

## 74F1056

### 8-Bit Schottky Barrier Diode Array

#### General Description

The 74F1056 is an 8-bit Schottky barrier diode array designed to be employed as termination on the inputs to memory bus lines or CLOCK lines. This device is designed to suppress negative transients caused by line reflections, switching noise and crosstalk.

#### Features

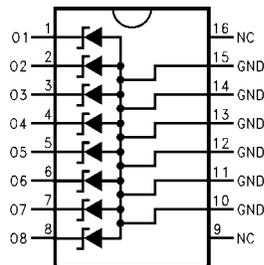
- 8-Bit array structure designed to suppress negative transients
- Guaranteed ESD protection (HBM) in excess of 4 kV
- Common anode shared by all eight diodes
- Broadside pinout for ease of bus routing

#### Ordering Code:

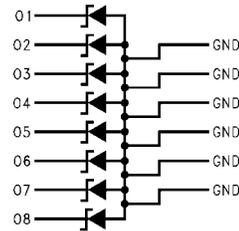
Order Number	Package Number	Package Description
74F1056SC	M16A	16-Lead Small Outline Integrated Circuit (SOIC), JEDEC MS-012, 0.150 Narrow

Devices also available in Tape and Reel. Specify by appending the suffix letter "X" to the ordering code.

#### Connection Diagram



#### Schematic Diagram



**Absolute Maximum Ratings** (Note 1)

Storage Temperature	-65°C to +150°C
Operating Free-Air Temperature	0°C to 70°C
Steady State Reverse Voltage, ( $V_R$ )	7.0V
Continuous Total Power Dissipation at or below 25°C Free-Air Temperature, ( $P_D$ )	750 mW
Continuous Forward Current, ( $I_f$ )	
Any Output Pin to GND	50 mA
Total Through All GND Pins	170 mA
Repetitive Peak Forward Current, $I_{fp}$ (Note 2)	
Any Output Pin to GND	300 mA
Total Through All GND Pins	1.2A
ESD (HBM)	4 kV

**Note 1:** Absolute maximum ratings are valued beyond which the device may be damaged or have its useful life impaired. Functional operation under these conditions is not implied.

**Note 2:** These values apply for the  $t_w \leq 100 \mu s$ , duty cycle  $\leq 20\%$ .

**DC Electrical Characteristics**

Over recommended operating free air temperature range, unless otherwise noted

**SINGLE DIODE OPERATION** (Note 3)

Symbol	Parameter	Min	Typ	Max	Units	Conditions
$V_{BR}$	Reverse Breakdown Voltage	7.0			V	$I_R = 10 \mu A$
$I_R$	Static Reverse Current			10	$\mu A$	$V_R = 7V$
$V_F$	Static Forward Voltage		-0.65 -0.8	-0.85 -1.0	V	$I_F = -16 \text{ mA}$ $I_F = -50 \text{ mA}$
$C_T$	Total Capacitance		5 4	10 8	pF	$V_1 = 0V, f = 1 \text{ MHz}$ $V_1 = 2V, f = 1 \text{ MHz}$

**Note 3:** These tests apply to separate diode operation, diodes not under test are open-circuit.

**MULTIPLE DIODE OPERATION**

Symbol	Parameter	Min	Typ	Max	Units	Conditions
$I_{CR}$	Internal Crosstalk Current		0.2	2	mA	Total GND current = 1.2A (Note 4)

**Note 4:**  $I_{CR}$  is measured under the following conditions: One diode static, all others switching

Switching diodes:  $t_w = 100 \mu s$ ; Static diode:  $V_{IN} = 6V$

Duty cycle = 20%,  $I_f = 200 \text{ mA}$

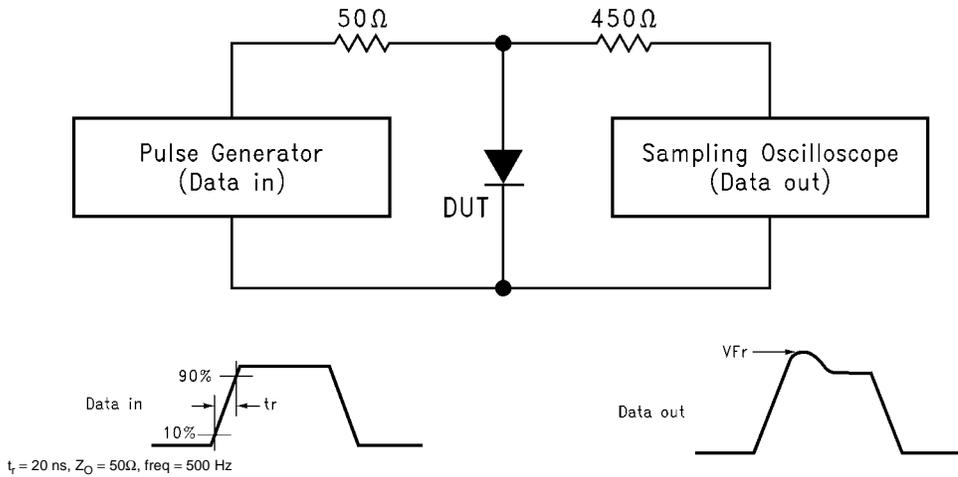
The static diode input current is the internal crosstalk current  $I_{CR}$ .

