

TYPES TIV21, TIV22, TIV23 SILICON VOLTAGE-VARIABLE-CAPACITANCE DIODES

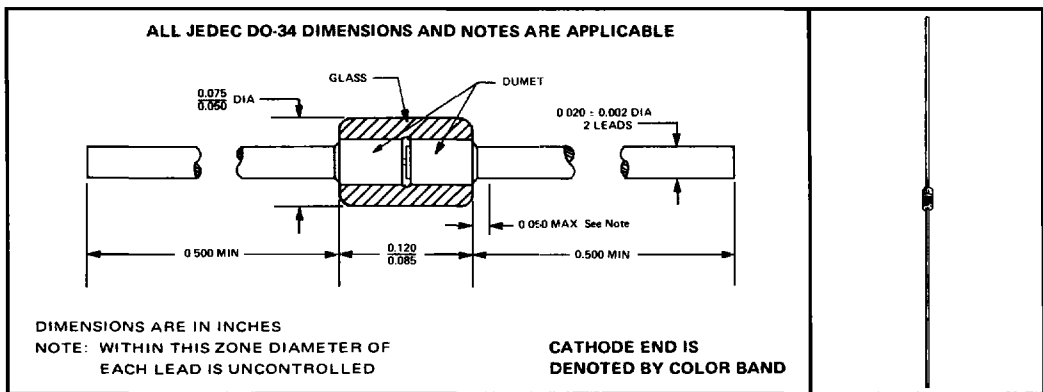
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UHF TUNING DIODES

- Small Size, Double-Plug Construction
- Extremely Stable and Reliable
- Available in Matched Sets†

mechanical data

Double-plug construction affords integral positive contact by means of a thermal compression bond. Moisture-free stability is ensured through hermetic sealing. The coefficients of thermal expansion of the glass case and the dumet plugs are closely matched to allow extreme temperature excursions. Hot-solder-dipped leads are standard.



absolute maximum ratings at 25°C free-air temperature (unless otherwise noted)

Peak Reverse Voltage	30 V
Continuous Power Dissipation at (or below) 25°C Free-Air Temperature (see Note 1)	250 mW
Storage Temperature Range	-65°C to 150°C
Lead Temperature 1/16 Inch from Case for 10 Seconds	260°C

electrical characteristics at 25°C free-air temperature

PARAMETER	TEST CONDITIONS	TIV21		TIV22		TIV23		UNIT
		MIN	MAX	MIN	MAX	MIN	MAX	
$V_{(BR)}$ Breakdown Voltage	$I_R = 10 \mu A$	30		30		30		V
I_R Reverse Current	$V_R = 25 V$		100		100		100	nA
C_t Total Capacitance	$V_R = 3 V, f = 1 MHz$	9	14	9	14	9	14	pF
	$V_R = 25 V, f = 1 MHz$	2	2.5	2.3	2.8	1.8	2.8	
Q Figure of Merit (See Note 2)	$V_R = 3 V, f = 100 MHz$	150		150		100		
$\frac{C_{t1}}{C_{t2}}$ Capacitance Ratio	$V_1 = 3 V, V_2 = 25 V, f = 1 MHz$	4.5	6	4	5	4	6	

† The capacitance of diodes in matched sets is matched at all voltages between 3 and 25 volts to within 1.5% or 0.1 pF, whichever is greater. For ordering matched sets, add dash number to basic part number to indicate the quantity of diodes in the set. For example, TIV21-4 indicates a matched set of 4 diodes.

NOTES: 1. Derate linearly to 150°C at the rate of 2 mW/°C.

2. Figure of Merit, Q, is defined by the equation $Q = \frac{1}{2 \pi f C_t r_s}$ where r_s is the equivalent series resistance.

