

**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	$V_R$	12	Volts
	MVAM108	15	
	MVAM109	18	
	MVAM115	28	
	MVAM125		
Forward Current	$I_F$	50	mA
Power Dissipation @ $T_A = 25^\circ\text{C}$ Derate above $25^\circ\text{C}$	$P_D$	280	mW
		2.8	mW/°C
Operating and Storage Junction Temperature Range	$T_J, T_{stg}$	-55 to +125	°C

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

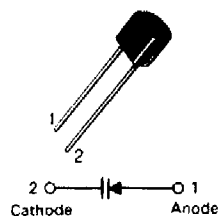
Characteristic	Symbol	Min	Typ	Max	Unit
Breakdown Voltage ( $I_R = 10 \mu\text{Adc}$ )	$V_{(BR)R}$	12	—	—	Vdc
	MVAM108	15	—	—	
	MVAM109	18	—	—	
	MVAM115	28	—	—	
	MVAM125				
Reverse Current ( $V_R = 8.0$ V) ( $V_R = 9.0$ V) ( $V_R = 15$ V) ( $V_R = 25$ V)	$I_R$	—	—	100	nAdc
	MVAM108	—	—	100	
	MVAM109	—	—	100	
	MVAM115	—	—	100	
	MVAM125	—	—	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/°C
Case Capacitance ( $f = 1.0$ MHz, Lead Length 1/16")	$C_C$	—	0.18	—	pF
Diode Capacitance (2) ( $V_R = 1.0$ Vdc, $f = 1.0$ MHz)	$C_t$	440	500	560	pF
	MVAM108, 115, 125	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	$C_1/C_8$	15	—	—
	MVAM109	$C_1/C_9$	12	—	—
	MVAM115	$C_1/C_{15}$	15	—	—
	MVAM125	$C_1/C_{25}$	15	—	—

**NOTES:**

- 1 The effect of increasing temperature  $1.0^\circ\text{C}$ , 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  $-40^\circ\text{C}$  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  $2.0$  pF (whichever is greater) at all points along the specified tuning range.

**MVAM108★**  
**MVAM109★**  
**MVAM115★**  
**MVAM125★**

(TO-226Ac)



**TUNING DIODES  
WITH VERY HIGH  
CAPACITANCE RATIO**



NJ Semi-Conductors reserves the right to change test conditions, parameter limits and package dimensions without notice. Information furnished by NJ Semi-Conductors is believed to be both accurate and reliable at the time of going to press. However, NJ Semi-Conductors assumes no responsibility for any errors or omissions discovered in its use. NJ Semi-Conductors encourages customers to verify that datasheets are current before placing orders.

**Quality Semi-Conductors**