

NUP8011MU

Low Capacitance Transient Voltage Suppressor Array

This integrated transient voltage suppressor device (TVS) is designed for applications requiring transient overvoltage protection. It is intended for use in sensitive equipment such as computers, printers, business machines, communication systems, and other applications. Its integrated design provides very effective and reliable protection for eight separate lines using only one package. These devices are ideal for situations where board space is at a premium.

Features

- Low Capacitance
- Low Leakage Current < 1 μA @ 4.3 V
- ESD Ratings:
 - ◆ IEC61000-4-2, 8 kV (Contact)
 - ◆ Machine Model = Class C, 400 V
 - ◆ Human Body Model = Class 3B, 8 kV
- UDFN Package, 1.2 x 1.8 mm
- Moisture Sensitivity Level 1
- This is a Pb-Free Device

Benefits

- Provides Protection for ESD Industry Standards: IEC 61000, HBM
- Protects the Line Against Transient Voltage Conditions
- Minimize Power Consumption of the System
- Minimize PCB Board Space

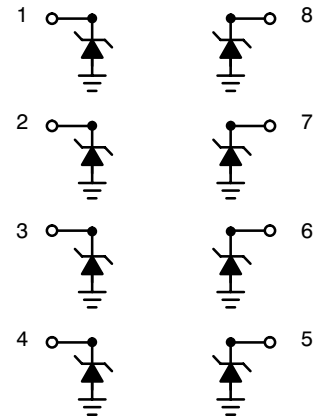
Applications

- ESD Protection for Data Lines
- Wireless Phones
- Handheld Products
- Notebook Computers
- LCD Displays



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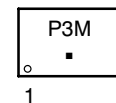


(Top View)



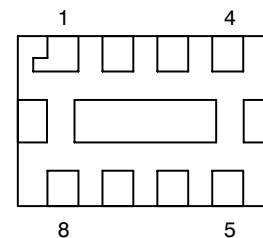
**UDFN8
CASE 517AD**

MARKING DIAGRAM



P3 = Specific Device Code
 M = Month Code
 ■ = Pb-Free Package
 (Note: Microdot may be in either location)

PIN CONNECTIONS



ORDERING INFORMATION

Device	Package	Shipping
NUP8011MUTAG	UDFN8 (Pb-Free)	3000 / Tape & Reel

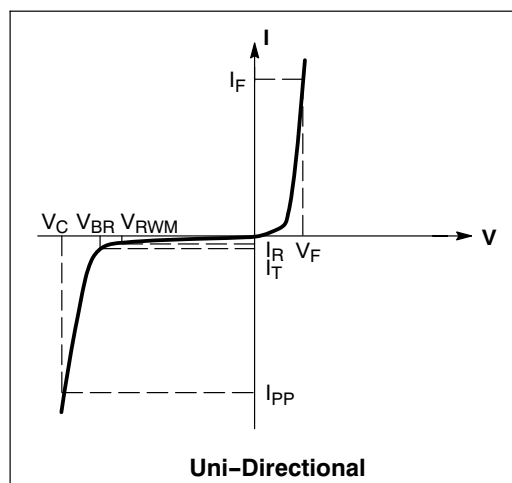
†For information on tape and reel specifications, including part orientation and tape sizes, please refer to our Tape and Reel Packaging Specifications Brochure, BRD8011/D.

NUP8011MU

ELECTRICAL CHARACTERISTICS

($T_A = 25^\circ\text{C}$ unless otherwise noted)

Symbol	Parameter
V_{RWM}	Working Peak Reverse Voltage
I_R	Maximum Reverse Leakage Current @ V_{RWM}
V_{BR}	Breakdown Voltage @ I_T
I_T	Test Current
I_F	Forward Current
V_F	Forward Voltage @ I_F



MAXIMUM RATINGS ($T_A = 25^\circ\text{C}$ unless otherwise noted)

Characteristic	Symbol	Value	Unit
Steady State Power - 1 Diode (Note 1)	P_D	380	mW
Thermal Resistance, Junction-to-Ambient Above 25°C , Derate	$R_{\theta JA}$	327 3.05	$^\circ\text{C}/\text{W}$ $\text{mW}/^\circ\text{C}$
Maximum Junction Temperature	T_{Jmax}	150	$^\circ\text{C}$
Operating Temperature Range	T_{OP}	-40 to +85	$^\circ\text{C}$
Storage Temperature Range	T_{stg}	-55 to +150	$^\circ\text{C}$
Lead Solder Temperature (10 seconds duration)	T_L	260	$^\circ\text{C}$

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.

ELECTRICAL CHARACTERISTICS ($T_A = 25^\circ\text{C}$)

Device	Device Marking	Breakdown Voltage V_{BR} @ 1 mA (Volts)			Leakage Current I_{RM} @ V_{RM}		Typ Capacitance @ 0 V Bias (pF) (Note 2)		Typ Capacitance @ 3 V Bias (pF) (Note 2)	
		Min	Nom	Max	V_{RWM}	I_{RWM} (μA)	Typ	Max	Typ	Max
NUP8011MUTAG	P3	6.47	6.8	7.14	4.3	1.0	12	14	6.7	9.5

1. Only 1 diode under power. For all 4 diodes under power, P_D will be 25%. Mounted on FR-4 board with min pad.
2. Capacitance of one diode at $f = 1$ MHz, $V_R = 0$ V, $T_A = 25^\circ\text{C}$

