

# NUP4302MR6

## Schottky Diode Array for Four Data Line ESD Protection

The NUP4302MR6 is designed to protect high speed data line interface from ESD, EFT and lightning.

### Features

- Very Low Forward Voltage Drop
- Fast Switching
- PN Junction Guard Ring for Transient and ESD Protection
- ESD Rating of Class 3B (Exceeding 8.0 kV) per Human Body Model and Class B (Exceeding 200 V) per Machine Model
- Flammability Rating: UL 94 V-0

### Applications

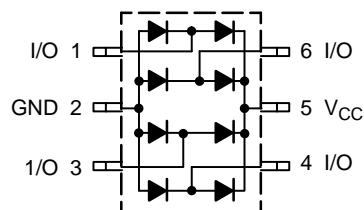
- Ultra High-Speed Switching
- USB 1.1 and 2.0 Power and Data Line Protection
- Digital Video Interface (DVI)
- Monitors and Flat Panel Displays



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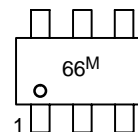
### PIN CONFIGURATION AND SCHEMATIC



### MARKING DIAGRAM



TSOP-6  
CASE 318G  
PLASTIC  
STYLE 12



66 = Specific Device Code  
M = Date Code

### ORDERING INFORMATION

Device	Package	Shipping†
NUP4302MR6T1	TSOP-6	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.

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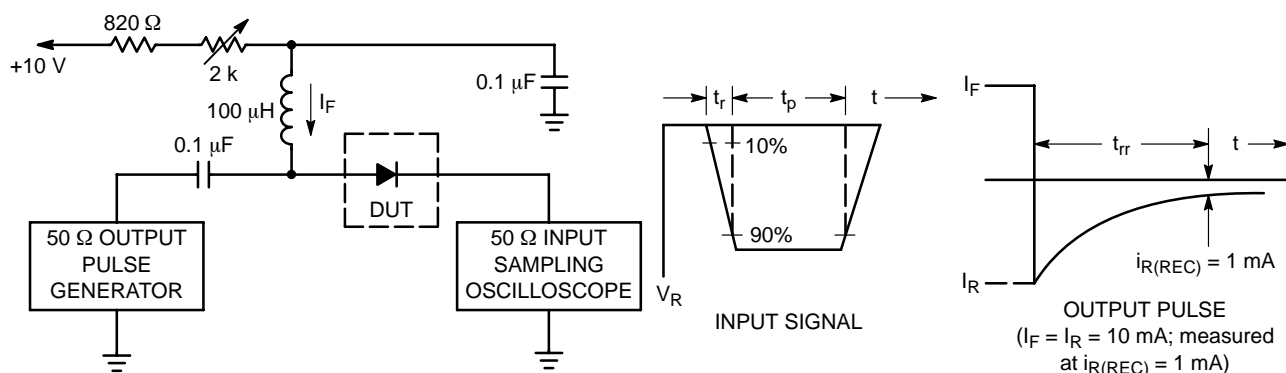
## MAXIMUM RATINGS ( $T_J = 25^\circ\text{C}$ unless otherwise noted)

Rating	Symbol	Value	Unit
Peak Reverse Breakdown Voltage	$V_{BR}$	30	V
Forward Power Dissipation ( $T_A = 25^\circ\text{C}$ )	$P_F$	225	mW
Forward Continuous Current	$I_F$	200	mA
Junction Operating Temperature	$T_J$	$-55$ to $+125$	$^\circ\text{C}$
Storage Temperature Range	$T_{stg}$	$-55$ to $+150$	$^\circ\text{C}$

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.

