

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	12	Volts
	MVAM109	15	
	MVAM115	18	
	MVAM125	28	
Forward Current	I_F	50	mA
Power Dissipation @ $T_A = 25^\circ\text{C}$ Derate above 25°C	P_D	280	mW
		2.8	mW/ $^\circ\text{C}$
Operating and Storage Junction Temperature Range	T_J, T_{stg}	-55 to +125	$^\circ\text{C}$

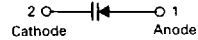
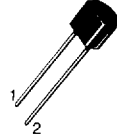
ELECTRICAL CHARACTERISTICS ($T_A = 25^\circ\text{C}$ unless otherwise noted, Each Device)

Characteristic	Symbol	Min	Typ	Max	Unit
Breakdown Voltage ($I_R = 10 \mu\text{Adc}$)	$V_{(BR)R}$	12	—	—	Vdc
		15	—	—	
		18	—	—	
		28	—	—	
Reverse Current ($V_R = 8.0$ V) ($V_R = 9.0$ V) ($V_R = 15$ V) ($V_R = 25$ V)	I_R	—	—	100	nAdc
		—	—	100	
		—	—	100	
		—	—	100	
Diode Capacitance Temperature Coefficient (1) ($V_R = 1.0$ Vdc, $f = 1.0$ MHz, $T_A = -40^\circ\text{C}$ to $+85^\circ\text{C}$)	TC_C	—	435	—	ppm/ $^\circ\text{C}$
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)	C_t	440	500	560	pF
MVAM108, 115, 125 MVAM109		400	460	520	
Figure of Merit ($f = 1.0$ MHz, Lead Length 1/16", $V_R = 1.0$ Vdc)	Q	150	—	—	—
Capacitance Ratio ($f = 1.0$ MHz)	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 $^\circ\text{C}$ is nearly constant from -40°C to $+100^\circ\text{C}$.

MVAM108★
MVAM109★
MVAM115★
MVAM125★
CASE 182-02, STYLE 1
(TO-226AC)



TUNING DIODES
WITH VERY HIGH
CAPACITANCE RATIO

★These are Motorola
designated preferred devices.

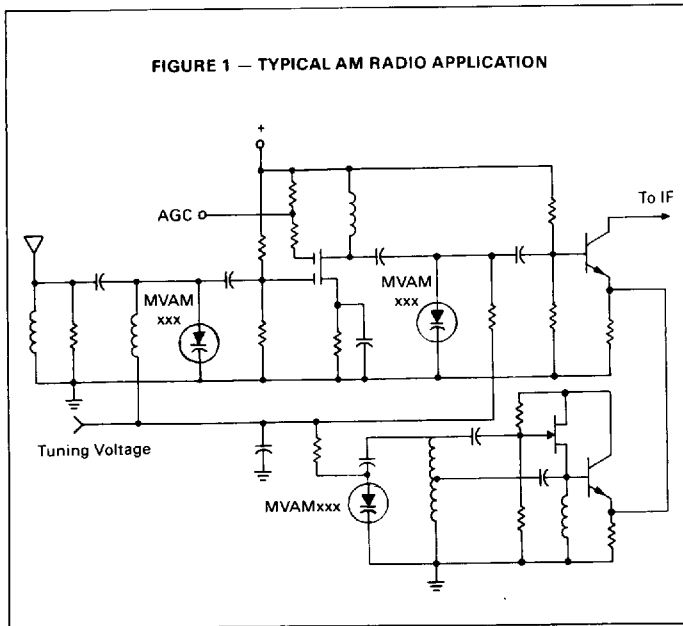


FIGURE 2 — CAPACITANCE versus REVERSE VOLTAGE

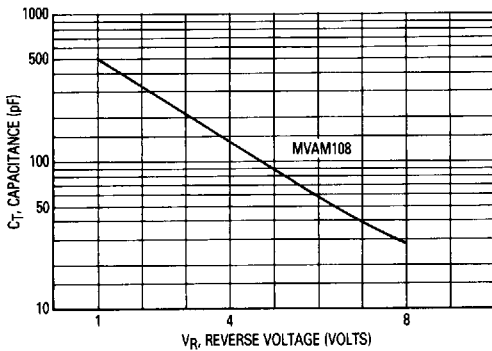


FIGURE 3 — CAPACITANCE versus REVERSE VOLTAGE

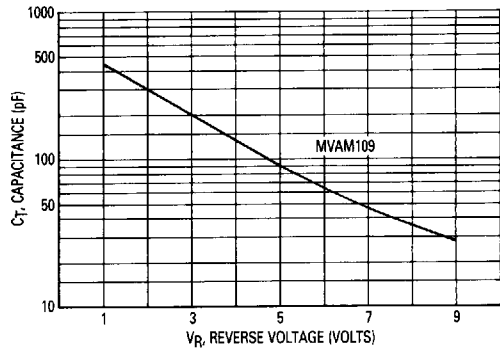


FIGURE 4 — CAPACITANCE versus REVERSE VOLTAGE

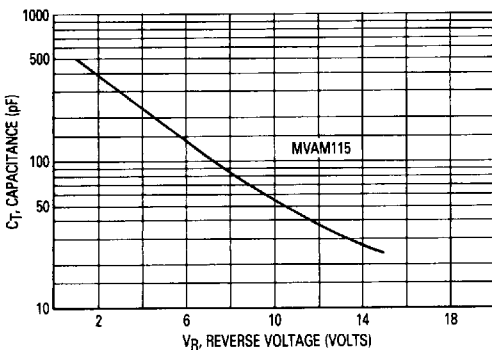


FIGURE 5 — CAPACITANCE versus REVERSE VOLTAGE

