

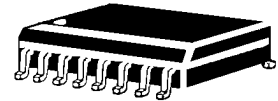
**Switching Diode Array  
Steering Diode TVS Array™**

**PRODUCT PREVIEW**

**DESCRIPTION**

These low capacitance diode arrays are multiple, discrete, isolated junctions fabricated by a planar process and mounted in an SOIC package for use 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. They may also be used as steering diodes for protecting up to four 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. 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 SM packages that may not be as user friendly in PC board mounting.

**SWITCHING AND STEERING ARRAY**



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

**FEATURES**

- 8 Diode Array
- SOIC 16-pin Surface Mount Package
- UL 94V-0 Flamability Classification
- Low Capacitance 1.5 pF per diode
- Switching speeds less than 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

**PACKAGING**

- Tape & Reel per EIA Standard 481
- 13 inch reel; 2,500 pieces (OPTIONAL)
- Carrier tubes; 48 pcs (STANDARD)

**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 ( $P_D$ ): 1500 mW (total)

**MECHANICAL**

- Molded SO-16 Surface Mount
- Weight 0.128 grams (approximate)
- Marking: Logo, device number, date code
- Pin #1 defined by dot on top of package

**ELECTRICAL CHARACTERISTICS PER LINE @ 25°C Unless otherwise specified**

PART NUMBER	BREAKDOWN VOLTAGE $V_{BR}$ @ $I_{BR} = 100\mu A$	WORKING PEAK REVERSE VOLTAGE $V_{RWM}$	LEAKAGE CURRENT $I_R$ $T_A = 25^\circ C$		LEAKAGE CURRENT $I_R$ $T_A = 150^\circ C$		CAPACITANCE C @ 0 V	REVERSE RECOVERY TIME $t_{rr}$	FORWARD VOLTAGE $V_F$ $I_F = 10 mA$	FORWARD VOLTAGE $V_F$ $I_F = 100 mA$
	V	V	MAX	@ $V_R$	MAX	@ $V_R$	pF	ns	V	V
MMAD1108	90	75	.200	20	300	20	1.5	5.0	1.00	1.20

**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.

**CIRCUIT DIAGRAM**

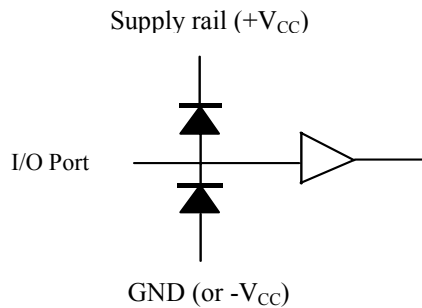


figure 1

**PIN CONFIGURATION**

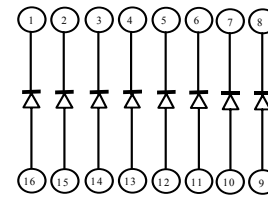
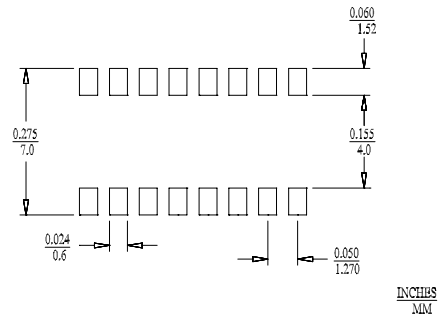
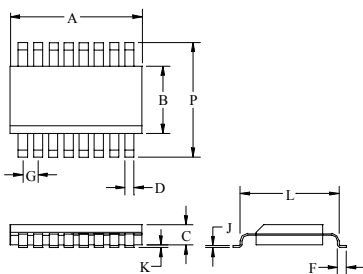
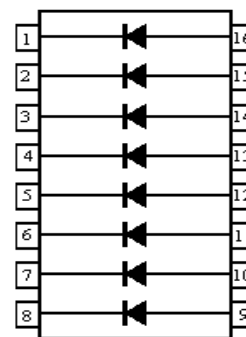


figure 2

**OUTLINE AND SCHEMATIC**



**PAD LAYOUT**



DIM	INCHES		MILLIMETERS	
	MIN	MAX	MIN	MAX
A	0.358	0.398	9.09	10.10
B	0.150	0.158	3.81	4.01
C	0.053	0.069	1.35	1.75
D	0.011	0.021	0.28	0.53
F	0.016	0.050	0.41	1.27
G	0.050 BSC		1.27 BSC	
J	0.006	0.010	0.15	0.25
K	0.004	0.008	0.10	0.20
L	0.189	0.206	4.80	5.23
P	0.228	0.244	5.79	6.19

**OUTLINE**

**SCHEMATIC**