWM}), which should be equal or greater than the DC or continuous peak operating voltage level.
2. V_{BR} is measured at pulse test current I_T.

PACKAGE DIMENSIONS

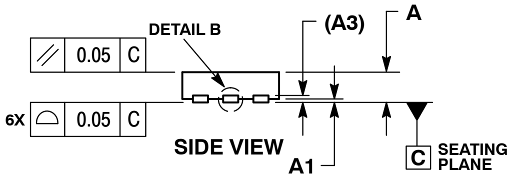
UDFN6, 1.6x1.6, 0.5P
CASE 517AP−01
ISSUE O

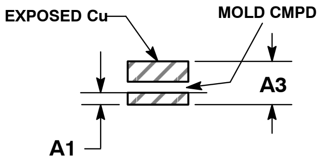


TOP VIEW

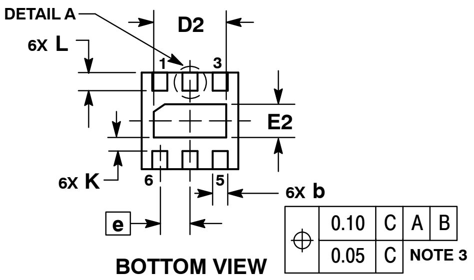


DETAIL A
OPTIONAL CONSTRUCTION





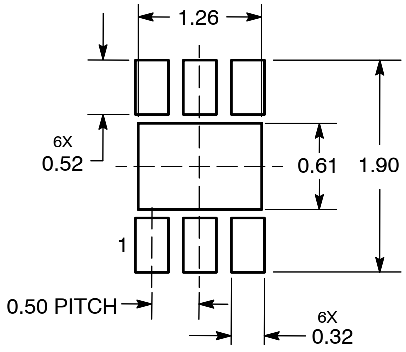
DETAIL B
OPTIONAL CONSTRUCTION



NOTES:
1. DIMENSIONING AND TOLERANCING PER ASME Y14.5M, 1994.
2. CONTROLLING DIMENSION: MILLIMETERS.
3. DIMENSION b APPLIES TO PLATED TERMINAL AND IS MEASURED BETWEEN 0.15 AND 0.30 mm FROM TERMINAL.
4. COPLANARITY APPLIES TO THE EXPOSED PAD AS WELL AS THE TERMINALS.

	MILLIMETERS	
DIM	MIN	MAX
A	0.45	0.55
A1	0.00	0.05
A3	0.13 REF	
b	0.20	0.30
D	1.60 BSC	
E	1.60 BSC	
e	0.50 BSC	
D2	1.10	1.30
E2	0.45	0.65
K	0.20	−−−
L	0.20	0.40
L1	0.00	0.15

SOLDERMASK DEFINED MOUNTING FOOTPRINT*



DIMENSIONS: MILLIMETERS

*For additional information on our Pb−Free strategy and soldering details, please download the ON Semiconductor Soldering and Mounting Techniques Reference Manual, SOLDERRM/D.

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