

Silicon – FM Dual Diode

RF500

Varactor

38-42pF

DATASHEET

OEM – Fairchild

Source: Fairchild Databook 1978

RF500

DUAL FM VARACTOR

DIFFUSED SILICON PLANAR DIODE

- C...38–42 pF
- Q...125 (MIN)

ABSOLUTE MAXIMUM RATINGS (Note 1)

Temperatures

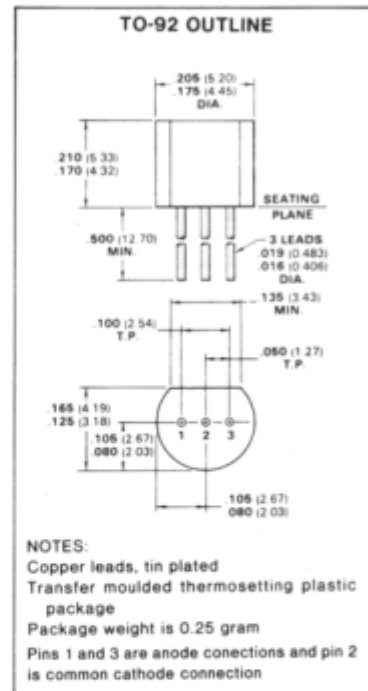
Storage Temperature Range	-55°C to +150°C
Maximum Junction Operating Temperature	+150°C
Lead Temperature	+260°C

Power Dissipation (Note 2)

Maximum Total Power Dissipation at 25°C Ambient	280 mW
Linear Power Derating Factor	2.24 mW / °C

Maximum Voltage and Currents

WIV	Working Inverse Voltage	30 V
I _F	Continuous Forward Current	200 mA



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

SYMBOL	CHARACTERISTIC	MIN	TYP	MAX	UNITS	TEST CONDITIONS
BV	Breakdown Voltage	35			V	I _R = 10 μA
I _R	Reverse Current		5.0 50	50 500	nA nA	V _R = 30 V V _R = 30 V, T _A = 60°C
C	Capacitance	38	40	42	pF	V _R = 3 V, f = 1 MHz
C3/C30	Capacitance Ratio	2.5	2.65	2.8		V _R = 3/30 V, f = 1 MHz
L _S	Series Inductance		6.0		nH	f = 250 MHz, 1.5 m _m leads
R _D	Dynamic Resistance		0.2	0.4	Ω	V _R @ 38 pF, f = 100 MHz
C _C	Case Capacitance		0.18		pF	f = 1 MHz, 1.5 m _m leads
TC _C	Capacitance Temperature Coefficient		280	400	ppm / °C	
Q	Figure of Merit	125	150			V _R = 3 V, f = 100 MHz

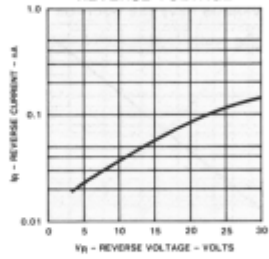
NOTES:

1. These ratings are limiting values above which the serviceability of the diode may be impaired.
2. These are steady state limits. The factor should be consulted on applications involving pulsed or low duty-cycle operation.
3. For product family characteristic curves, refer to Chapter 4, D9.

CURVE SET NUMBER D9
DUAL FM VARACTOR

TYPICAL ELECTRICAL CHARACTERISTICS
 AT 25°C AMBIENT TEMPERATURE UNLESS OTHERWISE NOTED

REVERSE CURRENT VERSUS REVERSE VOLTAGE



NORMALIZED CAPACITANCE VERSUS JUNCTION TEMPERATURE

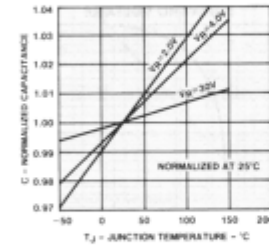


FIGURE OF MERIT VERSUS REVERSE VOLTAGE

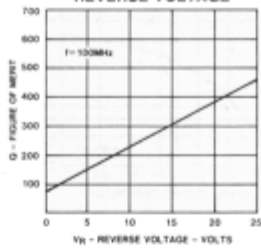


FIGURE OF MERIT VERSUS FREQUENCY