**AC Electrical Characteristics**

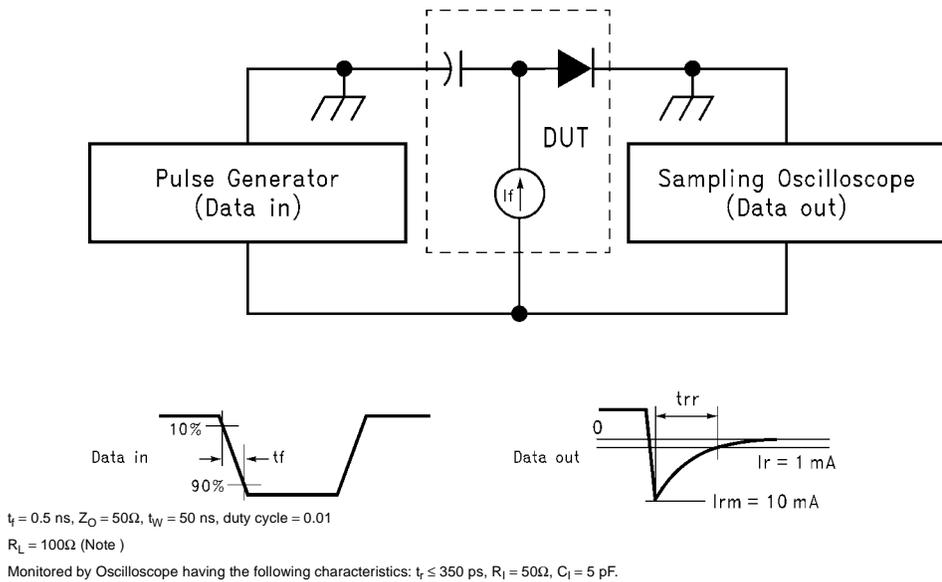
$T_A = 25^\circ C$

Symbol	Parameter	Min	Typ	Max	Units	Conditions	Figure Number
$V_{FR}$	Forward Recovery Voltage		1.25		V	$I_F = 300 \text{ mA}$	Figure 1
$T_{RR}$	Reverse Recovery Time			5.0	ns	$I_F = 10 \text{ mA}, I_R = 1 \text{ mA}$ $R_L = 100\Omega$	Figure 2

**AC Loading and Waveforms**

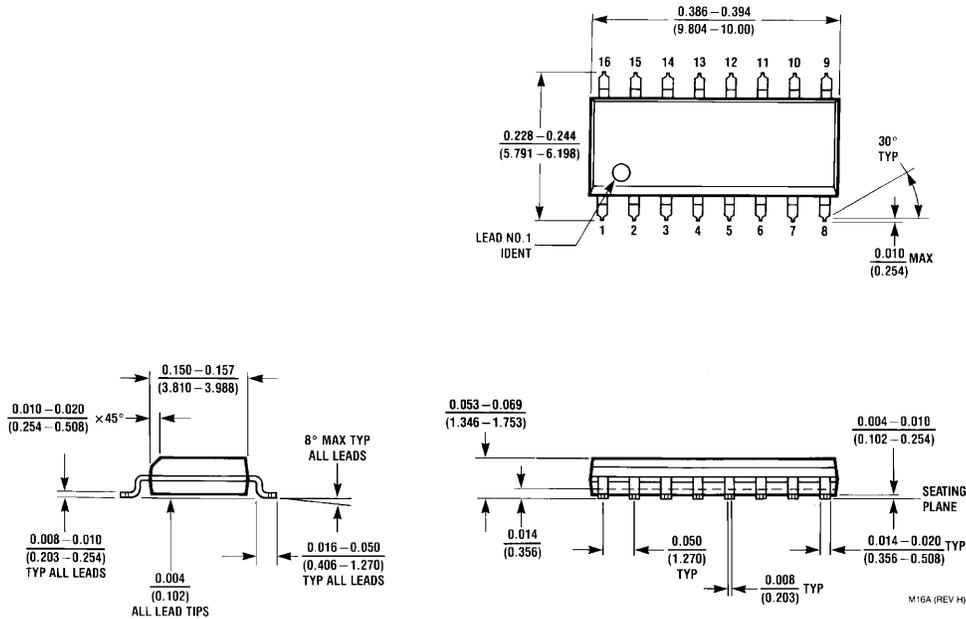


**FIGURE 1. Forward Recovery Voltage**



**FIGURE 2. Reverse Recovery Time**

**Physical Dimensions** inches (millimeters) unless otherwise noted



**16-Lead Small Outline Integrated Circuit (SOIC), JEDEC MS-012, 0.150 Narrow Package Number M16A**

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