

These trimmers are widely recognized in the industry for their stability and dependability under adverse operating conditions. The steatite base and titanium dioxide rotor are lapped optically flat to provide min-

imum air gap and maximum stability. The silver electrodes are intimately bonded to the top surfaces of the rotor and base. Capacitance change per degree of rotation is essentially linear to assure tuning smoothness

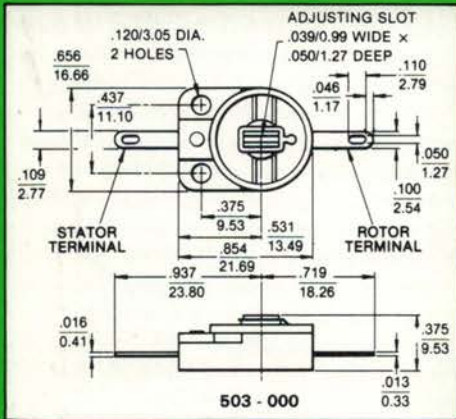
not obtainable with compression type trimmers. All terminals and hardware are of non-ferrous metal and are silver-plated to provide superior conductivity and solderability.



Actual Size

SPECIFICATIONS

- Working Voltage A, C: 500 WVdc @ 125°C
 D and F: 500 WVdc @ 85°C; 250 WVdc @ 125°C
- Dielectric Strength 1250 Vdc for 1-5 sec.
- Operating Temperature Range -55°C to +125°C
- Q Factor @ 1 MHz 500 Minimum; A, C, D
 400 Minimum: F
- Torque 4-20 oz. in.
- Qualification Specification TUSONIX Spec. 500 (page 9)
- Marking: All units will be marked with TUSONIX trademark, capacitance range and dielectric code.
- Example: T 2-6 D



Ordering Data			
Specify series 503 followed by the three digit Terminal Variation you select from the chart below. Then list the Dielectric Type Code you select from the table at right and the corresponding Capacitance Range.	MIL C-81 Designation MIL CV11 TUSONIX Style 503-041*	Dielectric Type Code (see p. 9)	Capacitance Range
Example: 503-001 A 1.5-7 pF	CV11A070	A	1.5 to 7
	CV11D060	D	2.0 to 6
	CV11A120	A	3.0 to 12
	CV11C300	C	4.0 to 30
	CV11D300	D	4.0 to 30
	CV11A250	A	4.5 to 25
	—	A	5.0 to 20
	CV11C450	C	7.0 to 45
	CV11D450	D	7.0 to 45
	—	F	11.0 to 110

Terminal Variation Options

001* <p>.281 7.14 .312 7.92 .859 21.82</p>	006 <p>.937 23.80 .562 14.27</p>	007 TIN DIPPED TERMINALS <p>.062/1.57 MAX. UNTINNED</p>	009 <p>.562 14.27</p>	018 <p>.094 MAX. 2.39 .562 14.27 .094 MIN. 2.39</p>	037 <p>.375 9.53</p>
048 TOP & BOTTOM ADJUST <p>.031/0.79 W x .035/0.89 D</p>	049 <p>.060 DIA. 1.52 .050 1.27 .094 2.39 .094 2.39</p>	056 <p>.141 3.58 .062 1.58 .062 1.58</p>	069 TOP & BOTTOM ADJUST <p>1.110 28.19 .110 2.79 .031/0.79 W x .035 0.89 D .110 2.79</p>	072 <p>.094 2.39 1.040 1.02 .031 0.79</p>	074 <p>.046 DIA. 1.17 .023 0.58 .062 1.58</p>

For dimensions $\leq .110$ " / 2.79 mm, tolerance is $\pm .015$ / 0.38
 For dimensions $\geq .111$ " / 2.81 mm, tolerance is $\pm .030$ / 0.76
 Except where noted

CAPACITANCE: When measured at room temperature ($25^{\circ}\text{C} \pm 5^{\circ}\text{C}$) and at a frequency of 0.1 to 1 megahertz, the minimum capacitance shall not be greater than that specified at minimum setting with a +10% tolerance, and the maximum capacitance shall not be less than that specified at maximum setting with a -10% tolerance.

"Q" FACTOR: When measured at room temperature ($25^{\circ}\text{C} \pm 5^{\circ}\text{C}$), at a frequency of approximately 1 megahertz, the capacitor at approximately maximum rated capacitance setting shall have a "Q" value not less than indicated for the respective style.

