Silicon – Diode Array

FSA2621M

7 Diode Array

350mA

DATASHEET

OEM – Fairchild

Source: Fairchild Databook 1978

Datasheet Rev. 1.3 – 03/19 - data without warranty / liability

FSA2619M·FSA2619P·FSA2620M·FSA2620P FSA2621M·FSA2719M·FSA2719P·FSA2720M FSA2720P·FSA2721M

PLANAR AIR-ISOLATED MONOLITHIC DIODE ARRAYS

- **C . . . 2.0 pF (MAX) FSA2719 Series**
- **ΔV_F . . . 15 mV (MAX) @ 10 mA**

ABSOLUTE MAXIMUM RATINGS (Notes 1 and 5)

Temperatures

Storage Temperature Range (M Suffix)	−55° C to +200° C
(P Suffix)	−55° C to +150° C
Maximum Junction Operating Temperature	+150° C
Lead Temperature	+260° C

Power Dissipation (Note 2)

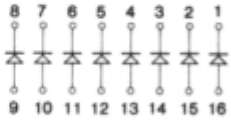
Maximum Dissipation per Junction at 25° C Ambient	400 mW
Maximum Dissipation per Package at 25° C Ambient	650 mW
Linear Derating factor (from 25° C) Junction	3.2 mW / °C
Package	5.2 mW / °C

Maximum Voltage and Currents

WIV	Working Inverse Voltage FSA2619 (Note 5)	75 V
	FSA2719	50 V
I_F	Continuous Forward Current	350 mA
I_f (surge)	Peak Forward Surge Current	
	Pulse Width = 1.0 s	1.0 A
	Pulse Width = 1.0 μs	2.0 A

CONNECTION DIAGRAMS

FSA2619 • FSA2719



See Package Outlines

6B (Ceramic DIP)	FSA2619M FSA2719M
9B (Plastic DIP)	FSA2619P FSA2719P

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

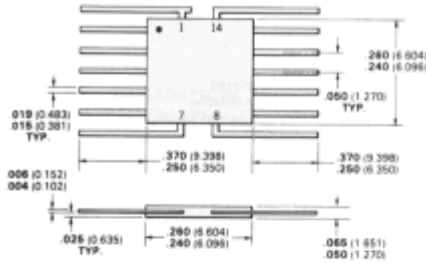
SYMBOL	CHARACTERISTIC		MIN	MAX	UNITS	TEST CONDITIONS
BV	Breakdown Voltage (Note 5)	FSA2719	75		V	I_R = 5.0 μA
		FSA2619	100		V	I_R = 100 μA
I_R	Reverse Current	FSA2619		5.0	μA	V_R = 75 V
				25	nA	V_R = 20 V
				50	μA	V_R = 20 V, T_A = 150° C
		FSA2719		100	nA	V_R = 50 V
				100	μA	V_R = 50 V, T_A = 150° C
V_F	Forward Voltage (Note 3)			1.0	V	I_F = 10 mA
t_{rr}	Reverse Recovery Time (Note 6)	FSA2619		5.0	ns	$I_f = I_r$ = 10 mA, I_{rr} = 1.0 mA
		FSA2719		6.0	ns	$I_f = I_r$ = 10 mA, I_{rr} = 1.0 mA
C	Capacitance (Note 6)	FSA2619		4.0	pF	V_R = 0
		FSA2719		2.0	pF	V_R = 0
ΔV_F	Forward Voltage Match (Note 6)			15	mV	I_F = 10 mA
t_{fr}	Forward Recovery Time (Note 6)	FSA2619		20	ns	50 mA Peak square wave, 0.1 μs Pulse Width, 5.0 kHz - 100 kHz
V_{FM}	Peak Forward Voltage (Note 6)	FSA2719		3.0	V	I_F = 100 mA, $t_r \leq$ 10 ns
RE	Rectification Efficiency		45		%	V_f = 2 V rms, f = 100 MHz

NOTES:
1. These ratings are limiting values above which life or satisfactory performance may be impaired.
2. These are steady state limits. The factory should be consulted on applications involving pulsed or low duty-cycle operation.
3. V_F is measured using an 8 ms pulse.
4. See test circuits (Note 6) for measurement of reverse current of an individual diode.
5. FSA2619 denotes series FSA2619M/P, FSA2620M/P and FSA2621M;
   FSA2719 denotes series FSA2719M/P, FSA2720M/P and FSA2721M.
6. For product family characteristics curves and test circuits, refer to Chapter 4, D15.

