

Silicon Diode Array

1N5770

60V/300mA

DATASHEET

OEM – Fairchild

Source: Fairchild Databook 1978

1N5768 • 1N5770 • 1N5772 • 1N5774

MONOLITHIC AIR ISOLATED DIODE ARRAYS

- BV... 60 V @ 10 μ A
- I_R ... 100 nA @ 40 V
- V_R ... 1 V @ 100 mA

ABSOLUTE MAXIMUM RATINGS (Note 1)

Temperatures

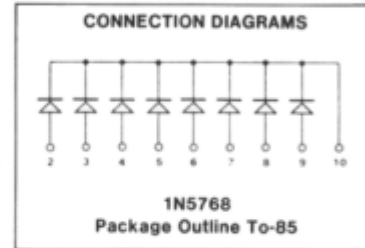
Storage Temperature Range	-65°C to +200°C
Junction Operating Temperature Range	-65°C to +200°C

Maximum Power Dissipation

Maximum Total Dissipation at $T_A = 25^\circ\text{C}$	500 mW
Linear Derating Factor	4.0 mW / °C above 25°C

Maximum Currents

I_O	Average Rectified Current (each diode)	300 mA
	Linear Derating Factor	2.4 mA / °C above 25°C
I_{FSM}	Peak Forward Surge Current Pulse Width = 8.3 ms	500 mA



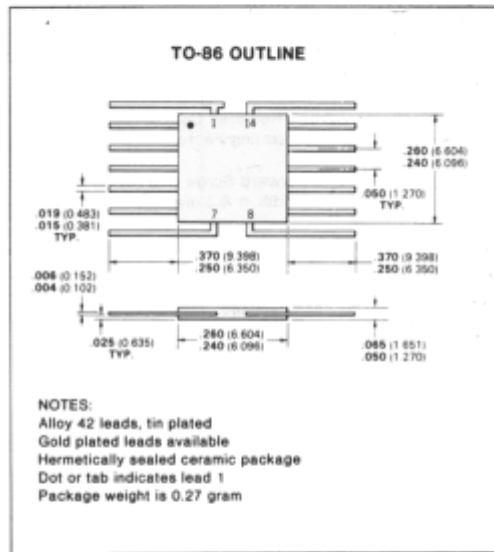
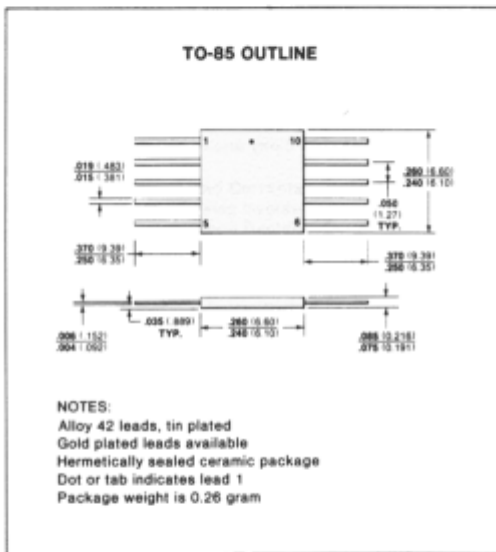
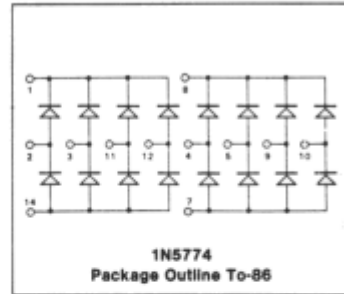
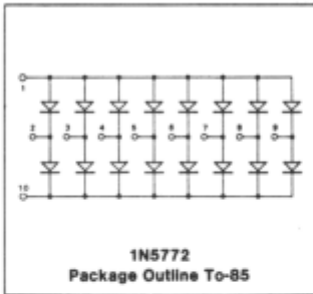
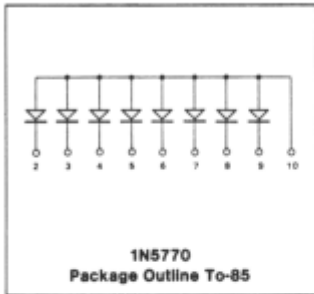
ELECTRICAL CHARACTERISTICS (25°C Ambient Temperature unless otherwise noted)

