

**DESCRIPTION**

These low capacitance diode arrays are multiple, discrete, isolated junctions fabricated by a planar process and mounted in a 16-PIN package for use as steering diodes protecting up to eight I/O ports from ESD, EFT, or surge by directing them either to the positive side of the power supply line or to ground (see figure 1). An external TVS diode may be added between the positive supply line and ground to prevent overvoltage on the supply rail. They may also be used in fast switching core-

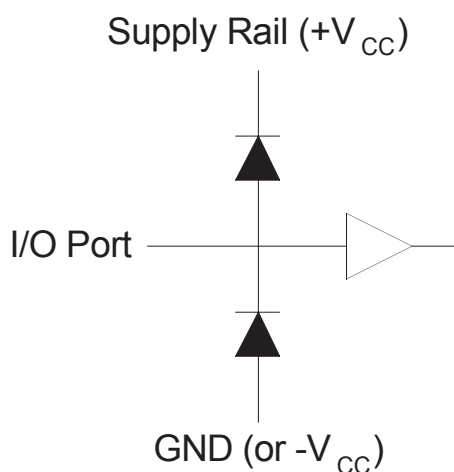
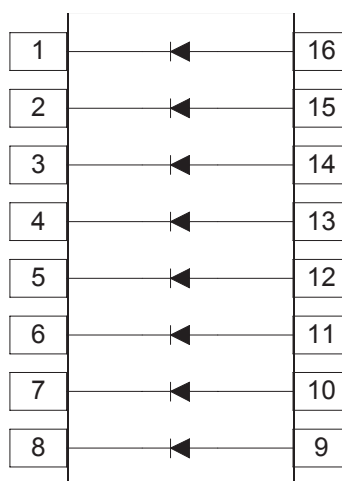
driver applications. This includes computers and peripheral equipment such as magnetic cores, thin-film memories, plated-wire memories, etc., as well as decoding or encoding applications. These arrays offer many advantages of integrated circuits such as high-density packaging and improved reliability. This is a result of fewer pick and place operations, smaller footprint, smaller weight, and elimination of various discrete packages that may not be as user friendly in PC board mounting.

**FEATURES**

- 8 Diode Array/Protects 8 Lines
- Molded 16 Pin DIP
- UL 94V-0 Flammability Classification
- Low Capacitance 1.5 pF per Diode
- Switching Speeds <5 ns
- IEC 61000-4 compatible
  - 61000-4-2 (ESD): Air 15kV, contact - 8 kV
  - 61000-4-4 (EFT): 40A - 5/50 ns
  - 61000-4-5 (surge): 12A, 8/20  $\mu$ s

**APPLICATIONS**

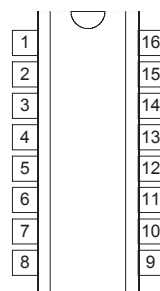
- High Frequency Data Lines
- RS-232 & RS-422 Interface Networks
- Ethernet: 10 Base-T
- Computer I/O Ports
- LAN
- Switching Core Drivers

**PRODUCT HIGHLIGHT**

**STEERING DIODE  
CONFIGURATION**

**CIRCUIT  
CONFIGURATION**

**IMPORTANT:** For the most current data, consult *Microsemi's* website at: <http://www.microsemi.com>

**MAD1108****Switching Diode Array , Steering Diode TVS Array™****PRODUCTION DATASHEET****ABSOLUTE MAXIMUM RATINGS**

Operating Temperature ..... -55°C to +150°C  
 Storage Temperature ..... -55°C to +150°C  
 Forward Surge Current:  
     2 Amps ..... 8.3 ms  
     12 Amps ..... 8/20  $\mu$ s  
 Continuous Forward Current ..... 400 mA (one diode)  
 Power Dissipation (PD) ..... 1500 mW (total)

