

# NUP6101DMR2

## Advance Information

# 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  $\mu$ 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 (lighting) 23 A (8/20  $\mu$ s)
- 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

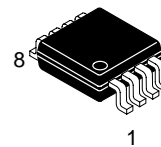
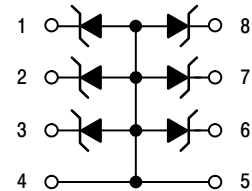
Rating	Symbol	Value	Unit
Peak Power Dissipation 8 x 20 $\mu$ s @ T <sub>A</sub> = 25°C (Note 1)	P <sub>pk</sub>	300	W
Peak Pulse Current 8 x 20 $\mu$ s @ T <sub>A</sub> = 25°C (Note 1)	I <sub>pp</sub>	17	A
Junction and Storage Temperature Range	T <sub>J</sub> , T <sub>stg</sub>	-55 to +150	°C
Lead Solder Temperature – Maximum 10 Seconds Duration	T <sub>L</sub>	260	°C

1. Non-repetitive current pulse 8 x 20  $\mu$ S exponential decay waveform



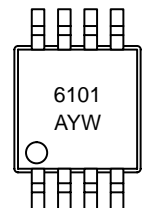
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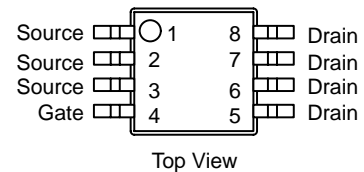
Micro8  
CASE 846A

### 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

This document contains information on a new product. Specifications and information herein are subject to change without notice.

# 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	$\mu\text{A}$
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

