

# Silicon Diode Array

## **1N5774**

60V/300mA

# DATASHEET

OEM – Fairchild

Source: Fairchild Databook 1978

# 1N5768 • 1N5770 • 1N5772 • 1N5774

## MONOLITHIC AIR ISOLATED DIODE ARRAYS

- BV... 60 V @ 10  $\mu$ A
- I<sub>R</sub>... 100 nA @ 40 V
- V<sub>R</sub>... 1 V @ 100 mA

### ABSOLUTE MAXIMUM RATINGS (Note 1)

#### Temperatures

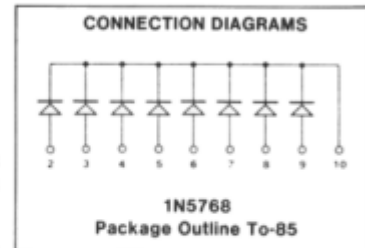
Storage Temperature Range	-65°C to +200°C
Junction Operating Temperature Range	-65°C to +200°C

#### Maximum Power Dissipation

Maximum Total Dissipation at T <sub>A</sub> = 25°C	500 mW
Linear Derating Factor	4.0 mW / °C above 25°C

#### Maximum Currents

I <sub>O</sub>	Average Rectified Current (each diode)	300 mA
	Linear Derating Factor	2.4 mA / °C above 25°C
I <sub>FSM</sub>	Peak Forward Surge Current Pulse Width = 8.3 ms	500 mA



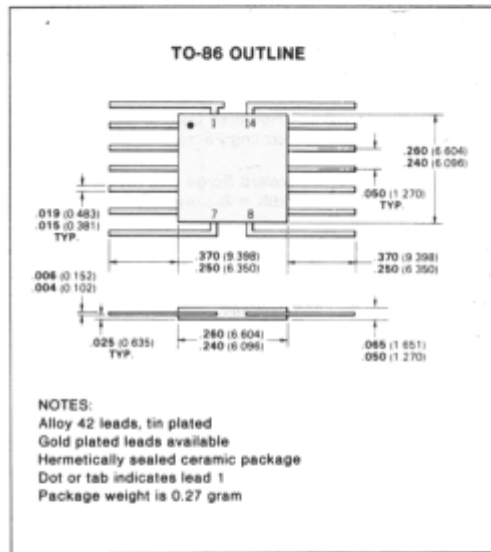
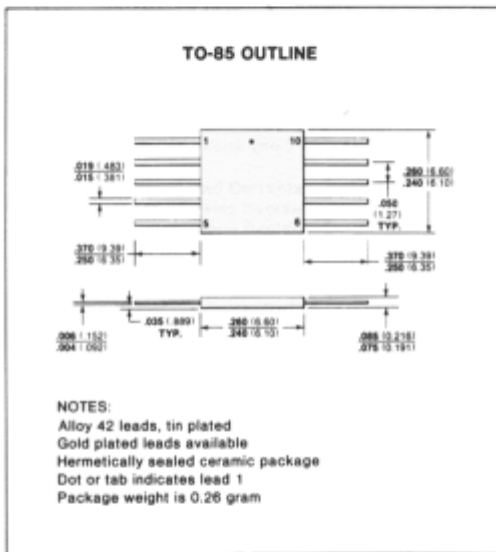
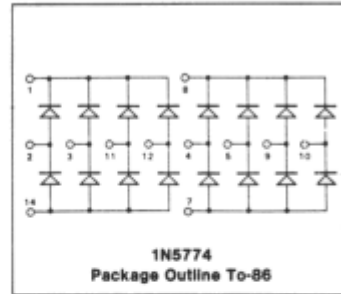
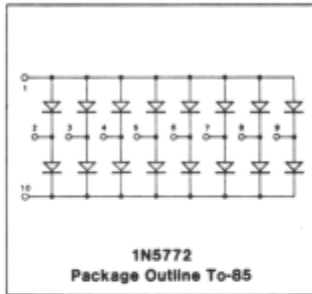
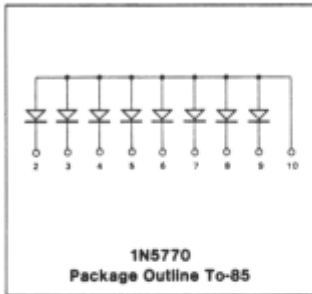
### ELECTRICAL CHARACTERISTICS (25°C Ambient Temperature unless otherwise noted)