## ELECTRICAL CHARACTERISTICS ( $T_J = 25^\circ\text{C}$ unless otherwise noted)

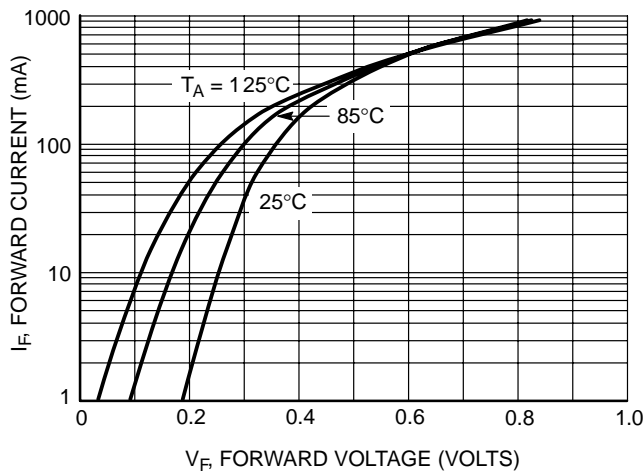
Parameter	Symbol	Conditions	Min	Typ	Max	Unit
Reverse Breakdown Voltage	$V_{BR}$	$I_R = 100\ \mu\text{A}$	30			V
Reverse Leakage	$I_R$	$V_R = 25\ \text{V}$			30	$\mu\text{A}$
Forward Voltage	$V_F$	$I_F = 0.1\ \text{mA}$			0.28	V
Forward Voltage	$V_F$	$I_F = 1.0\ \text{mA}$			0.35	V
Forward Voltage	$V_F$	$I_F = 10\ \text{mA}$			0.45	V
Forward Voltage	$V_F$	$I_F = 100\ \text{mA}$			1.00	V
Total Capacitance	$C_T$	$V_R = 1.0\ \text{V}$ , $f = 1.0\ \text{MHz}$			28	pF
Reverse Recovery Time	$t_{rr}$	$I_F = I_R = 10\ \text{mA}$ , $I_{R(REC)} = 1.0\ \text{mA}$ (Figure 1)			5.0	ns



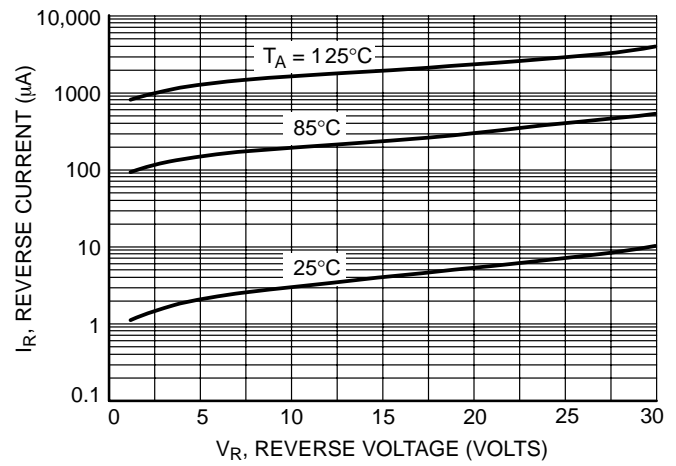
- Notes: 1. A 2.0 kΩ variable resistor adjusted for a Forward Current ( $I_F$ ) of 10 mA.  
 2. Input pulse is adjusted so  $I_{R(\text{peak})}$  is equal to 10 mA.  
 3.  $t_p \gg t_{rr}$

Figure 1. Recovery Time Equivalent Test Circuit

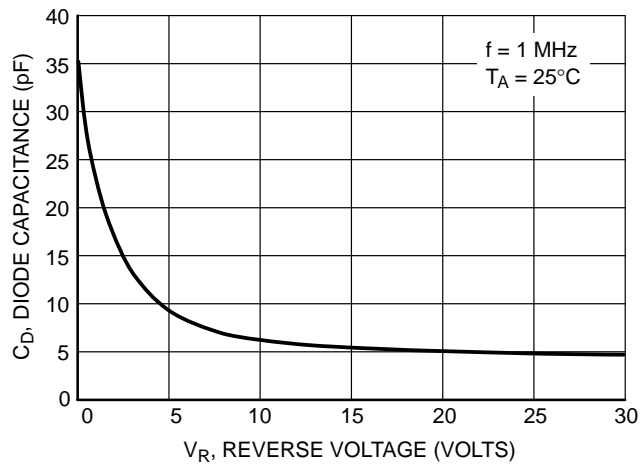
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**Figure 2. Forward Current as a Function of Forward Voltage; Typical Values**



