Toohong

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 lighting.

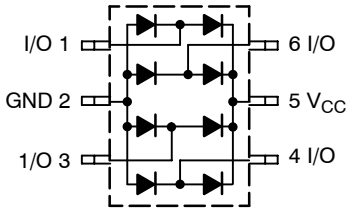
Features

- Very Low Forward Voltage Drop
- Fast Switching
- PN Junction Guard Ring for Transient and ESD Protection
- ESD Rating of Class 3B (Exceeding 16 kV) per Human Body Model and Class C (Exceeding 400 V) per Machine Model
- IEC 61000−4−2 Level 4 ESD Protection
- Flammability Rating: UL 94 V−0
- Pb−Free Package is Available

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

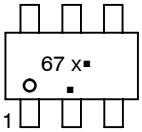
PIN CONFIGURATION AND SCHEMATIC





TSOP−6
CASE 318G
STYLE 12

MARKING DIAGRAM



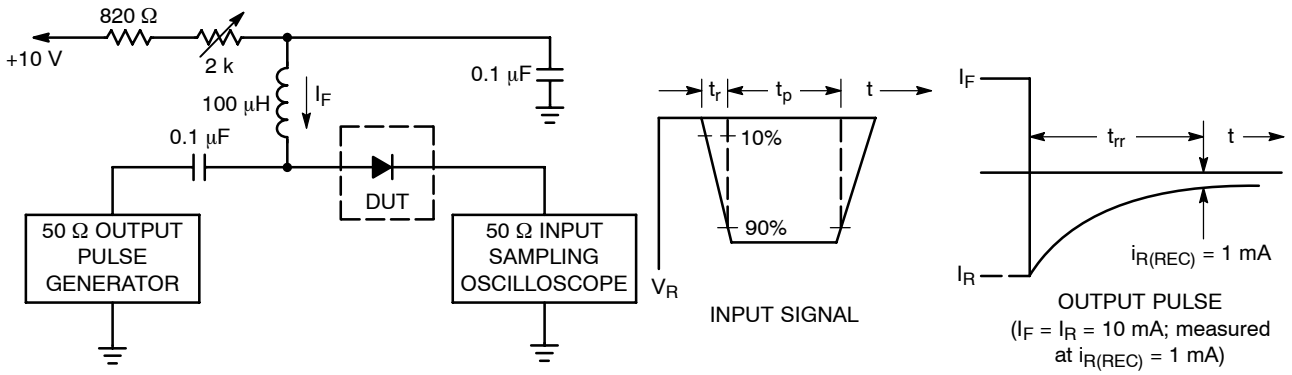
MAXIMUM RATINGS (T_J = 25°C unless otherwise noted)

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

Stresses exceeding Maximum Ratings may damage the device. Maximum Ratings are stress ratings only. Functional operation above the Recommended Operating Conditions is not implied. Extended exposure to stresses above the Recommended Operating Conditions may affect device reliability.

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

Parameter	Symbol	Conditions	Min	Typ	Max	Unit
Reverse Breakdown Voltage	V_{BR}	I_R = 100 μA	30			V
Reverse Leakage	I_R	V_R = 25 V			30	μA
Forward Voltage	V_F	I_F = 0.1 mAdc			0.28	V
Forward Voltage	V_F	I_F = 1.0 mAdc			0.35	V
Forward Voltage	V_F	I_F = 10 mAdc			0.45	V
Forward Voltage	V_F	I_F = 100 mAdc			1.00	V
Total Capacitance	C_T	V_R = 0 V, f = 1.0 MHz, I/O to Ground V_R = 0 V, f = 1.0 MHz, I/O to I/O			28 18	pF
Reverse Recovery Time	t_{rr}	I_F = I_R = 10 mA, $I_{R(REC)}$ = 1.0 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 $I_{R(peak)}$ is equal to 10 mA.
3. $t_p \gg t_{rr}$

Figure 1. Recovery Time Equivalent Test Circuit

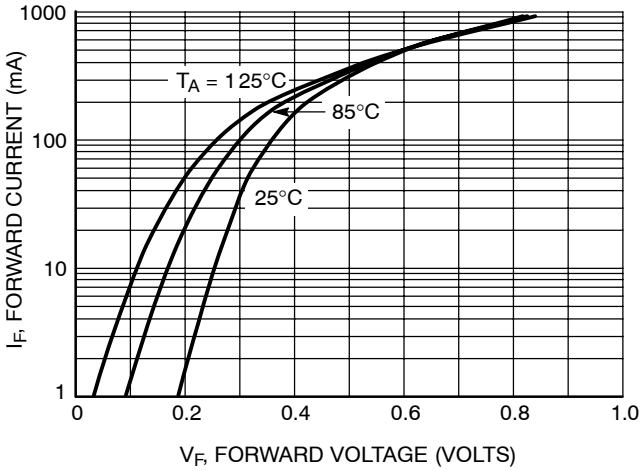


Figure 2. Forward Current as a Function of Forward Voltage; Typical Values

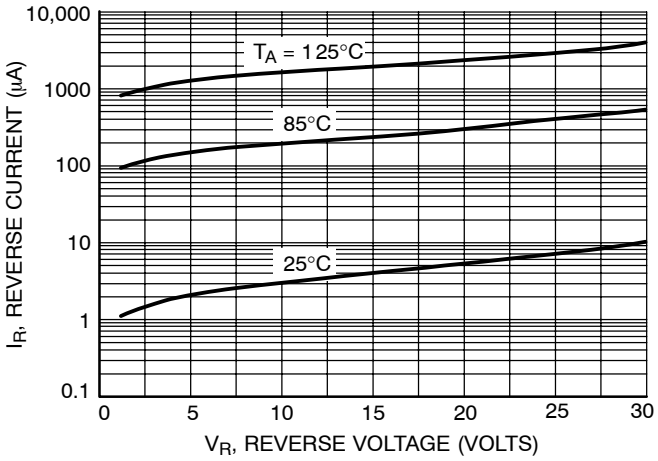


Figure 3. Reverse Current as a Function of Reverse Voltage; Typical Values

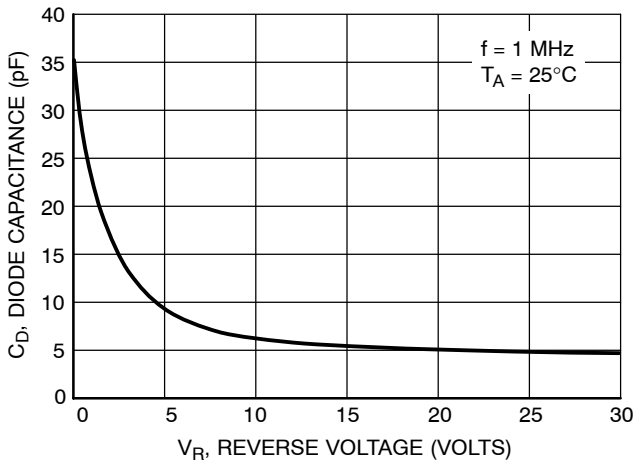


Figure 4. Diode Capacitance as a Function of Reverse Voltage; Typical Values