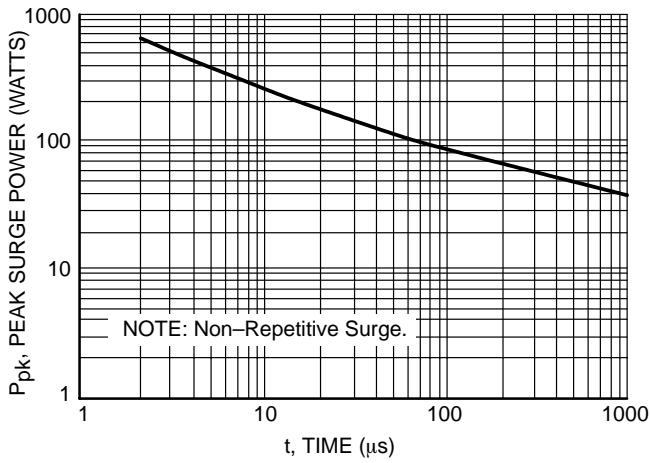


Figure 1. Pulse Width

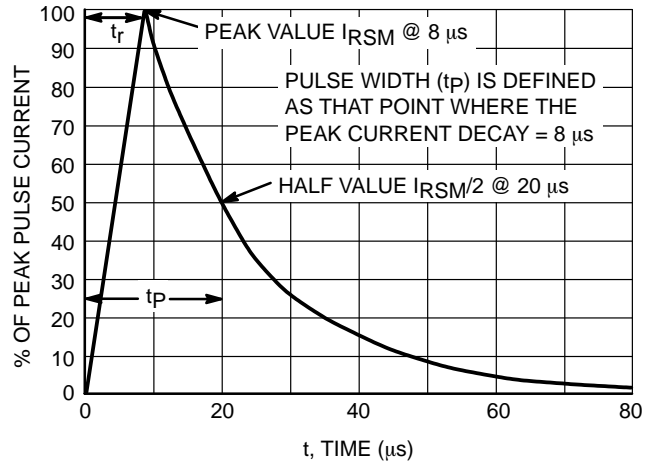
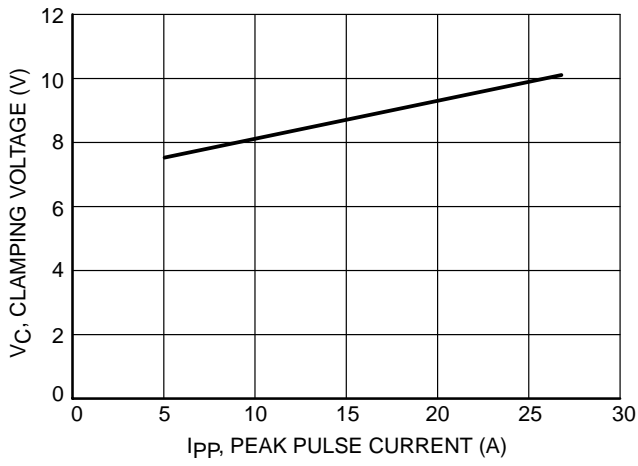
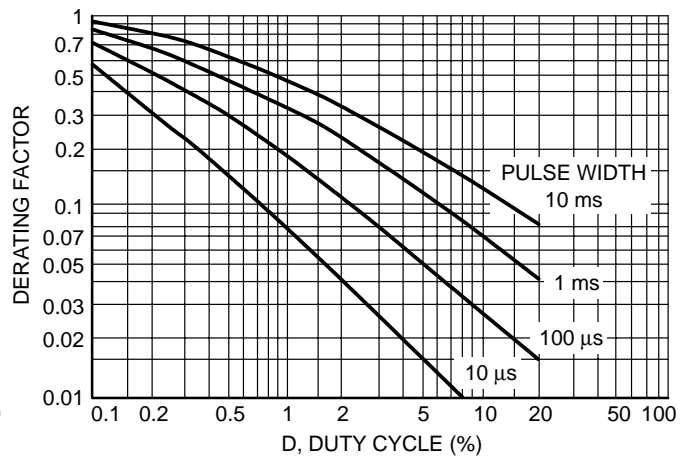


Figure 2.  $8 \times 20 \mu\text{s}$  Pulse Waveform

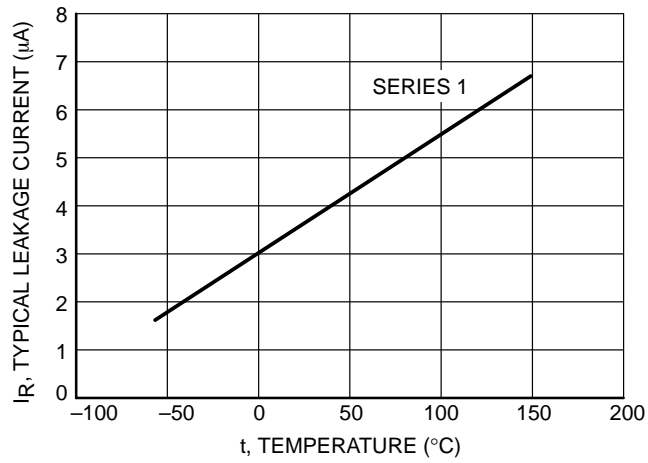
# NUP6101DMR2



**Figure 3. Clamping Voltage versus Peak Pulse Current**



**Figure 4. Typical Derating Factor for Duty Cycle**

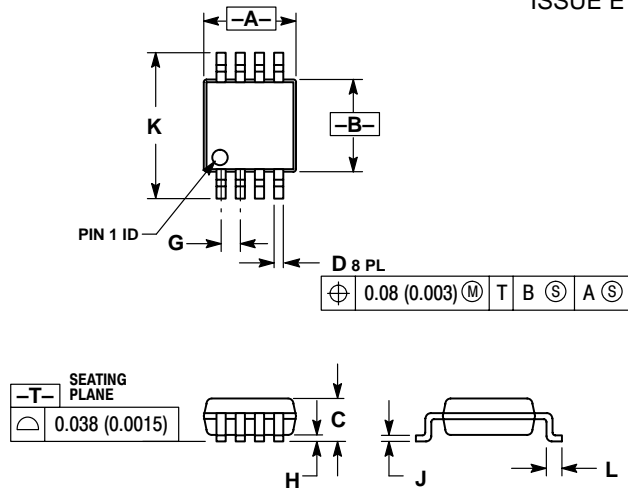


**Figure 5. Typical Leakage Current versus Temperature**

# 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.

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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