**Figure 3. Reverse Current as a Function of Reverse Voltage; Typical Values**

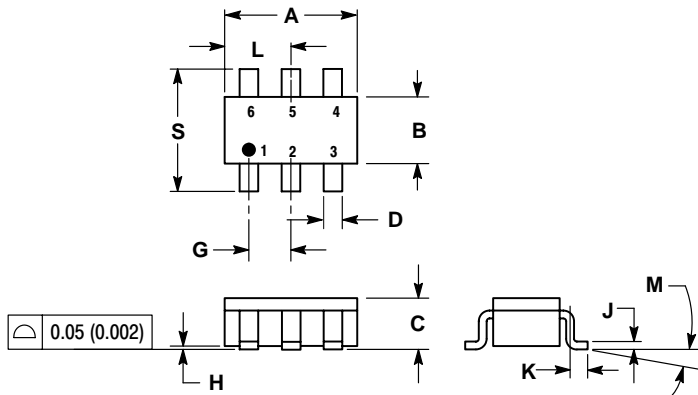


**Figure 4. Diode Capacitance as a Function of Reverse Voltage; Typical Values**

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## PACKAGE DIMENSIONS

### TSOP-6 CASE 318G-02 ISSUE M



#### NOTES:

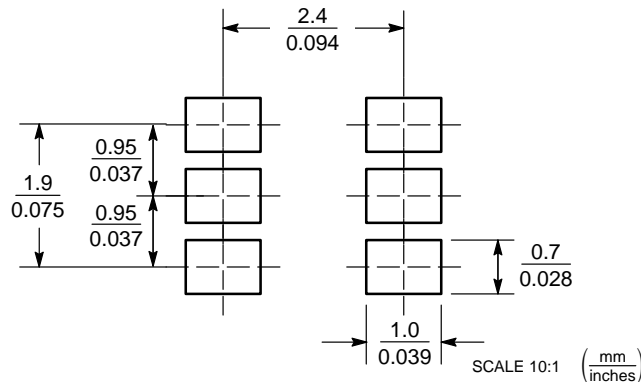
1. DIMENSIONING AND TOLERANCING PER ANSI Y14.5M, 1982.
2. CONTROLLING DIMENSION: MILLIMETER.
3. MAXIMUM LEAD THICKNESS INCLUDES LEAD FINISH THICKNESS. MINIMUM LEAD THICKNESS IS THE MINIMUM THICKNESS OF BASE MATERIAL.
4. DIMENSIONS A AND B DO NOT INCLUDE MOLD FLASH, PROTRUSIONS, OR GATE BURRS.


DIM	MILLIMETERS		INCHES	
	MIN	MAX	MIN	MAX
A	2.90	3.10	0.1142	0.1220
B	1.30	1.70	0.0512	0.0669
C	0.90	1.10	0.0354	0.0433
D	0.25	0.50	0.0098	0.0197
G	0.85	1.05	0.0335	0.0413
H	0.013	0.100	0.0005	0.0040
J	0.10	0.26	0.0040	0.0102
K	0.20	0.60	0.0079	0.0236
L	1.25	1.55	0.0493	0.0610
M	0°	10°	0°	10°
S	2.50	3.00	0.0985	0.1181

#### STYLE 12:

1. I/O
2. GROUND
3. I/O
4. I/O
5. VCC
6. I/O

## SOLDERING FOOTPRINT



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