NUP6101DMR2

Unidirectional TVS Array for High-Speed Data Line Protection

The NUP6101DMR2 transient voltage suppressor is designed to protect equipment attached to up to six high speed communication lines from ESD, EFT, and lightning.

Features:

- Micro8 Package
- Peak Power − 300 Watts 8 x 20 μS
- ESD Rating:
  IEC 61000−4−2 (ESD) 15 kV (air) 8 kV (contact)
  IEC 61000−4−4 (EFT) 40 A (5/5 ns)
  IEC 61000−4−5 (lightning) 23 A (8/20 μs)
- UL Flammability Rating of 94 V−0

Typical Applications:

- High Speed Communication Line Protection
- 5.0 V Data and I/O Lines
- Microprocessor Based Equipment
- LAN/WAN Equipment
- Servers
- Notebook and Desktop PC
- Instrumentation

MAXIMUM RATINGS

Rating	Symbol	Value	Unit
Peak Power Dissipation 8 x 20 μs @ T_A = 25°C (Note 1)	P_{pk}	300	W
Peak Pulse Current 8 x 20 μs @ T_A = 25°C (Note 1)	I_{PP}	17	A
Junction and Storage Temperature Range	T_J, T_{stg}	−55 to +150	°C
Lead Solder Temperature − Maximum 10 Seconds Duration	T_L	260	°C

1. Non−repetitive current pulse 8 x 20 μS exponential decay waveform

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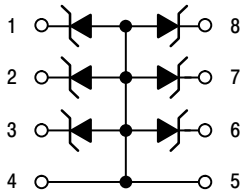
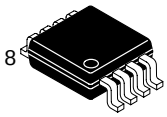
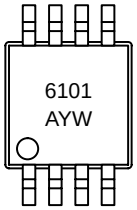
http://onsemi.com



MARKING DIAGRAM

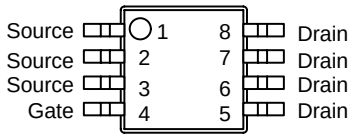


Micro8
CASE 846A



6101 = Device Code
A = Assembly Location
Y = Year
W = Work Week

PIN ASSIGNMENT



Top View

ORDERING INFORMATION

Device	Package	Shipping†
NUP6101DMR2	Micro8	4000 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.

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ELECTRICAL CHARACTERISTICS

Characteristic	Symbol	Min	Typ	Max	Unit
Reverse Stand−off Voltage	V_{BRWM}	−	−	5.0	V
Reverse Breakdown Voltage @ I_t = 1.0 mA	V_{BR}	6.0	−	−	V
Reverse Leakage Current @ V_{RWM} = 5.0 Volts, T = 25°C	I_R	−	−	20	μA
Maximum Clamping Voltage @ I_{PP} = 1.0 A, 8 x 20 μS	V_C	−	−	9.8	V
Maximum Clamping Voltage @ I_{PP} = 5.0 A, 8 x 20 μS	V_C		−	11	V
Maximum Peak Pulse Current	I_{PP}	−	−	17	A
Junction Capacitance Between I/O Pins and Ground @ V_R = 0 V, 1.0 MHz	C_J	−	−	400	pF

