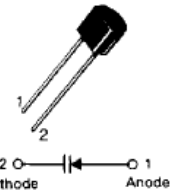
MVAM108★
MVAM109★
MVAM115★
MVAM125★

CASE 182-02, STYLE 1
(TO-226AC)



TUNING DIODES WITH VERY HIGH CAPACITANCE RATIO

★These are Motorola designated preferred devices.

SILICON TUNING DIODES

. . . designed for electronic tuning of AM receivers and high capacitance, high tuning ratio applications.

- High Capacitance Ratio — C_R = 15 (Min), MVAM108, 115, 125
- Guaranteed Diode Capacitance — C_t = 440 pF (Min) — 560 pF (Max) @ V_R = 1.0 VDc, f = 1.0 MHz, MVAM108, MVAM115, MVAM125
- Guaranteed Figure of Merit — Q = 150 (Min) @ V_R = 1.0 Vdc, f = 1.0 MHz

MAXIMUM RATINGS

Rating		Symbol	Value	Unit
Reverse Voltage	MVAM108 MVAM109 MVAM115 MVAM125	V_R	12 15 18 28	Volts
Forward Current		I_F	50	mA
Power Dissipation @ T_A = 25°C Derate above 25°C		P_D	280 2.8	mW mW/°C
Operating and Storage Junction Temperature Range		T_J, T_{stg}	−55 to +125	°C

ELECTRICAL CHARACTERISTICS (T_A = 25°C unless otherwise noted, Each Device)

Characteristic		Symbol	Min	Typ	Max	Unit
Breakdown Voltage (I_R = 10 μAdc)	MVAM108 MVAM109 MVAM115 MVAM125	$V_{(BR)R}$	12 15 18 28	— — — —	— — — —	Vdc
Reverse Current (V_R = 8.0 V) (V_R = 9.0 V) (V_R = 15 V) (V_R = 25 V)	MVAM108 MVAM109 MVAM115 MVAM125	I_R	— — — —	— — — —	100 100 100 100	nAdc
Diode Capacitance Temperatujre Coefficient (1) (V_R = 1.0 Vdc, f = 1.0 MHz, T_A = −40°C to +85°C)		TC_C	—	435	—	ppm/°C
Case Capacitance (f = 1.0 MHz, Lead Length 1/16")		C_C	—	0.18	—	pF
Diode Capacitance (V_R = 1.0 Vdc, f = 1.0 MHz)	MVAM108, 115, 125 MVAM109	C_t	440 400	500 460	560 520	pF
Figure of Merit (f = 1.0 MHz, Lead Length 1/16", V_R = 1.0 Vdc)		Q	150	—	—	—
Capacitance Ratio (f = 1.0 MHz)	MVAM108 MVAM109 MVAM115 MVAM125	C1/C8 C1/C9 C1/C15 C1/C25	15 12 15 15	— — — —	— — — —	—

NOTES:
1. The effect of increasing temperature 1.0°C, at any operating point, is equivalent to lowering the effective tuning voltage 1.25 mV. The percent change of capacitance per °C is nearly constant from −40°C to +100°C.

FIGURE 2 — CAPACITANCE versus REVERSE VOLTAGE

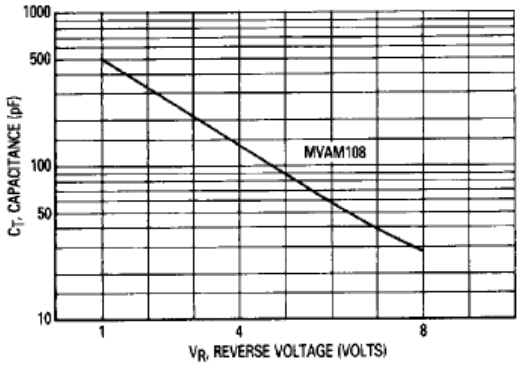


FIGURE 3 — CAPACITANCE versus REVERSE VOLTAGE

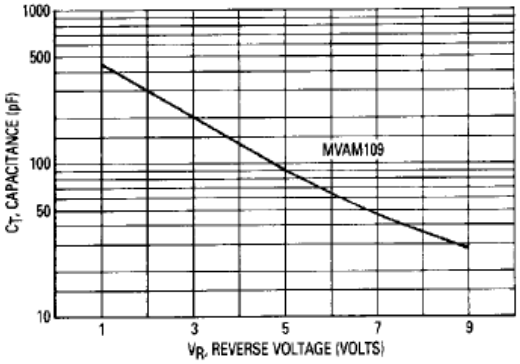


FIGURE 4 — CAPACITANCE versus REVERSE VOLTAGE

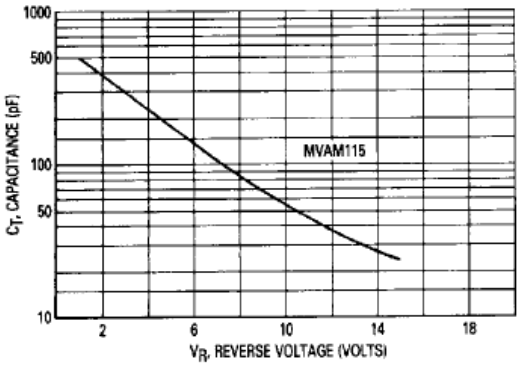


FIGURE 5 — CAPACITANCE versus REVERSE VOLTAGE