TYPICAL ELECTRICAL CHARACTERISTICS

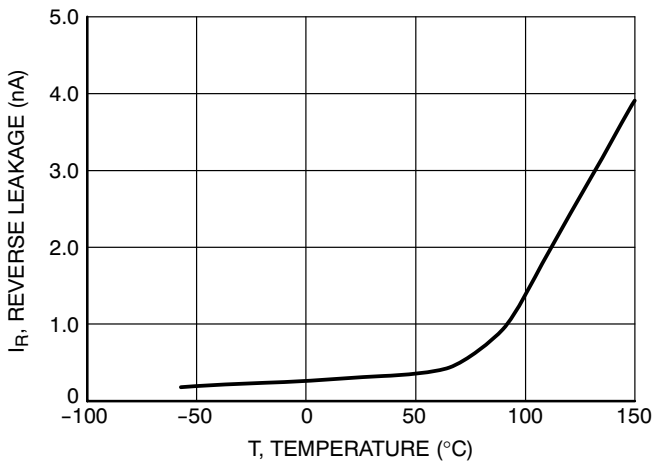


Figure 1. Reverse Leakage versus Temperature

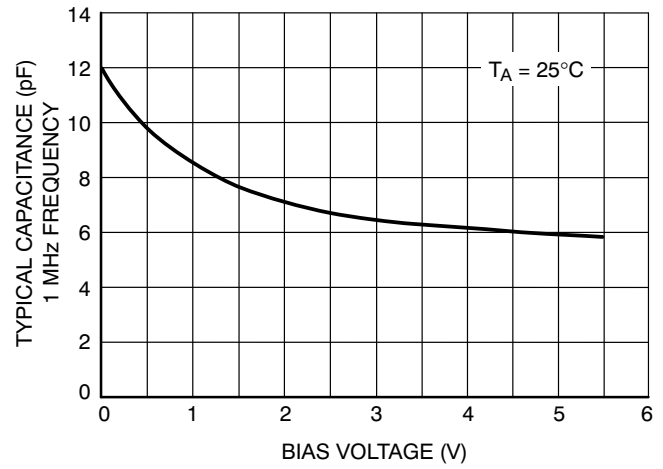


Figure 2. Capacitance

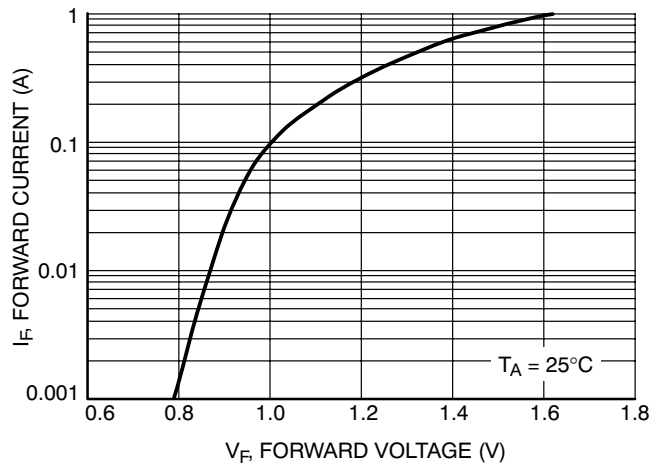
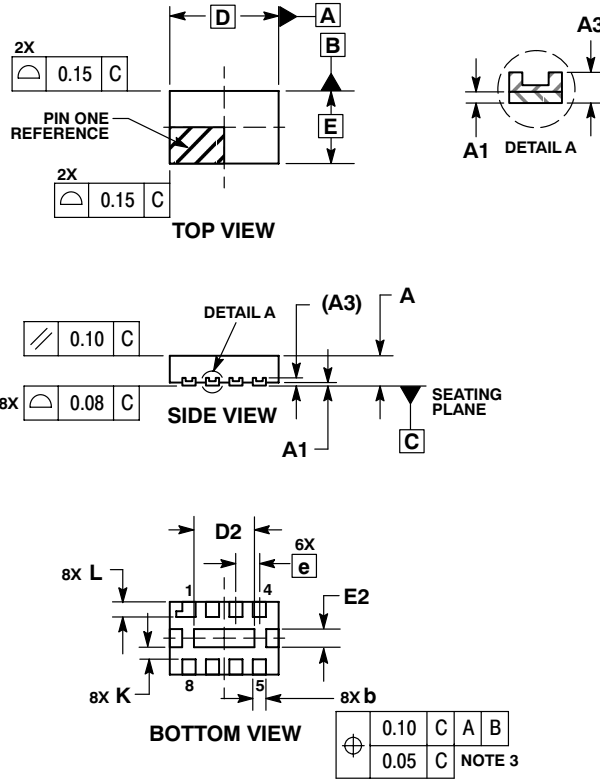


Figure 3. Forward Voltage

NUP8011MU

PACKAGE DIMENSIONS

UDFN8, 1.8x1.2, 0.4P
CASE 517AD-01
ISSUE O



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 0.20 mm FROM TERMINAL.
4. COPLANARITY APPLIES TO THE EXPOSED PAD AS WELL AS THE TERMINALS.

DIM	MILLIMETERS		
	MIN	NOM	MAX
A	0.45	0.50	0.55
A1	0.00	0.03	0.05
A3	0.127 REF		
b	0.15	0.20	0.25
D	1.80 BSC		
D2	0.90	1.00	1.10
E	1.20 BSC		
E2	0.20	0.30	0.40
e	0.40 BSC		
K	0.20	---	---
L	0.20	0.25	0.30

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