

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 $8 \times 20 \mu\text{s}$
- 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

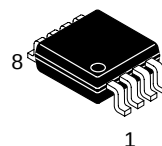
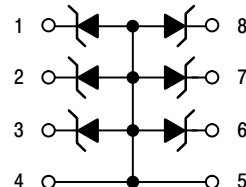
Rating	Symbol	Value	Unit
Peak Power Dissipation $8 \times 20 \mu\text{s}$ @ $T_A = 25^\circ\text{C}$ (Note 1)	P_{pk}	300	W
Peak Pulse Current $8 \times 20 \mu\text{s}$ @ $T_A = 25^\circ\text{C}$ (Note 1)	I_{pp}	17	A
Junction and Storage Temperature Range	T_J, T_{stg}	-55 to +150	$^\circ\text{C}$
Lead Solder Temperature – Maximum 10 Seconds Duration	T_L	260	$^\circ\text{C}$

1. Non-repetitive current pulse $8 \times 20 \mu\text{s}$ exponential decay waveform



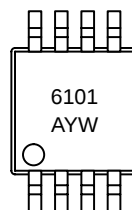
ON Semiconductor™

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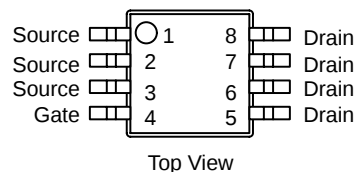
Micro8
CASE 846A

MARKING DIAGRAM



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

PIN ASSIGNMENT



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.

NUP6101DMR2

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, $T = 25^\circ\text{C}$	I_R	–	–	20	μA
Maximum Clamping Voltage @ $I_{PP} = 1.0$ A, $8 \times 20 \mu\text{S}$	V_C	–	–	9.8	V
Maximum Clamping Voltage @ $I_{PP} = 5.0$ A, $8 \times 20 \mu\text{S}$	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

