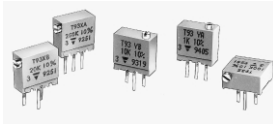


# 3/8" Square Multiturn Cermet Trimmers



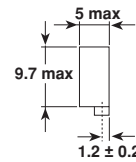
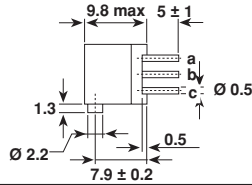
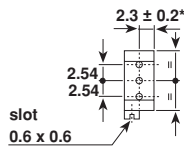
The T93 is a small size trimmer - 3/8" x 3/8" x 3/16" - answering PC board mounting requirements. Five versions are available which differ by the position of the control screw in relation to the PC board plane and by the spacing of the terminals. Excellent operational stability is provided by the use of a cermet element.

## FEATURES

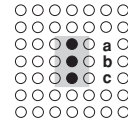
- Industrial Grade
- 0.5 Watt at 70°C
- CECC 41 100
- MIL-R-22097
- Good stability
- Contact resistance variation < 1% typical
- Meet MIL-R-22097 specifications

## DIMENSIONS in millimeters

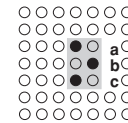
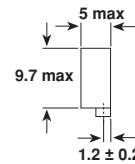
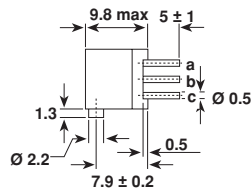
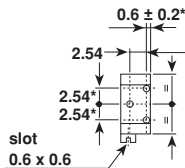
### T93XA



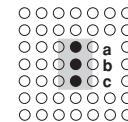
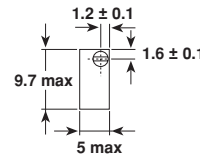
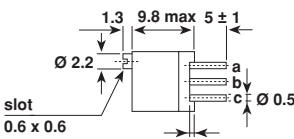
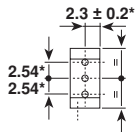
## Terminal Spacing on a 2.54 PCB



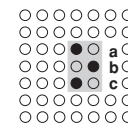
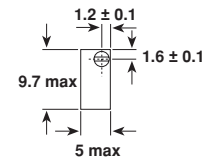
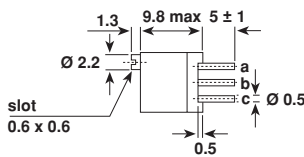
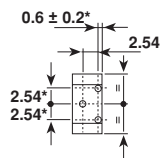
### T93XB



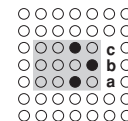
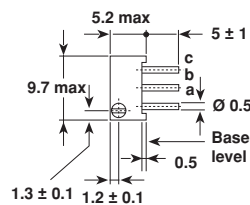
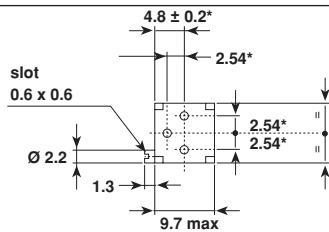
### T93YA



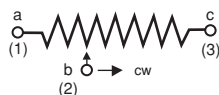
### T93YB



### T93Z



## CIRCUIT DIAGRAM



\*to be measured at base level



ELECTRICAL SPECIFICATIONS		
Resistive Element		cermet
Electrical Travel		19 turns ± 2
Resistance Range		10 to 2.2 MΩ
Standard Series E3		1 - 2.2 - 4.7 and 1 - 2 - 5
Tolerance	Standard	± 10%
	On Request	± 5%
Power Rating	Linear	0.5 W at + 85°C
	Logarithmic	not applicable
Temperature Coefficient		See Standard Resistance Element Data
Limiting Element Voltage (Linear Law)		250 V
Contact Resistance Variation		2% Rn or 2Ω
End Resistance (Typical)		1Ω
Dielectric Strength (RMS)		1000 V
Insulation Resistance (500 VDC)		10 <sup>6</sup> MΩ

