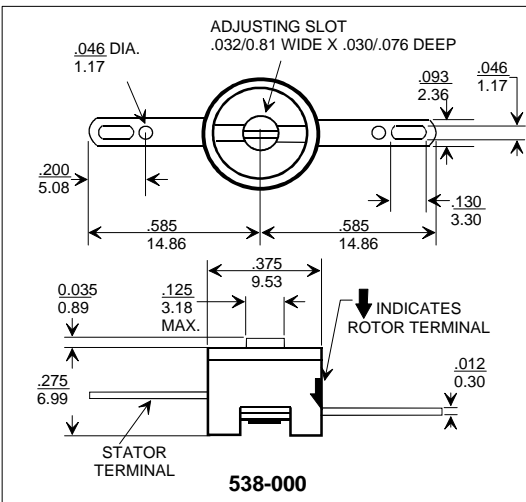




TUSONIX' 538 Series described on this page is miniaturized for today's circuitry. All ceramic construction with optically flat interfaces provides tuning smoothness not obtainable with compression type trimmers.

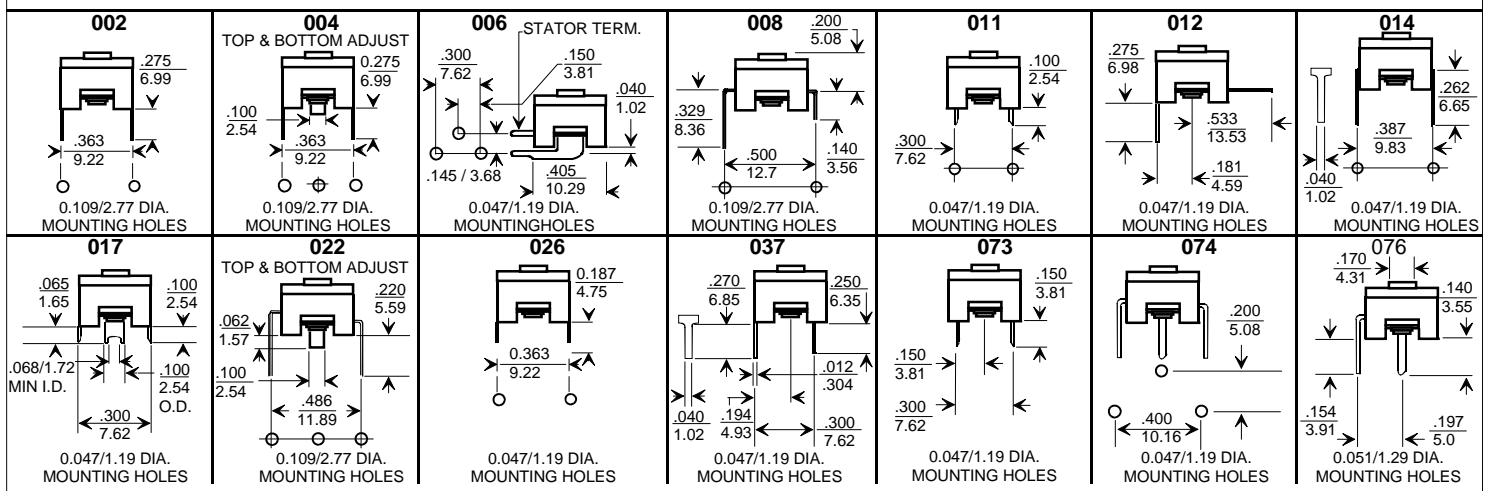
The silver electrodes are intimately bonded to the top surfaces of the base and rotor. The terminals and other metal parts are non-ferrous and silver-plated to provide excellent conductivity and trouble free soldering.

A variety of capacitance ranges, terminations and mounting provisions make these popular trimmers ideal for nearly all applications.



Specify series 538 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 the right and the corresponding Capacitance Range.	Ordering Data		Dielectric Type Code (See Page 2)	Capacitance Range (pF)
	MIL C-81 Designation MIL CV31 TUSONIX Style 538-054	MIL C-81 Designation MIL CV32 TUSONIX Style 538-067		
Example: 538-002 A 2.0-8 pF	CV31A080	CV32A080	A	2.0 to 8
	CV31B110	CV32B110	B	2.5 to 11
	—	—	A	3.0 to 10
	CV31C100	CV32C100	C	3.0 to 10
	CV31D150	CV32D150	D	3.0 to 15
	—	—	B	3.5 to 14
	CV31A180	CV32A180	A	5.5 to 18
	—	—	F	5.0 to 25
	—	—	D	5.5 to 25
	CV31B250	CV32B250	B	7.0 to 25
CV31C250	CV32C250	C	8.0 to 25	
CV31D350	CV32D350	D	9.0 to 35	
CV31E600	CV32E600	F	15.0 to 60	

Terminal Variation Options



For dimensions $\leq 0.125"/3.18\text{mm}$, tolerance is $\pm 0.015/0.38$
 For dimensions $\geq 0.126"/3.20\text{mm}$, tolerance is $\pm 0.030/0.76$
 Specifications see page 2.

Above are shown a few of the many mechanical variations available. For special designs tailored to your application, contact your nearest TUSONIX Sales Office or call the factory direct at 520-744-0400

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 mega-hertz, 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 1megohm 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 1megahertz. 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 maximum capacitance, shall be given a treatment consisting of 5 temperature cycles as follows: Cool 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 1MHZ 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.
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
F	+6.0	+16.0	-11.0	-6.0	-15.0	-9.0

SPECIFICATIONS FOR 538 TRIMMER CAPACITORS

**Working Voltage...A,B,C: 350 WVdc @ 85°C ; 200 WVdc @ 125°C
D & F: 200 WVdc @ 85°C ; 100 WVdc @ 125°C**

Dielectric Strength500 Vdc for 1-5 sec.

Operating Temperature Range..... -55°C to $+125^{\circ}\text{C}$

Torque.....1-6 oz. in.

Marking: All Units will be marked with TUSONIX trademark, Capacitance range and dielectric code.

Example: T 4-15 A