SYMBOL	CHARACTERISTIC	MIN	MAX	UNITS	TEST CONDITIONS
BV	Breakdown Voltage	60		V	I <sub>R</sub> = 10 $\mu$ A, Pulse Width = 100 $\mu$ s, Duty Cycle < 20%
V <sub>F</sub>	Forward Voltage		1.0 1.5	V	I <sub>F</sub> = 100 mA I <sub>F</sub> = 500 mA, Pulse Width = 300 ns, Duty Cycle = 2%
V <sub>FX</sub>	Forward Voltage		1.0	V	I <sub>F</sub> = 25 mA; I <sub>F</sub> = 25 mA for each of the other Diodes in the Test Section (Note 3)
V <sub>FM</sub>	Peak Forward Voltage		5.0	V	I <sub>F</sub> = 500 mA, Pulse Width = 150 ns, Duty Cycle $\leq$ 2%
I <sub>R</sub>	Reverse Current		100 50	nA $\mu$ A	V <sub>R</sub> = 40 V V <sub>R</sub> = 40 V, T <sub>A</sub> = +150°C
I <sub>RX</sub>	Reverse Current		10	$\mu$ A	V <sub>R</sub> = 40 V, I <sub>F</sub> = 25 mA for each of the other Diodes in the Test Section (Note 3)
I <sub>Ri</sub>	Isolation Current 1N5772, 1N5774		0.8	$\mu$ A	V <sub>R</sub> = 40 V (Note 4)
C	Pin-to-Pin Capacitance (Note 2) 1N5768 1N5770, 1N5772, 1N5774		4.0 8.0	pF pF	V <sub>R</sub> = 0 V, f = 1.0 MHz V <sub>R</sub> = 0 V, f = 1.0 MHz
t <sub>fr</sub>	Forward Recovery Time (Note 5)		40	ns	I <sub>F</sub> = 500 mA, R <sub>S</sub> = 10 $\Omega$ , V <sub>fr</sub> = 1.8 V, t <sub>r</sub> = 15 ns Max
t <sub>rr</sub>	Reverse Recovery Time (Note 5)		20	ns	I <sub>F</sub> = 200 mA, I <sub>r</sub> = 200 mA, R <sub>L</sub> = 100 $\Omega$ , I <sub>rr</sub> = 20 mA

#### NOTES:

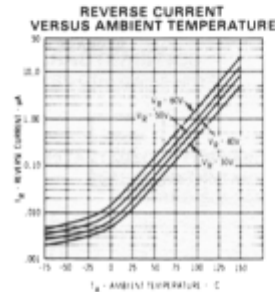
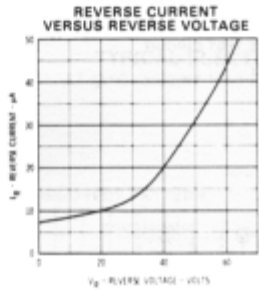
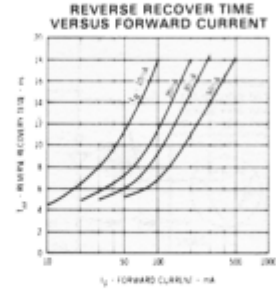
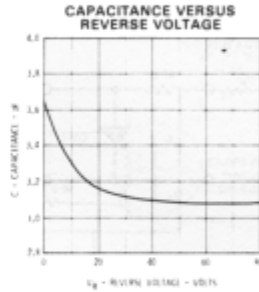
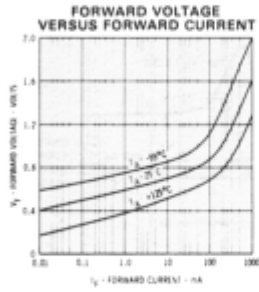
- The maximum ratings are limiting values above which life or satisfactory performance may be impaired.
- This parameter is the total pin-to-pin capacitance measured across each diode. This does not necessarily represent actual diode capacitance since other diode interconnections can contribute additional capacitance.
- Each common anode section and/or common cathode section tested separately.
- The isolation current shall be measured between any two interconnect pins of adjacent parallel sets of diodes with all other pins open circuited.
- For Product Family characteristic curves and Test Circuits, refer to Chapter 4, D15.

FAIRCHILD • DIODE ARRAYS



**CURVE SET NUMBER D15**  
**AIR-ISOLATED MONOLITHIC DIODE ARRAY**

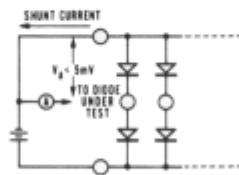
**TYPICAL ELECTRICAL CHARACTERISTIC CURVES**  
 AT 25°C AMBIENT TEMPERATURE UNLESS OTHERWISE NOTED



**TEST CIRCUITS**

To measure reverse current of an individual diode, the following test circuits are used:

**COMMON CATHODE DIODES**



**COMMON ANODE DIODES**

