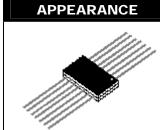


6100A

Isolated Diode Array with HiRel MQ, MX, MV, and SP Screening Options

## DESCRIPTION

These low capacitance diode arrays are multiple, discrete, isolated junctions fabricated by a planar process and mounted in a 14-PIN package for use as steering diodes protecting up to seven 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 coredriver 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.



**14-PIN Ceramic** Flat Pack

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

## FEATURES

- Hermetic Ceramic Package ٠
- Isolated Diodes to Eliminate Cross-Talk Voltages High Breakdown Voltage  $V_{BR}$  > 75 V at 5  $\mu$ A .
- Low Leakage I<sub>R</sub>< 100 nA at 40 V •
- Low Capacitance C < 4.0 pF ٠
- Switching Speeds less than 10 ns
- Options for screening in accordance with MIL-PRF-19500/474 for JAN, JANTX, JANTXV, and JANS are available by adding MQ, MX, MV, or SP prefixes respectively to part numbers. For example, designate MX6100A for a JANTX screen.

## MAXIMUM RATINGS

- Reverse Breakdown Voltage of 75 Vdc (Note 1 & 2) •
- Continuous Forward Current of 300 mA dc (Note 1 & 3) •
- Peak Surge Current (tp=1/120 s) of 500 mA dc (Note 1) .
- 400 mW Power Dissipation per Junction @ 25°C .
- 500 mW Power Dissipation per Package @ 25°C (Note 4) •
- Operating Junction Temperature range -65 to +150°C .
- Storage Temperature range of -65 to +150°C
  - NOTE 1: Each Diode NOTE 2: Pulsed: P<sub>W</sub> = 100 ms max; duty cycle <20%
    - NOTE 3: Derate at 2.4 mA/°C above +25°C
    - NOTE 4: Derate at 4.0 mW/°C above +25°C

- **MECHANICAL AND PACKAGING**
- 14-PIN Ceramic Flat Pack
- Weight 0.29 grams (approximate)
- Marking: Logo, part number, date code and dot identifying pin #1

**APPLICATIONS / BENEFITS** 

RS-232 & RS-422 Interface Networks

IEC 61000-4 Compatible (See Circuit in

61000-4-4 (EFT): 40 A - 5/50 ns

61000-4-5 (surge): 12 A, 8/20 µs

61000-4-2 (ESD): Air 15 kV, contact - 8 kV

**High Frequency Data Lines** 

Ethernet: 10 Base T

Computer I/O Ports

Switching Core Drivers

•

•

LAN

Figure 1)

Carrier Tubes; 19 pcs (standard)

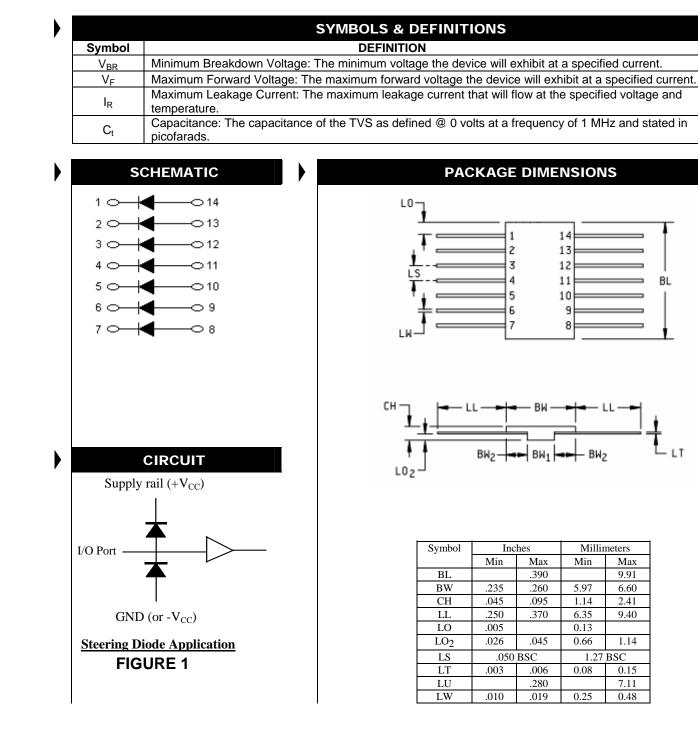
ELECTRICAL CHARACTERISTICS (Per Diode) @ 25°C unless otherwise specified								
PART	MAXIMUM FORWARD VOLTAGE V <sub>F1</sub> I <sub>F</sub> = 100 mA (Note 1)	MAXIMUM REVERSE CURRENT I <sub>R1</sub> V <sub>R</sub> = 40 V	MAXIMUM REVERSE CURRENT I <sub>R2</sub> V <sub>R</sub> = 20 V	MAXIMUM CAPACITANCE (PIN TO PIN) $C_t$ $V_R = 0 V$ F = 1 MHz	MAXIMUM FORWARD RECOVERY TIME t <sub>fr</sub> I <sub>F</sub> = 100 mA	MAXIMUM REVERSE RECOVERY TIME trr $I_F = I_R = 10 \text{ mAdc}$ $i_{rr} = 1 \text{ mAdc}$ $R_1 = 100 \text{ ohms}$	MAXIMUM FORWARD VOLTAGE MATCH V <sub>F5</sub> I <sub>F</sub> = 10 mA	6100A
NUMBER	V	μΑ	nA	pF	ns	ns	mV	
6100A	1	0.1	25	4.0	15	10	5	] 🦯

**NOTE 1:** Pulsed:  $P_W = 300 \ \mu s \ +/-50 \ \mu s$ , duty cycle <2%, 90  $\mu s$  after leading edge.

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BL

LT

Max

9.91

6.60

2.41

9.40

1.14

0.15

7.11

0.48

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