

MVAM108
MVAM109
MVAM115
MVAM125

VVC $\rightarrow$

SILICON TUNING DIODE

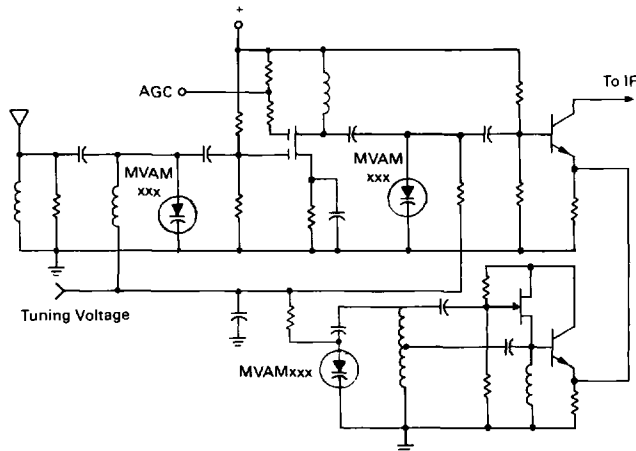
... designed for electronic tuning of AM receivers and high capacitance, high tuning ratio applications.

- High Capacitance Ratio — $C_R = 15$ (Min).
MVAM 108, 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.

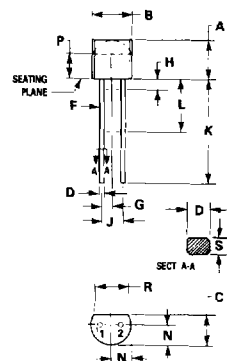
MAXIMUM RATINGS

Rating	Symbol	Value	Unit
Reverse Voltage	V_R	12 15 18 28	Volts
Forward Current	I_F	50	mA
Power Dissipation @ $T_A = 25^\circ\text{C}$ Derate Above 25°C	P_D	280 28	mW mW/°C
Operating and Storage Junction Temperature Range	T_J, T_{stg}	-55 to +125	°C

FIGURE 1 — TYPICAL AM RADIO APPLICATION



**TUNING DIODES
WITH VERY HIGH
CAPACITANCE RATIO**



STYLE 1
PIN 1. ANODE
PIN 2. CATHODE

DIM	MILLIMETERS		INCHES	
	MIN	MAX	MIN	MAX
A	4.32	5.33	0.170	0.210
B	4.45	5.21	0.175	0.205
C	3.18	4.19	0.125	0.165
D	0.41	0.56	0.016	0.022
F	0.407	0.482	0.016	0.019
G	1.27	BSC	0.050	BSC
H	—	1.27	—	0.050
J	2.54	BSC	0.100	BSC
K	12.70	—	0.500	—
L	6.35	—	0.250	—
N	2.03	2.86	0.080	0.105
P	2.93	—	0.115	—
R	3.43	—	0.135	—
S	0.36	0.41	0.014	0.016

CASE 182-02

MVAM108, MVAM109, MVAM115, MVAM125

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

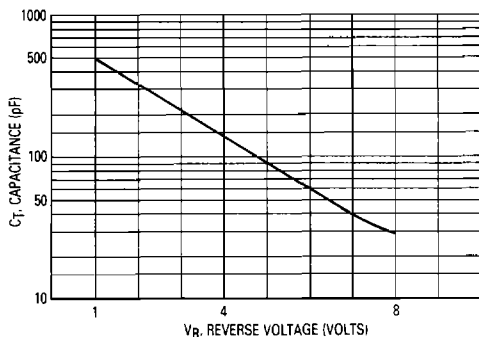
Characteristic — All Types		Symbol	Min	Typ	Max	Unit
Breakdown Voltage ($I_R = 10\ \mu\text{A}$)	MVAM108 MVAM109 MVAM115 MVAM125	$V_{(BR)R}$	12 15 18 28	— — — —	— — — —	Vdc
Reverse Current ($V_R = 8.0\ \text{V}$) ($V_R = 9.0\ \text{V}$) ($V_R = 15\ \text{V}$) ($V_R = 25\ \text{V}$)	MVAM108 MVAM109 MVAM115 MVAM125	I_R	— — — —	— — — —	100 100 100 100	nA dc
Diode Capacitance Temperature Coefficient (1) ($V_R = 1.0\ \text{Vdc}$, $f = 1.0\ \text{MHz}$, $T_A = -40^\circ\text{C}$ to $+85^\circ$)		TC_C	—	435	—	ppm/ $^\circ\text{C}$
Case Capacitance ($f = 1.0\ \text{MHz}$, Lead Length $1/16''$)		C_C	—	0.18	—	pF
Diode Capacitance (2) ($V_R = 1.0\ \text{Vdc}$, $f = 1.0\ \text{MHz}$)	MVAM108, 115, 125 MVAM109	C_t	440 400	500 460	560 520	pF
Figure of Merit ($f = 1.0\ \text{MHz}$, Lead Length $1/16''$, $V_R = 1.0\ \text{Vdc}$)		Q	150	—	—	—
Capacitance Ratio ($f = 1.0\ \text{MHz}$)	MVAM108 MVAM109 MVAM115 MVAM125	$C1/C8$ $C1/C9$ $C1/C15$ $C1/C25$	15 12 15 15	— — — —	— — — —	—

Notes:

- (1) The effect of increasing temperature 1°C , at any operating point, is equivalent to lowering the effective tuning voltage $1.25\ \text{mV}$. The percent change of capacitance per $^\circ\text{C}$ is nearly constant from -40°C to $+100^\circ\text{C}$.
- (2) Upon request, diodes are available in matched sets. All diodes in a set can be matched for capacitance to 3% or 2 pF (whichever is greater) at all points along the specified tuning range.

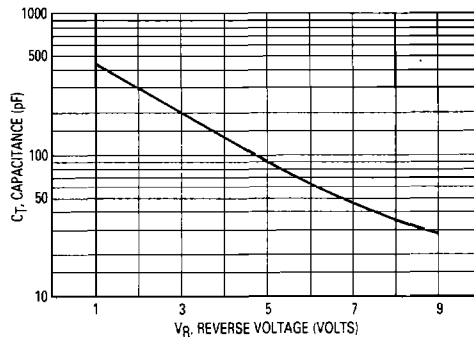
MVAM108

Figure 2. Capacitance versus Reverse Voltage



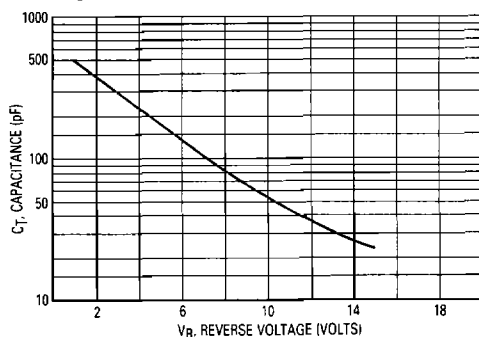
MVAM109

Figure 3. Capacitance versus Reverse Voltage



MVAM115

Figure 4. Capacitance versus Reverse Voltage



MVAM 125

Figure 5. Capacitance versus Reverse Voltage