INSULATION RESISTANCE: The insulation resistance at approximately maximum capacitance setting shall be 10 gigaohms minimum at room temperature of ($25^{\circ}\text{C} \pm 5^{\circ}\text{C}$) when measured at 100 volts dc in a series with a protective resistance not exceeding 1 megaohm after no more than one minute application of the voltage.

DIELECTRIC STRENGTH: The capacitor, set at approximately maximum capacitance shall withstand voltage between terminals for 1 to 5 sec. as indicated for the respective style. (50mA maximum charging current)

TORQUE: When measured at room temperature ($25^{\circ}\text{C} \pm 5^{\circ}\text{C}$), the torque required to start and maintain rotation of the rotor through one full turn, shall be as indicated for the respective style.

TEMPERATURE CHARACTERISTIC: The temperature characteristic of capacitance shall be within the limits shown in the following table. The temperature characteristic shall be determined by measuring the capacitance (capacitor shall be set at approximately 75% of the guaranteed maximum capacitance) $+25^{\circ}\text{C}$, -55°C , and either $+85^{\circ}\text{C}$ or $+125^{\circ}\text{C}$, whichever is applicable to the respective style, at a frequency of 0.1 to 1 megahertz. Each measurement shall be made after the capacitor has

reached thermal stability.

CAPACITANCE DRIFT: With the capacitor set at approximately 75% of the guaranteed maximum capacitance, the capacitance drift shall be determined as the greatest difference between any two of three 25°C measurements, when temperature cycled as follows: $+25^{\circ}\text{C}$, -55°C , $+85^{\circ}\text{C}$ or $+125^{\circ}\text{C}$, whichever is applicable to respective style, $+25^{\circ}\text{C}$. The capacitance drift shall not exceed 0.75% or 0.5pF, whichever is greater.

ACCELERATED LIFE TEST: The capacitor, at approximately 75% of the guaranteed maximum capacitance, shall be tested for 250 hours at twice rated voltage, and at a temperature equal to the maximum operating temperature $\pm 3^{\circ}\text{C}$ for the respective style. At the end of this period the capacitance shall not have changed more than $\pm 5\%$ of its value before the life test or $\pm 0.5\text{pF}$, whichever is greater; the insulation resistance shall be 1 gigaohm minimum and the "Q" at 1 megahertz shall be at least 40% of the initial test limit.

TEMPERATURE CYCLING & HUMIDITY: The capacitor, at approximately 75% of the guaranteed maxi-

um capacitance, shall be given a treatment consisting of 5 temperature cycles as follows: Cool the capacitor to $-55^{\circ}\text{C} \pm 3^{\circ}\text{C}$. Remove the capacitor from the cooling chamber and allow it to reach room temperature. Then place in an oven at a temperature equal to maximum operating temperature $\pm 3^{\circ}\text{C}$ of the respective style. Remove from oven and allow capacitor to cool to room temperature. The capacitor shall be held at the specified minimum and maximum temperatures long enough to reach equilibrium, and in no case less than 15 minutes. The rate of change of temperature in cooling from room temperature, or heating above it, shall not be less than 3°C per minute. The temperature cycles shall be followed by exposure for 96 hours to a relative humidity of 95% at $40^{\circ}\text{C} \pm 3^{\circ}\text{C}$. The capacitor shall then be removed from the humidity chamber and held at $25^{\circ}\text{C} \pm 5^{\circ}\text{C}$ with a maximum humidity of 50% for four hours. The insulation resistance shall be at least 1 gigaohm, the "Q" at 1 MHz is at least 40% of initial test limit and the capacitance shall not have changed by more than $\pm 3\%$ or $\pm 0.5\text{pF}$, whichever is greater, from its value prior to the start of the temperature cycling.

Dielectric Type Code	PERCENT CAPACITANCE CHANGE FROM VALUE @ 25°C					
	-55°C		$+85^{\circ}\text{C}$		$+125^{\circ}\text{C}$	
	Min.	Max.	Min.	Max.	Min.	Max.
For Spec 500						
A	-4.5	+2.0	-2.5	+2.0	-4.2	+3.4
B	-1.0	+3.5	-2.5	-0.5	-4.2	-0.8
C	-1.0	+6.5	-4.0	-1.0	-6.7	-1.7
D	+1.5	+7.0	-5.0	-1.5	-8.5	-2.5
E	+1.75	+8.0	-5.75	-1.75	-9.5	-2.8
F	+6.0	+16.0	-11.0	-6.0	-15.0	-9.0
G	0.0	+14.0	-8.0	-3.0	-14.0	-5.0
For Spec 513						
A	-2.1	+4.2	-3.8	+1.1		
G	0.0	+14.0	-8.0	-3.0		