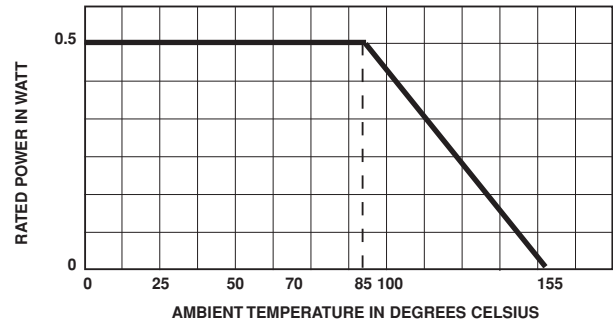
**MECHANICAL SPECIFICATIONS**

Mechanical Travel	22 turns ± 5
Operating Torque (max. Ncm)	1.5
End Stop Torque	clutch action
Unit Weight (max. g)	1.2

**ENVIRONMENTAL SPECIFICATIONS**

Temperature Range	- 55°C + 155°C
Climatic Category	55/125/56
Sealing	fully sealed container IP67

**POWER RATING CHART**



PERFORMANCE			
TESTS	CONDITIONS	TYPICAL VALUES AND DRIFTS	
		$\frac{\Delta RT}{RT}$ (%)	$\frac{\Delta R_{1-2}}{R_{1-2}}$ (%)
Load Life	1000 hours at rated power 90/30' - ambient temperature 85°C	± 1% Contact resistance variation : < 1% Rn	± 2%
Climatic Sequence	Phase A dry heat 125°C - 30% Pr Phase B damp heat Phase C cold -55°C Phase D damp heat 5 cycles	± 0.5%	± 1%
Long Term Damp Heat	56 days	± 0.5% Dielectric strength : 1000 V RMS Insulation resistance : > 10 <sup>4</sup> MΩ	± 1%
Rapid Temperature Change	5 cycles - 55°C at + 125°C	± 0.5 %	$\frac{\Delta V_{1-2}}{V_{1-3}} \leq \pm 1\%$
Shock	50 g 11 ms 3 successive shocks in 3 directions	± 0.1%	± 0.2%
Vibration	10 - 55 Hz 0.75 mm or 10 g during 6 hours	± 0.1%	$\frac{\Delta V_{1-2}}{V_{1-3}} \leq \pm 0.2\%$
Rotational Life	200 cycles	± 2 % Contact resistance variation : < 1% Rn	



STANDARD RESISTANCE ELEMENT DATA				
STANDARD RESISTANCE VALUES	LINEAR LAW			T.C. – 55°C + 125°C ppm/°C
	MAX. POWER AT + 85°C	MAX. WORKING VOLTAGE	MAX. CUR. THROUGH ELEMENT	
Ω	W	V	mA	
10	0.5	2.2	224	0 + 200
22		3.3	150	
47		4,8	103	
100	↓	7	70	± 100
220		10.5	47	
470		15.3	32	
1k		22.4	22	
2.2k		33.2	15	
4.7k		48.5	10	
10k		70.7	7	
22k		105	4.8	
47k		153	3.2	
100k		0.5	224	
220k	0.28	250	1.1	
470k	0.13	250	0.53	
1M	0.06	250	0.25	
2.2M	0.028	250	0.11	

### MARKING

Printed : VISHAY logo, series, style, rated ohmic value (in Ω, kΩ, MΩ), tolerance (in %), manufacturing date, marking of terminal 3.

### PACKAGING

– In magazine pack by 50 pieces (tube) code “TU50”.

### ORDERING INFORMATION

T93	XA	220kΩ	± 10 %	TU50
SERIES	VERSION	OHMIC VALUE	TOLERANCE	PACKAGING TU50: Tube