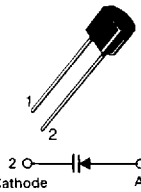
# MVAM108★
# MVAM109★
# MVAM115★
# MVAM125★

**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 | $V_R$ | 12 | Volts |
| | MVAM109 | | 15 | |
| | MVAM115 | | 18 | |
| | MVAM125 | | 28 | |
| Forward Current | | $I_F$ | 50 | mA |
| Power Dissipation @ $T_A$ = 25°C | | $P_D$ | 280 | mW |
| Derate above 25°C | | | 2.8 | 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 | | $V_{(BR)R}$ | | | | Vdc |
| ($I_R$ = 10 μAdc) | MVAM108 | | 12 | — | — | |
| | MVAM109 | | 15 | — | — | |
| | MVAM115 | | 18 | — | — | |
| | MVAM125 | | 28 | — | — | |
| Reverse Current | | $I_R$ | | | | nAdc |
| ($V_R$ = 8.0 V) | MVAM108 | | — | — | 100 | |
| ($V_R$ = 9.0 V) | MVAM109 | | — | — | 100 | |
| ($V_R$ = 15 V) | MVAM115 | | — | — | 100 | |
| ($V_R$ = 25 V) | MVAM125 | | — | — | 100 | |
| 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 | | $C_t$ | | | | pF |
| ($V_R$ = 1.0 Vdc, f = 1.0 MHz) | MVAM108, 115, 125 | | 440 | 500 | 560 | |
| | 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) | MVAM108 | C1/C8 | 15 | — | — | |
| | MVAM109 | C1/C9 | 12 | — | — | |
| | MVAM115 | C1/C15 | 15 | — | — | |
| | MVAM125 | C1/C25 | 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 1 — TYPICAL AM RADIO APPLICATION

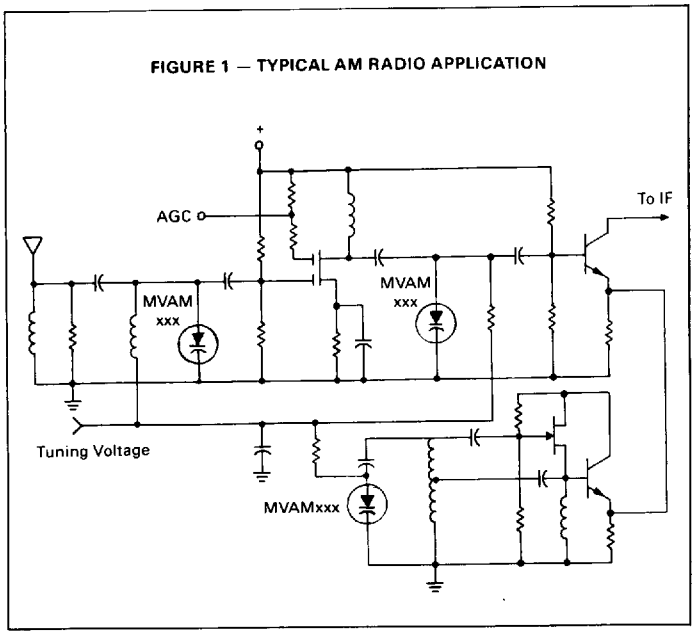



FIGURE 2 — CAPACITANCE versus REVERSE VOLTAGE

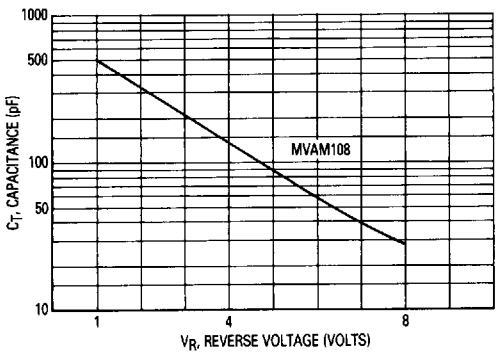



FIGURE 3 — CAPACITANCE versus REVERSE VOLTAGE

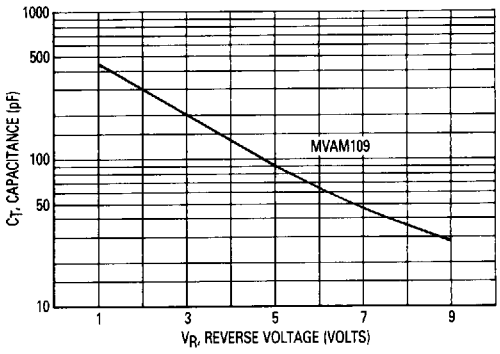



FIGURE 4 — CAPACITANCE versus REVERSE VOLTAGE

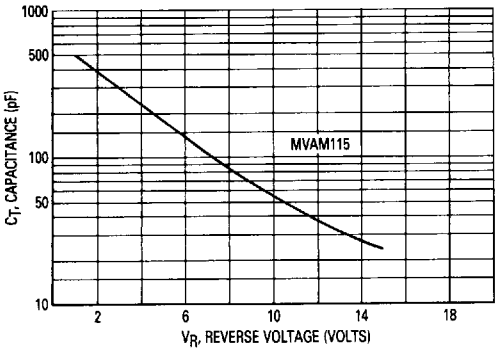



FIGURE 5 — CAPACITANCE versus REVERSE VOLTAGE