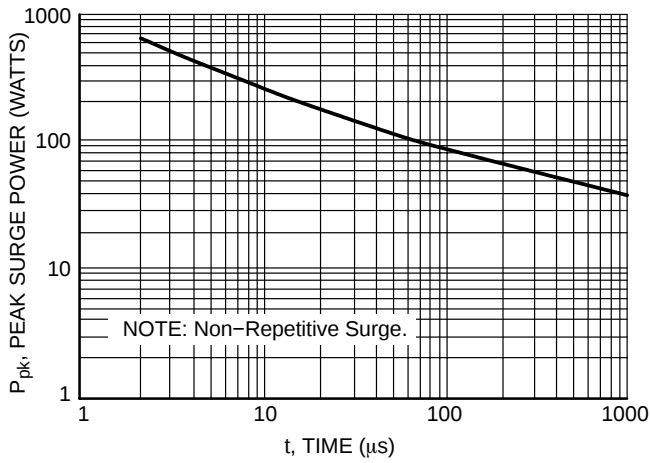


Figure 1. Pulse Width

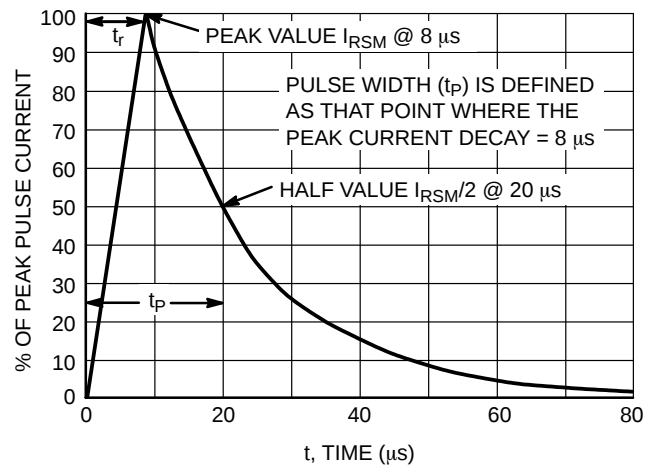


Figure 2. $8 \times 20 \mu\text{s}$ Pulse Waveform

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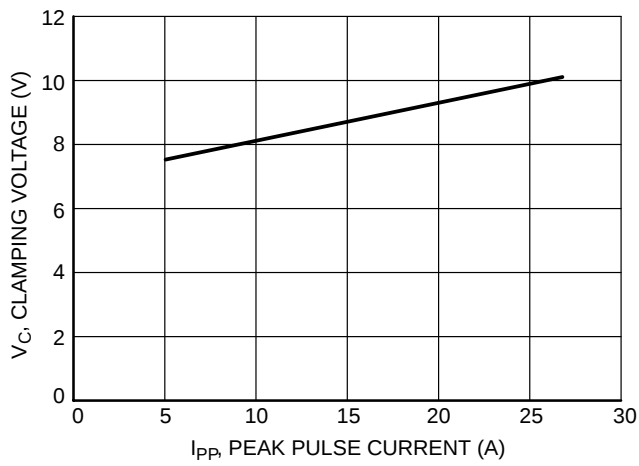


Figure 3. Clamping Voltage versus Peak Pulse Current

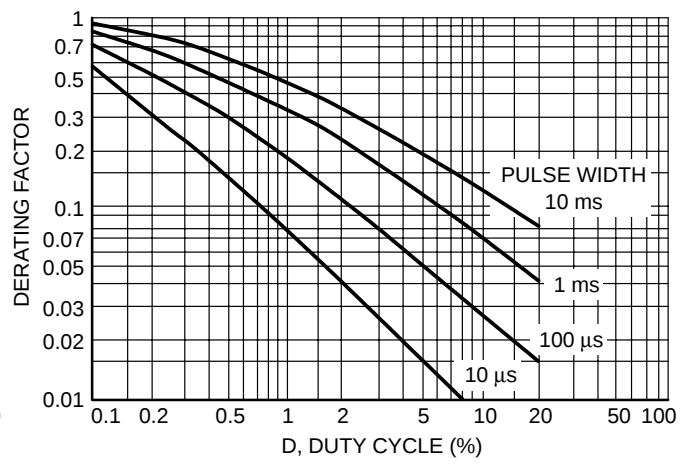


Figure 4. Typical Derating Factor for Duty Cycle

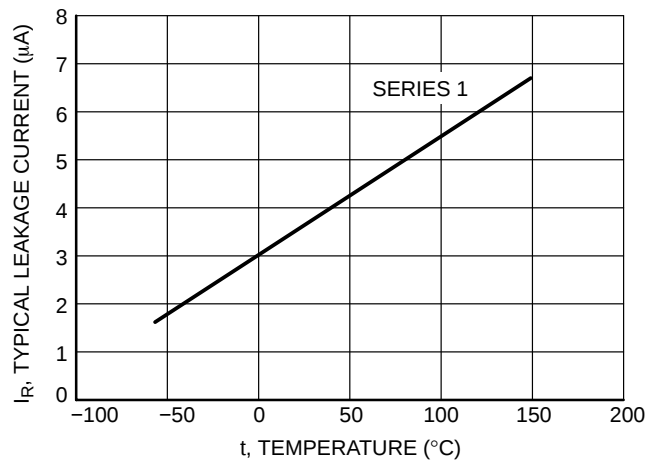
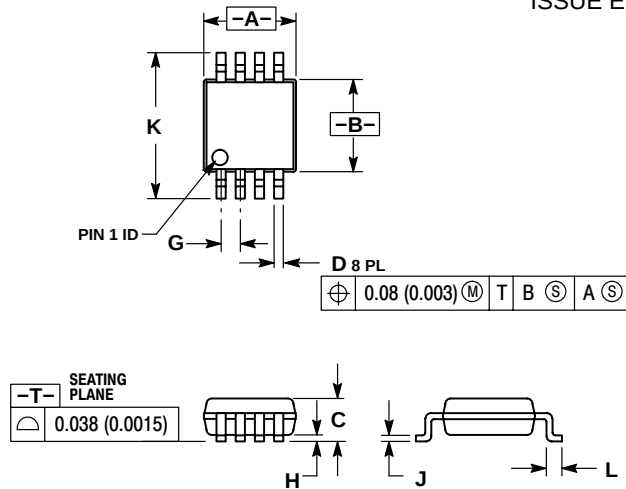


Figure 5. Typical Leakage Current versus Temperature

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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.

DIM	MILLIMETERS		INCHES	
	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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