NUP8100D

Product Preview

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, medical equipment, 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
- Protection for the following IEC Standards:
  IEC61000−4−2 (ESD) 15 kV (air) 8 kV (contact)
  IEC61000−4−4 (EFT) 40 A (5 / 50 ns)
  EC61000−4−5 (lightning) 12 A (8 / 20 μs)
- Bidirectional Configuration
- 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 in Either Direction
- Minimize Power Consumption of the System
- Minimize PCB Board Space

Applications

- Wireless Communication Circuits
- RS−422, RS−432, and RS−485
- Low Voltage ASICs
- Ethernet − 10/100 BaseT

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

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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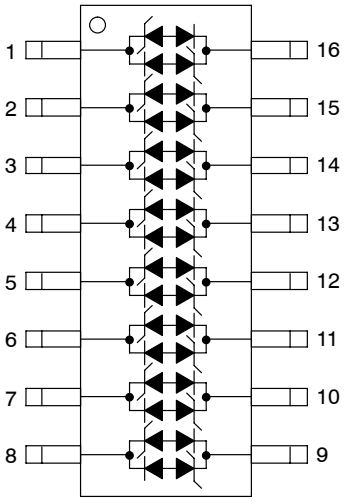
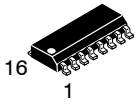
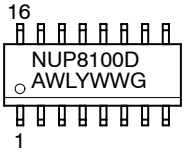




SOIC−16
D SUFFIX
CASE 751B

MARKING DIAGRAM



NUP8100D = Specific Device Code
A = Assembly Location
WL = Wafer Lot
Y = Year
WW = Work Week
G = Pb−Free Package

ORDERING INFORMATION

Device	Package	Shipping
NUP8100DT1G	SOIC−16 (Pb−Free)	2500 / 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.

MAXIMUM RATINGS

Parameter	Symbol	Value	Unit
ESD Discharge IEC61000−4−2 Air Discharge Contact Discharge	V_{PP}	 15 8.0	kV
Peak Power Dissipation (8 x 20 μS @ T_A = 25°C)	P_{pk} (Note 1)	300	W
Operating Temperature Range	T_{OP}	−40 to 85	°C
Storage Temperature Range	T_{STG}	−55 to 150	°C
Maximum Lead Temperature for Soldering Purposes (1.8 in from case for 10 seconds)	T_L	260	°C

Maximum ratings are those values beyond which device damage can occur. Maximum ratings applied to the device are individual stress limit values (not normal operating conditions) and are not valid simultaneously. If these limits are exceeded, device functional operation is not implied, damage may occur and reliability may be affected.

1. Nonrepetitive current per Figure 1.

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

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Maximum Reverse Working Voltage	V_{RWM}				5.0	V
Breakdown Voltage	V_{BR}	I_R = 1.0 mA	6.0			V
Leakage Current	I_R	V_{RWM} = 5.0 V			20	μA
Clamping Voltage	V_c	I_{PP} = 12 A			26	V
Capacitance	C_{line}	f = 1 MHz, V_R = 0 V			15	pF

TYPICAL PERFORMANCE CURVES (T_A= 25°C unless otherwise specified)

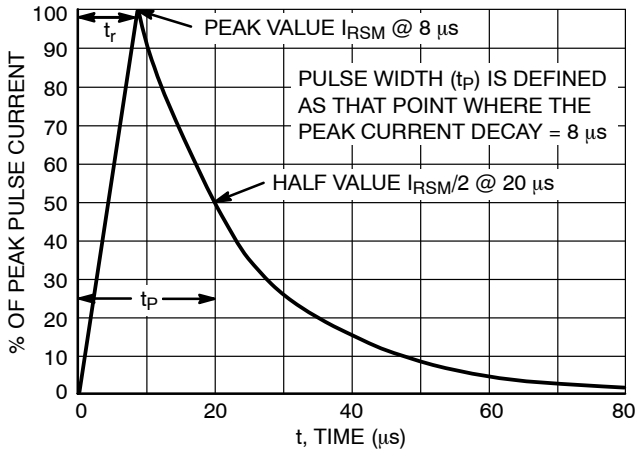
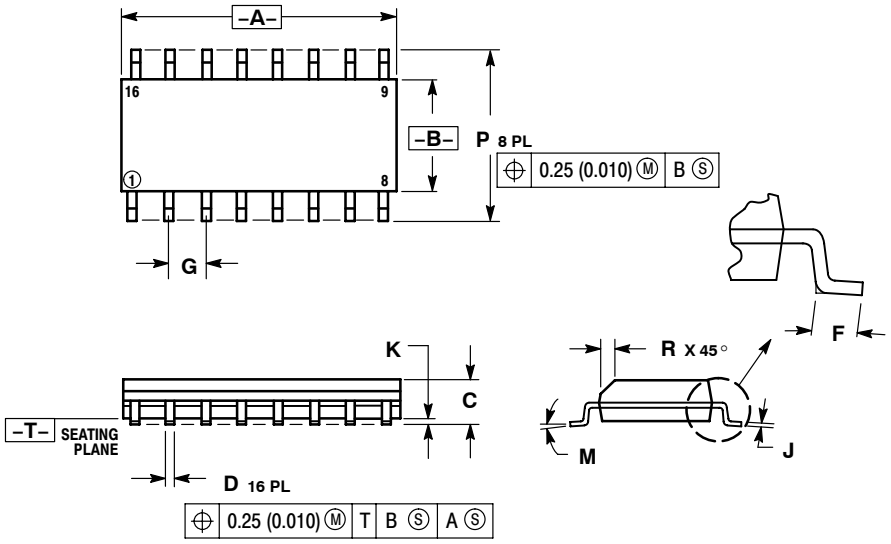


Figure 1. 8 × 20 μs Pulse Waveform

PACKAGE DIMENSIONS

SOIC−16
CASE 751B
ISSUE J



NOTES:
1. DIMENSIONING AND TOLERANCING PER ANSI Y14.5M, 1982.
2. CONTROLLING DIMENSION: MILLIMETER.
3. DIMENSIONS A AND B DO NOT INCLUDE MOLD PROTRUSION.
4. MAXIMUM MOLD PROTRUSION 0.15 (0.006) PER SIDE.
5. DIMENSION D DOES NOT INCLUDE DAMBAR PROTRUSION. ALLOWABLE DAMBAR PROTRUSION SHALL BE 0.127 (0.005) TOTAL IN EXCESS OF THE D DIMENSION AT MAXIMUM MATERIAL CONDITION.

	MILLIMETERS		INCHES	
DIM	MIN	MAX	MIN	MAX
A	9.80	10.00	0.386	0.393
B	3.80	4.00	0.150	0.157
C	1.35	1.75	0.054	0.068
D	0.35	0.49	0.014	0.019
F	0.40	1.25	0.016	0.049
G	1.27 BSC		0.050 BSC	
J	0.19	0.25	0.008	0.009
K	0.10	0.25	0.004	0.009
M	0°	7°	0°	7°
P	5.80	6.20	0.229	0.244
R	0.25	0.50	0.010	0.019

PUBLICATION ORDERING INFORMATION

LITERATURE FULFILLMENT:
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