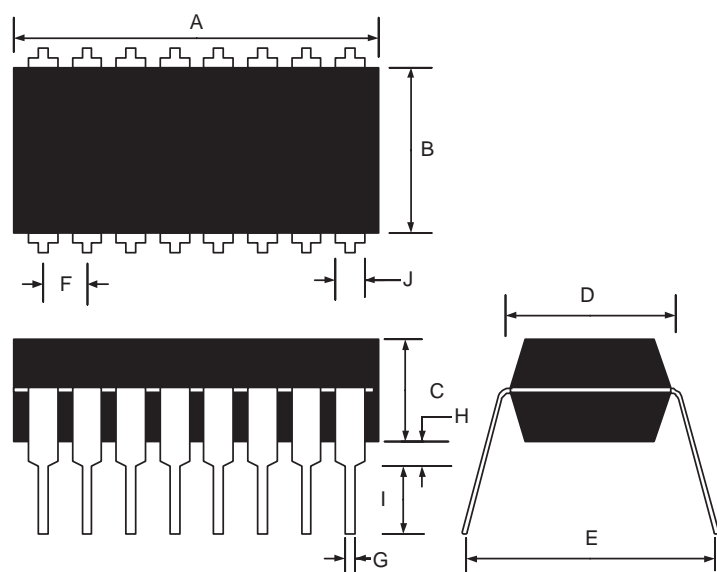
**PACKAGE LAYOUT****ELECTRICAL CHARACTERISTICS**

Parameter	Symbol	Test Conditions	MAD1108			Units
			Min	Typ	Max	
Breakdown Voltage	$V_{BR}$	$I_{BR}=100\text{mA}$	90			V
Working Peak Reverse Voltage	$V_{RWM}$				75	V
Leakage Current	$I_R$	$T_A = 25^\circ\text{C}; @V_R=20$			0.200	mA
Leakage Current	$I_R$	$T_A = 150^\circ\text{C}; @V_R=20$			300	mA
Capacitance	C	@0V		1.5		pF
Reverse Recovery Time	$t_{rr}$				5.0	ns
Forward Voltage	$V_F$	$I_F = 10\text{mA}$			1.00	V
Forward Voltage	$V_F$	$I_F = 100\text{mA}$			1.20	V

**SYMBOLS & DEFINITIONS**

Symbol	Definition
$V_{BR}$	Minimum Breakdown Voltage: The minimum voltage the device will exhibit at a specified current.
$V_{RWM}$	Working Peak Reverse Voltage: The maximum peak voltage that can be applied over the operating temperature range.
$V_F$	Maximum Forward Voltage: The maximum forward voltage the device will exhibit at a specified current.
$I_R$	Maximum Leakage Current: The maximum leakage current that will flow at the specified voltage and temperature.
C	Capacitance: The capacitance of the TVS as defined @ 0 volts at a frequency of 1 MHz and stated in picofarads.

## PACKAGE OUTLINE



## Note:

Dimensions do not include mold flash or protrusions; these shall not exceed 0.155mm(0.006") on any side.  
Lead dimension shall not include solder coverage

Dim	Millimeters		Inches	
	Min	Max	Min	Max
A	18.80	19.81	0.740	0.780
B	5.969	6.731	0.235	0.265
C	3.048	3.556	0.120	0.140
D	6.858	8.382	0.270	0.330
E	8.128	9.652	0.320	0.380
F	2.540 BSC		0.100 BSC	
G	0.381	0.533	0.015	0.021
H	0.431	0.584	0.017	0.023
I	3.556	4.064	0.140	0.160
J	1.016	1.778	0.040	0.070

## MECHANICAL AND PACKAGING

- Weight =0.997gms. (approx)
- Marking: Logo, device number data code
- Pin #1 to the left of the indent on top of package
- Carrier tubes; 25 pcs (standard)

This datasheet has been download from:

[www.datasheetcatalog.com](http://www.datasheetcatalog.com)

Datasheets for electronics components.