Silicon Tuning Diode

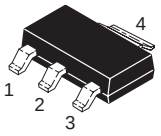
MV7005T1

Motorola Preferred Device

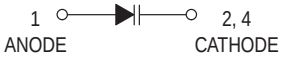
This silicon tuning diode is designed for use in high capacitance, high–tuning ratio applications. The device is housed in the SOT-223 package which is designed for medium power surface mount applications.

- Guaranteed Capacitance Range
- The SOT-223 Package can be soldered using wave or reflow.
- SOT–223 package ensures level mounting, resulting in improved thermal conduction, and allows visual inspection of soldered joints. The formed leads absorb thermal stress during soldering eliminating the possibility of damage to the die.

SOT–223 PACKAGE
HIGH CAPACITANCE
VOLTAGE VARIABLE DIODE
SURFACE MOUNT



CASE 318E–04, STYLE 2
SOT–223 (TO–261AA)



MAXIMUM RATINGS

Rating	Symbol	Value	Unit
Reverse Voltage	V_R	15	Vdc
Forward Current	I_F	50	mAdc
Total Power Dissipation @ T_A = 25°C(1) Derate above 25°C	P_D	800 6.4	mW mW/°C
Junction Temperature	T_J	+125	°C
Storage Temperature Range	T_{stg}	–55 to +125	°C

1. FR-4 board, 0.0625 in^2, 2 oz. copper.

DEVICE MARKING

MV7005T1 = V7005

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

Characteristic	Symbol	Min	Max	Unit
Reverse Breakdown Voltage (I_R = 10 μAdc)	$V_{(BR)R}$	15	—	Vdc
Reverse Voltage Leakage Current (V_R = 9.0 Vdc)	I_R	—	100	nAdc
Diode Capacitance (V_R = 1.0 Vdc, f = 1.0 MHz)	C_T	400	520	pF
Capacitance Ratio C1/C9 (f = 1.0 MHz)	C_R	12	—	—
Figure of Merit (V_R = 1.0 Vdc, f = 1.0 MHz)	Q	150	—	—

Preferred devices are Motorola recommended choices for future use and best overall value.

REV 2

TYPICAL CHARACTERISTICS

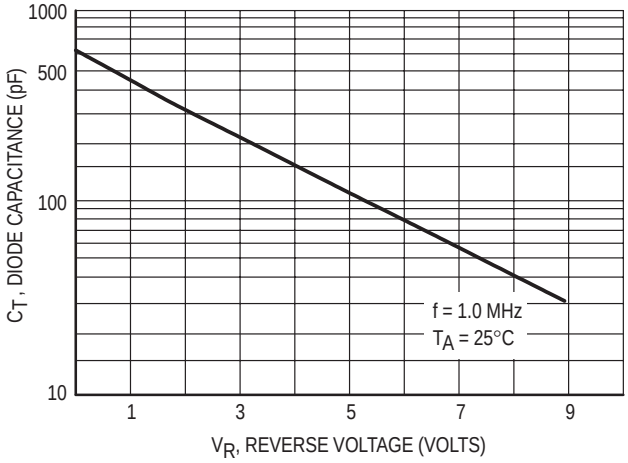


Figure 1. Diode Capacitance versus Reverse Voltage

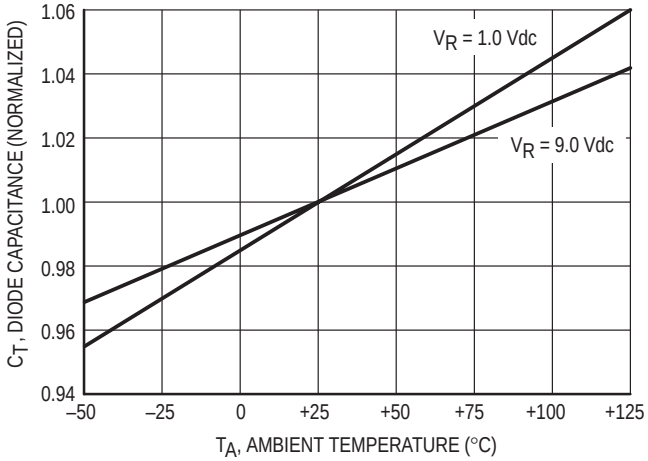


Figure 2. Diode Capacitance versus Ambient Temperature

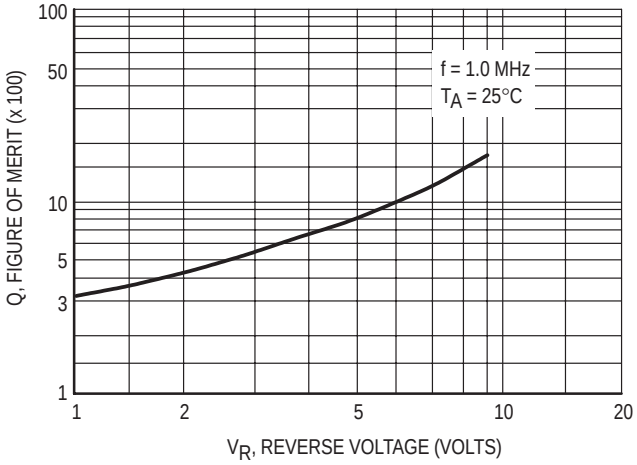


Figure 3. Figure of Merit