



3/8" Square Multi-Turn Cermet Trimmer



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.

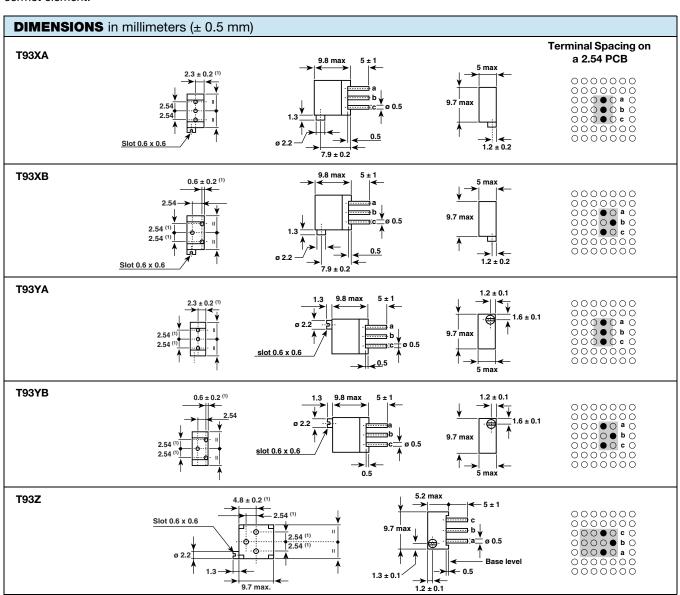
FEATURES

- Industrial grade
- 0.5 W at 70 °C



COMPLIANT

- Tests according to CECC 41000 or IEC 60393-1
- Contact resistance variation < 1 %
- Compliant to RoHS directive 2002/95/EC



Note

(1) To be measured at base level

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Resistive element	Cermet			
Electrical travel	21 turns ± 2			
Resistance range	10 Ω to 2.2 MΩ			
Standard series E3	1 - 2.2 - 4.7 and on request 1 - 2 - 5			
Sta Tolerance	10 %			
On re	guest 5 %			
	inear 0.5 W at + 70 °C			
Power rating	0.5 N 21 M 1 I 1 I 1 I 1 I 1 I 1 I 1 I			
Circuit diagram	$ \begin{array}{c} \stackrel{a}{\circ} \longrightarrow & & \stackrel{c}{\circ} \\ \stackrel{(1)}{\circ} & \stackrel{b}{\circ} \longrightarrow & cw \\ \stackrel{(2)}{\circ} & & & & & & \\ \end{array} $			
Temperature coefficient	See Standard Resistance Element table			
Limiting element voltage (linear law)	250 V			
Contact resistance variation	2 % Rn or 2 Ω			
End resistance (typical)	1 Ω			
Dielectric strength (RMS)	1000 V			
Insulation resistance (500 V _{DC})	$10^6\mathrm{M}\Omega$			

MECHANICAL SPECIFICATIONS				
Mechanical travel	23 turns ± 5			
Operating torque (max. Ncm)	1.5			
End stop torque	Clutch action			
Net weight	Approx. 0.82 g			
Wiper (actual travel)	Positioned at approx. 50 %			
Terminals	Pure Sn (code e3)			

ENVIRONMENTAL SPECIFICATIONS				
Temperature range	- 55 °C to + 155 °C			
Climatic category	55/125/56			
Sealing	Fully sealed - IP67			



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STANDARD		LINEAR LAW		
RESISTANCE VALUES	MAX. POWER AT 70 °C	MAX. WORKING VOLTAGE	MAX. CURRENT THROUGH WIPER	TCR - 55 °C + 125 °C
Ω	W	V	mA	ppm/°C
10	0.5	2.2	224	
22	0.5	3.3	150	
47	0.5	4.8	103	
100	0.5	7	70	
220	0.5	10.5	47	
470	0.5	15.3	32	
1K	0.5	22.4	22	
2.2K	0.5	33.2	15	
4.7K	0.5	48.5	10	± 100
10K	0.5	70.7	7	
22K	0.5	105	4.8	
47K	0.5	153	3.2	
100K	0.5	224	2.2	
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	

PERFORMANCES					
TEOTO	CONDITIONS	TYPICAL VALUES AND DRIFTS			
TESTS	CONDITIONS	$\Delta R_{T}/R_{T}$ (%)	$\Delta R_{1-2}/R_{1-2}$ (%)		
Load life	1000 h at rated power 90'/30' - ambient temp. 70 °C	± 1 % Contact res. 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 40 °C, 93 % RH	$\pm~0.5~\%$ Dielectric strength: 1000 V_{RMS} Insulation resistance: $>10^4~\text{M}\Omega$	± 1 %		
Rapid temperature change	5 cycles - 55 °C at + 125 °C	± 0.5 %	$\Delta V_{1-2}/\Delta V_{1-3} \le \pm 1 \%$		
Shock	50 g at 11 ms 3 successive shocks in 3 directions	± 0.1 %	± 0.2 %		
Vibration	10 Hz to 55 Hz 0.75 mm or 10 g during 6 h	± 0.1 %	$\Delta V_{1-2}/\Delta V_{1-3} \le \pm 0.2 \%$		
Rotational life	200 cycles	± 4 % Contact res. variation: < 1 % Rn	-		

MARKING

- VISHAY trademark
- Model
- Style
- Ohmic value (in Ω , $k\Omega$, $M\Omega$)
- Tolerance (in %)
- Manufacturing date
- Marking of terminal 3

PACKAGING

• In tube of 50 pieces code T20 (TU50)

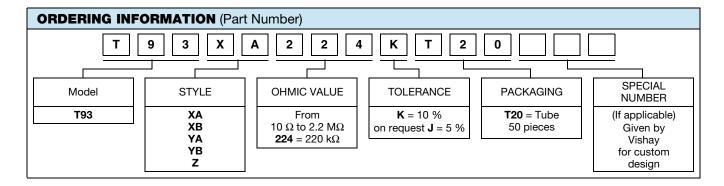
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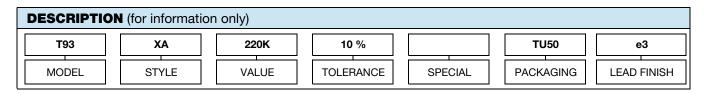
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