SYMBOL	CHARACTERISTIC	MIN	MAX	UNITS	TEST CONDITIONS
BV	Breakdown Voltage	60		V	$I_R = 10 \mu\text{A}$, Pulse Width = 100 μs , Duty Cycle < 20%
V_F	Forward Voltage		1.0 1.5	V V	$I_F = 100 \text{ mA}$ $I_F = 500 \text{ mA}$, Pulse Width = 300 ns, Duty Cycle = 2%
V_{FX}	Forward Voltage		1.0	V	$I_F = 25 \text{ mA}$; $I_F = 25 \text{ mA}$ for each of the other Diodes in the Test Section (Note 3)
V_{FM}	Peak Forward Voltage		5.0	V	$I_F = 500 \text{ mA}$, Pulse Width = 150 ns, Duty Cycle $\leq 2\%$
I_R	Reverse Current		100 50	nA μA	$V_R = 40 \text{ V}$ $V_R = 40 \text{ V}$, $T_A = +150^\circ\text{C}$
I_{RX}	Reverse Current		10	μA	$V_R = 40 \text{ V}$, $I_F = 25 \text{ mA}$ for each of the other Diodes in the Test Section (Note 3)
I_{Ri}	Isolation Current 1N5772, 1N5774		0.8	μA	$V_R = 40 \text{ V}$ (Note 4)
C	Pin-to-Pin Capacitance (Note 2) 1N5768 1N5770, 1N5772, 1N5774		4.0 8.0	pF pF	$V_R = 0 \text{ V}$, $f = 1.0 \text{ MHz}$ $V_R = 0 \text{ V}$, $f = 1.0 \text{ MHz}$
t_{fr}	Forward Recovery Time (Note 5)		40	ns	$I_I = 500 \text{ mA}$, $R_S = 10 \Omega$, $V_{fr} = 1.8 \text{ V}$, $t_r = 15 \text{ ns Max}$
t_{rr}	Reverse Recovery Time (Note 5)		20	ns	$I_I = 200 \text{ mA}$, $I_r = 200 \text{ mA}$, $R_L = 100 \Omega$, $I_{rr} = 20 \text{ mA}$

NOTES:

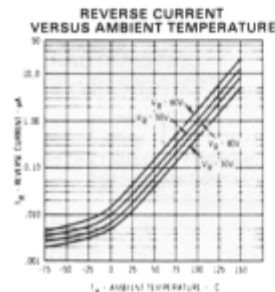
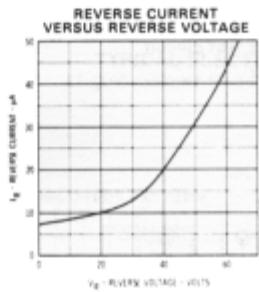
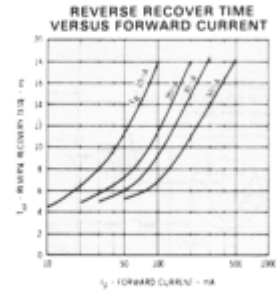
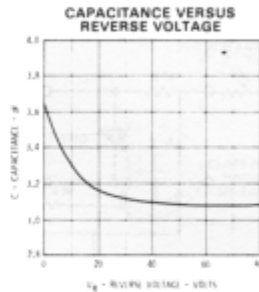
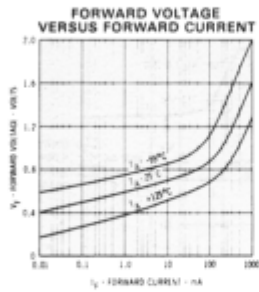
- The maximum ratings are limiting values above which life or satisfactory performance may be impaired.
- This parameter is the total pin-to-pin capacitance measured across each diode. This does not necessarily represent actual diode capacitance since other diode interconnections can contribute additional 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

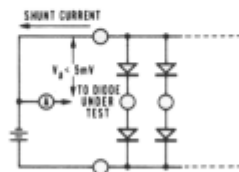
TYPICAL ELECTRICAL CHARACTERISTIC CURVES
 AT 25°C AMBIENT TEMPERATURE UNLESS OTHERWISE NOTED



TEST CIRCUITS

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

COMMON CATHODE DIODES



COMMON ANODE DIODES