*UNCONNECTED

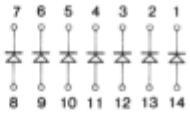
FAIRCHILD • DIODE ARRAYS

TO-86 OUTLINE



NOTES:
Alloy 42 leads, tin plated
Gold plated leads available
Hermetically sealed ceramic package
Dot or tab indicates lead 1
Package weight is 0.27 gram

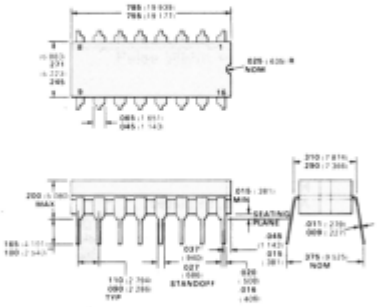
FSA2620 • FSA2621
FSA2720 • FSA2721



See Package Outlines

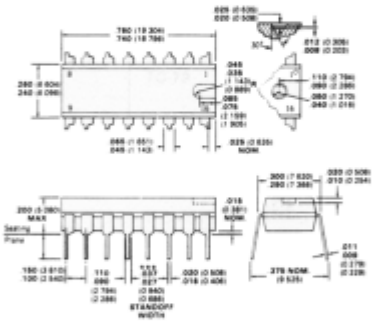
TO-116-2 (Ceramic)	FSA2620M FSA2720M
TO-116 (Plastic)	FSA2620P FSA2720P
TO-86	FSA2621M FSA2721M

6B OUTLINE



NOTES:
Alloy 42 pins, tin plated
Gold plated pins available
Hermetically sealed ceramic package
Pins are intended for insertion in hole rows on .300" centers (7.62)
They are purposely shipped with "positive" misalignment to facilitate insertion
Board-drilling dimensions should equal your practice for .020 inch diameter pin (0.51)
Package weight is 2.0 grams
*The .037–.027 dimension does not apply to the corner pins

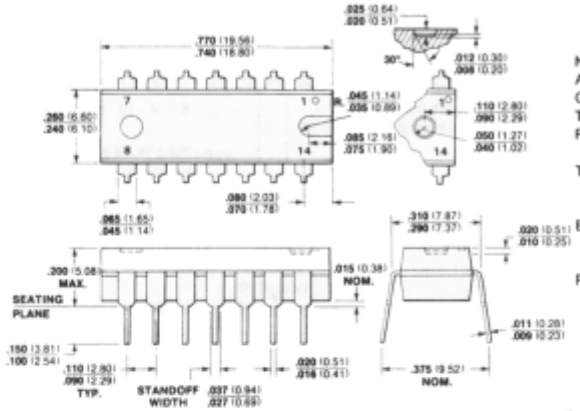
9B OUTLINE



NOTES:
Alloy 42 pins, tin plated
Gold plated pins available
Transfer moulded DM-6B plastic package
Pins are intended for insertion in hole rows on .300" (7.62) centers
Leads purposely have a "positive" misalignment to facilitate insertion
Board-drilling dimensions should equal your practice for .020 inch (0.51) diameter pin
***The .037–.027 (0.94–0.69) dimension does not apply to the corner pins

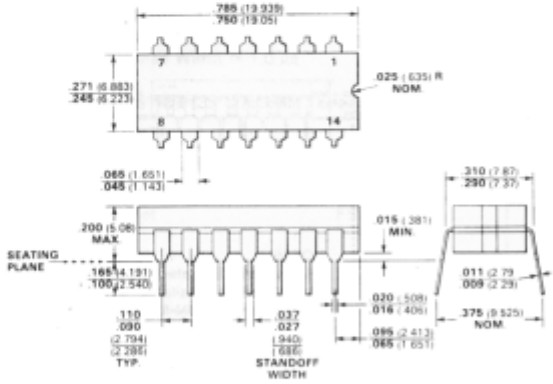
FAIRCHILD • ZENER DIODES

TO-116 OUTLINE



NOTES:
Alloy 42 pins, tin plated
Gold plated pins available
Transfer moulded DM-6B plastic package
Pins are intended for insertion in hole rows on .300" (7.62) centers
They are purposely shipped with "positive" misalignment to facilitate insertion
Board drilling dimensions should equal your practice for .020 (0.508) inch diameter pin
Package weight is 0.9 gram

TO-116-2 OUTLINE



NOTES:
Alloy 42 pins, tin plated
Gold plated pins available
Hermetically sealed ceramic package
Pins are intended for insertion in hole rows on .300" (7.620) centers
They are purposely shipped with "positive" misalignment to facilitate insertion
Board-drilling dimensions should equal your practice for .020" (0.508) diameter pin
Package weight is 2.0 grams

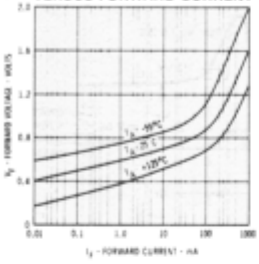
CURVE SET NUMBER D15

AIR-ISOLATED MONOLITHIC DIODE ARRAY

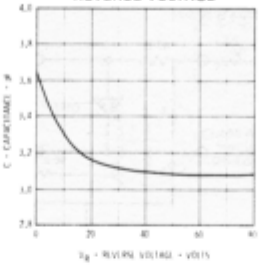
TYPICAL ELECTRICAL CHARACTERISTIC CURVES