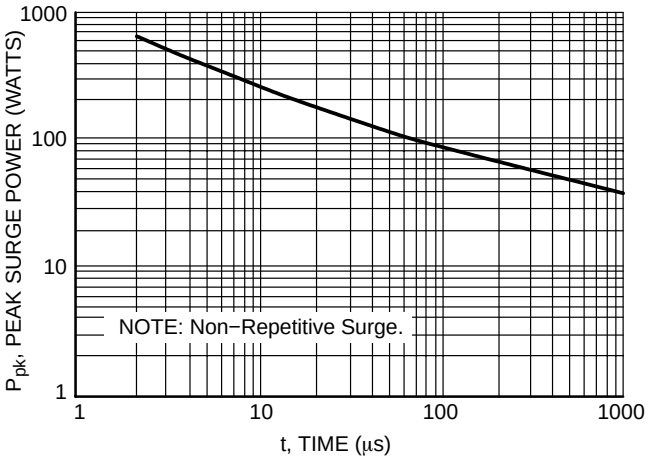


Figure 1. Pulse Width

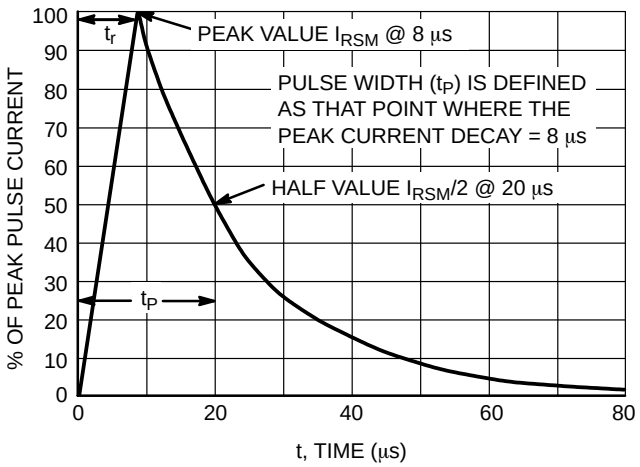


Figure 2. 8 × 20 μs Pulse Waveform

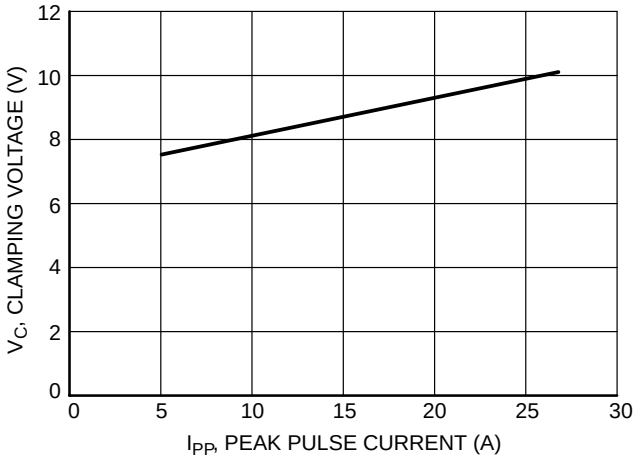


Figure 3. Clamping Voltage versus Peak Pulse Current

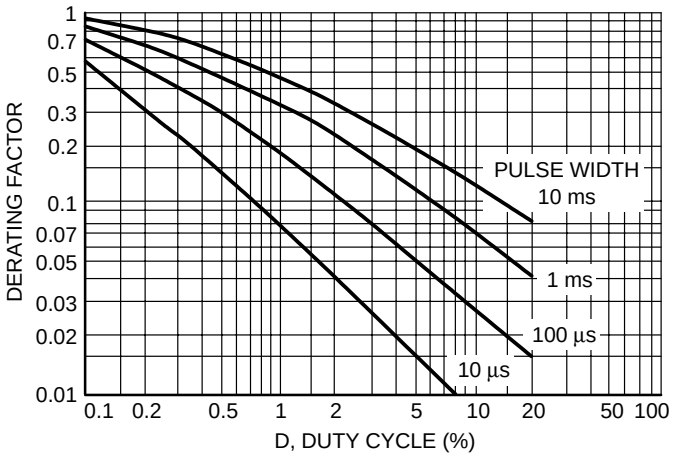


Figure 4. Typical Derating Factor for Duty Cycle

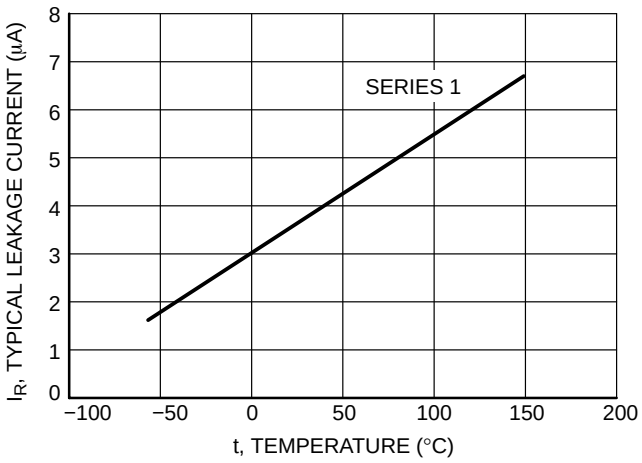
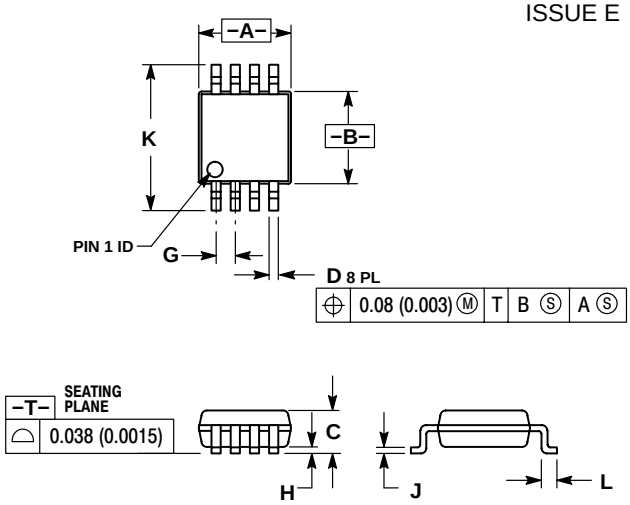


Figure 5. Typical Leakage Current versus Temperature

NUP6101DMR2

PACKAGE DIMENSIONS

Micro8
CASE 846A−02
ISSUE E



NOTES:
1. DIMENSIONING AND TOLERANCING PER ANSI Y14.5M, 1982.
2. CONTROLLING DIMENSION: MILLIMETER.
3. DIMENSION A DOES NOT INCLUDE MOLD FLASH, PROTRUSIONS OR GATE BURRS. MOLD FLASH, PROTRUSIONS OR GATE BURRS SHALL NOT EXCEED 0.15 (0.006) PER SIDE.
4. DIMENSION B DOES NOT INCLUDE INTERLEAD FLASH OR PROTRUSION. INTERLEAD FLASH OR PROTRUSION SHALL NOT EXCEED 0.25 (0.010) PER SIDE.

	MILLIMETERS		INCHES	
DIM	MIN	MAX	MIN	MAX
A	2.90	3.10	0.114	0.122
B	2.90	3.10	0.114	0.122
C	---	1.10	---	0.043
D	0.25	0.40	0.010	0.016
G	0.65 BSC		0.026 BSC	
H	0.05	0.15	0.002	0.006
J	0.13	0.23	0.005	0.009
K	4.75	5.05	0.187	0.199
L	0.40	0.70	0.016	0.028

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