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TYPICAL CHARACTERISTICS

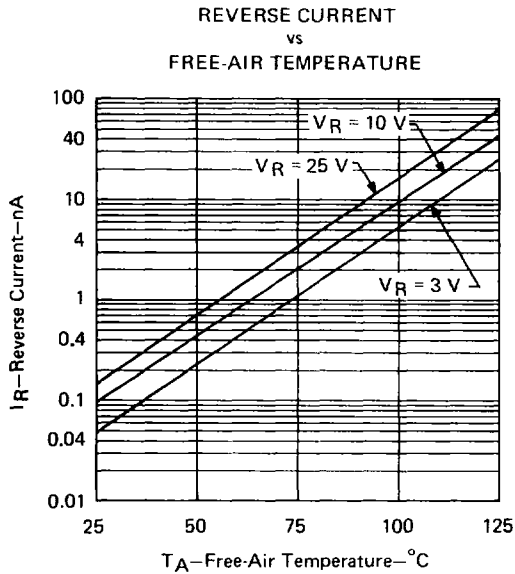


FIGURE 1

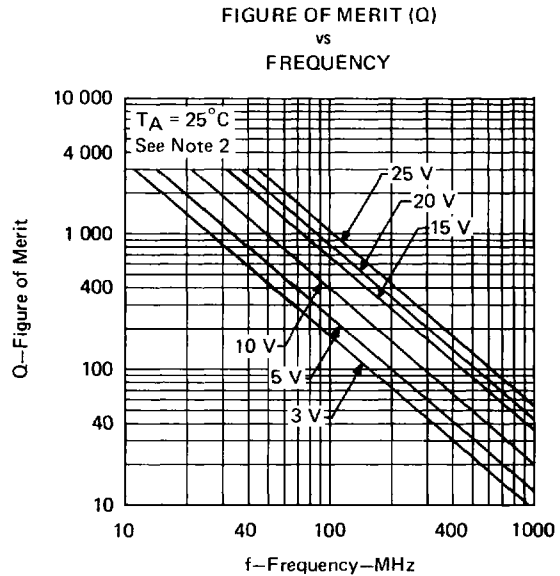


FIGURE 2

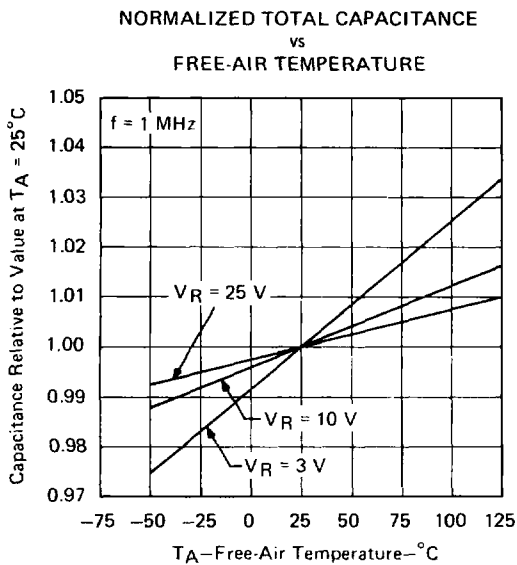


FIGURE 3

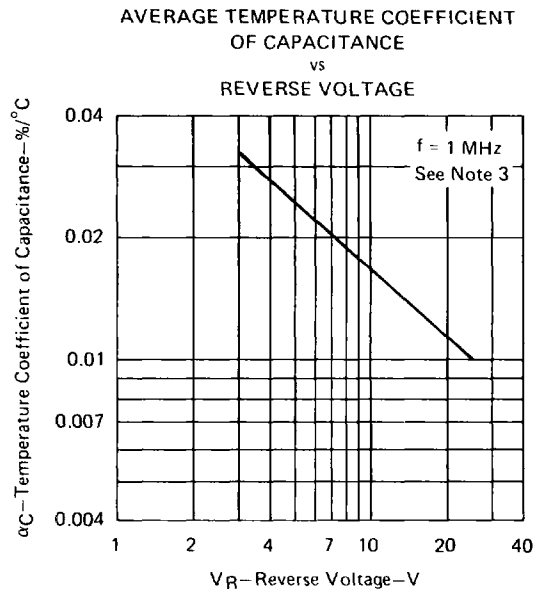


FIGURE 4

NOTES: 2. Figure of Merit, Q , is defined by the equation $Q = \frac{1}{2\pi f C_t r_s}$ where r_s is the equivalent series resistance.

3. Average temperature coefficient, α_C , is determined by the formula: $\alpha_C = \left[\frac{(C_t @ 125^\circ\text{C}) - (C_t @ -50^\circ\text{C})}{C_t @ 25^\circ\text{C}} \right] \frac{100\%}{175^\circ\text{C}}$

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