AT 25°C AMBIENT TEMPERATURE UNLESS OTHERWISE NOTED

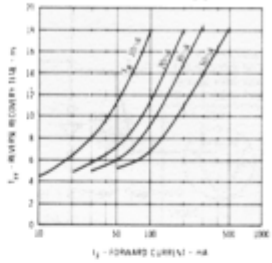
FORWARD VOLTAGE VERSUS FORWARD CURRENT



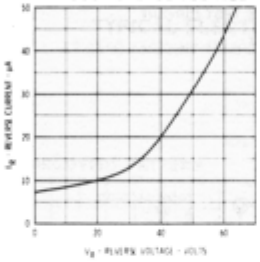
CAPACITANCE VERSUS REVERSE VOLTAGE



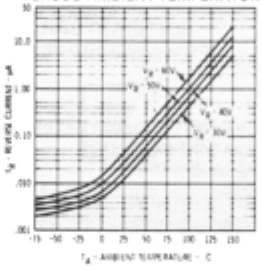
REVERSE RECOVER TIME VERSUS FORWARD CURRENT



REVERSE CURRENT VERSUS REVERSE VOLTAGE



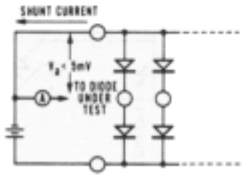
REVERSE CURRENT VERSUS AMBIENT TEMPERATURE



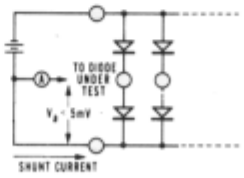
TEST CIRCUITS

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

COMMON CATHODE DIODES



COMMON ANODE DIODES



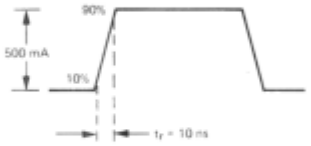
CURVE SET NUMBER D15

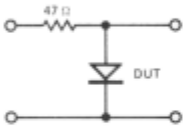
AIR-ISOLATED MONOLITHIC DIODE ARRAY

TEST CIRCUITS

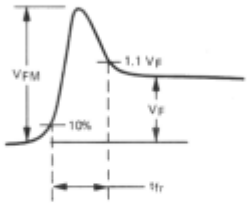
Test requirement for V_{FM} and t_{fr} is as shown below; all leads should be as short as possible.

INPUT CURRENT PULSE



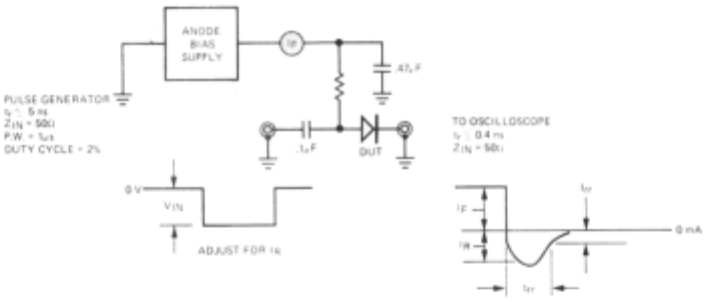


OUTPUT VOLTAGE PULSE

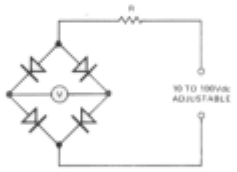


t_{rr} - REVERSE RECOVERY TIME TEST CIRCUIT

$I_f = I_r$, $I_{rr} = 0.1\ I_r$



ΔV_F BRIDGE MATCHING CIRCUIT



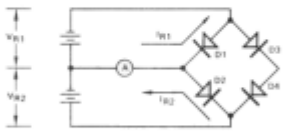
NOTES:

1. R Varies depending on the current range. For the most often used current ranges, R is as follows:

Current Range (amperes)	R (ohms)
10^{-5} to 10^{-4}	10^{6}
10^{-4} to 10^{-3}	10^{5}
10^{-3} to 10^{-2}	10^{4}
or 10^{-n} to 10^{-n+1}	10^{n+1}

2. V indicates mismatch of assembly.

ΔI_R BRIDGE MATCHING CIRCUIT



NOTES:

1. $V_{R2} = V_{R1}$ ±1%.
2. $I_{R2} - I_{R1} = \Delta I_R$ (difference in I_R between diodes D1 & D2). To measure diodes D3 & D4, reverse cathode-anodeterminal connections.
3. A is a center reading pico ammeter. ΔI_R indicated directly on A.