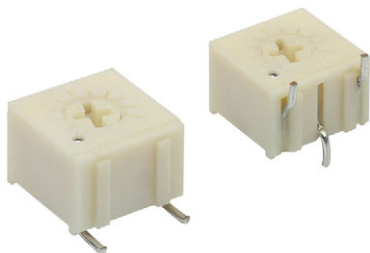




# Single-Turn Surface-Mount 1/4" Square Cermet Trimmers, Sealed



## FEATURES

- 0.5 W at 70 °C
- Professional and industrial grade
- Wide ohmic range (10 Ω to 2 MΩ)
- Small size for optimum packaging density
- Top and side adjust styles
- Material categorization: for definitions of compliance please see [www.vishay.com/doc?99912](http://www.vishay.com/doc?99912)



**RoHS**  
COMPLIANT

## LINKS TO ADDITIONAL RESOURCES

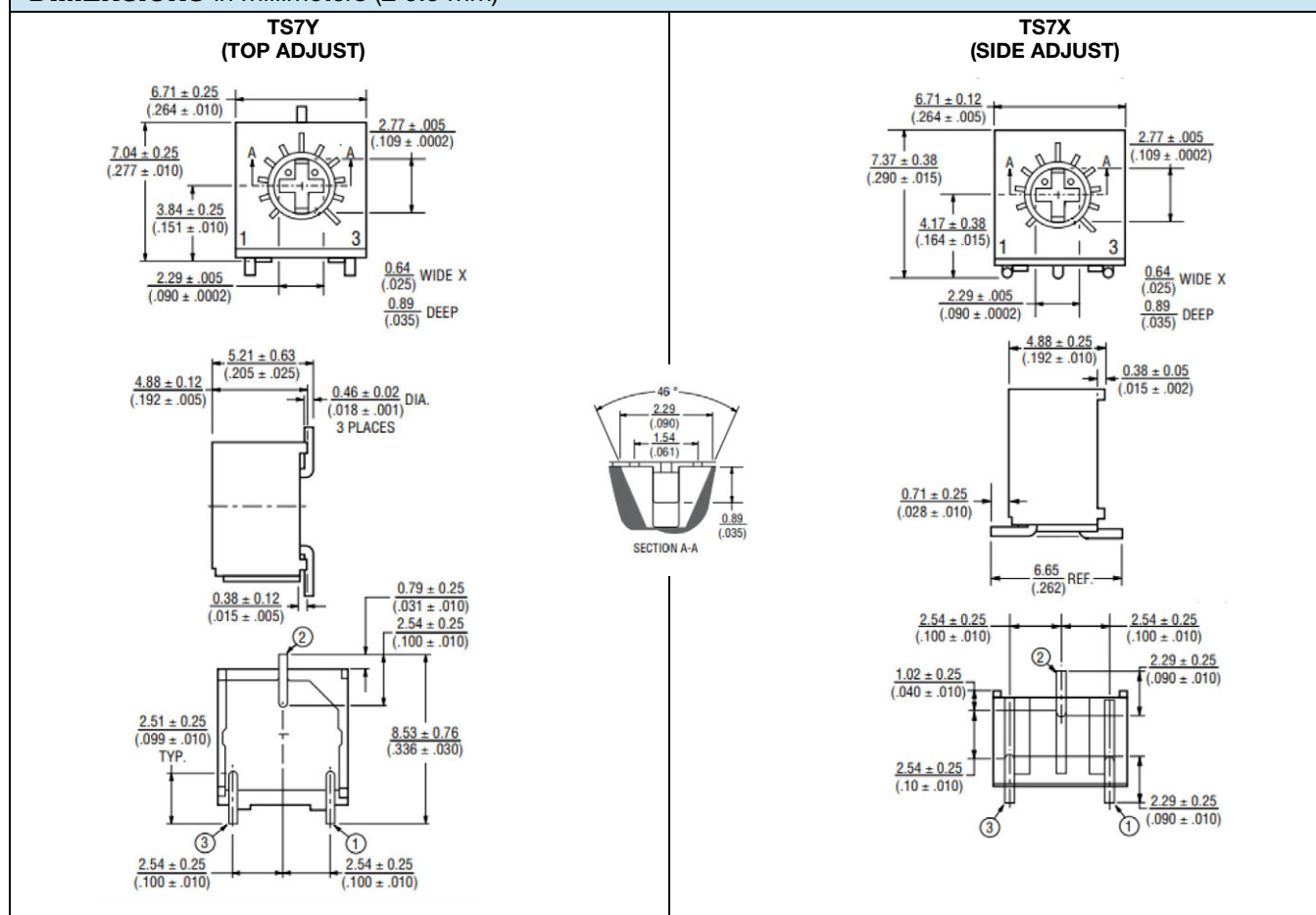


3D Models

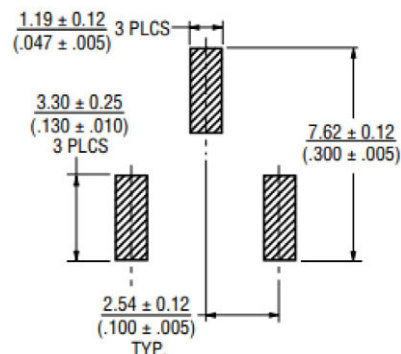
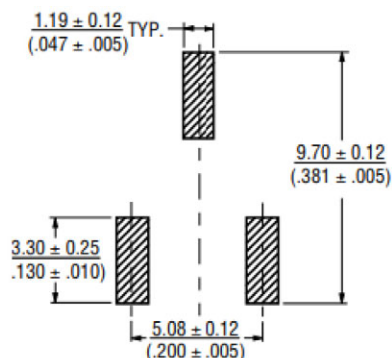
The TS7 trimming potentiometer has been designed for surface-mount applications and offers volumetric efficiency 6.7 mm x 7 mm x 5 mm with high performance and stability.

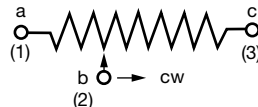
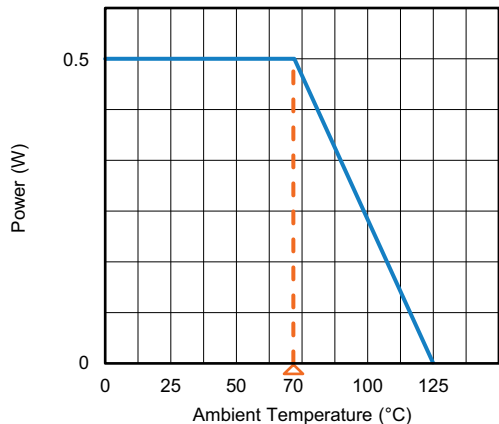
The TS7 design is sealed to withstand harsh environments and standard board wash processing, compatible with automated PCB assembly (pick and place), withstands standard reflow soldering processes and designed automatic machine adjust interface.

## DIMENSIONS in millimeters (± 0.5 mm)



**DIMENSIONS** in millimeters ( $\pm 0.5$  mm)

**RECOMMENDED SOLDERING AREA**

**ELECTRICAL SPECIFICATIONS**

Resistive element	Cermet
Electrical travel	240° nom.
Resistance range	10 $\Omega$ to 2 M $\Omega$ (see "Standard Resistance Element Data" table)
Standard series	1 - 2 - 5
Tolerance standard	$\pm 10$ %
Circuit diagram	
Power rating	<p>linear</p> <p>0.5 W at +70 °C</p> 
Temperature coefficient	See "Standard Resistance Element Data" table
Limiting element voltage	300 V
Contact resistance variation (typical)	3 % or 3 $\Omega$ max.
End resistance (typical)	1 % or 2 $\Omega$ max.
Dielectric strength	900 V <sub>AC</sub>
Insulation resistance	1000 M $\Omega$ min. at 500 V <sub>DC</sub>

**MECHANICAL SPECIFICATIONS**

Mechanical travel	270 mon.
Operating torque (max. Ncm)	2.1
End stop torque	4.9
Unit weight (max. g)	0.56
Wiper (actual travel)	Positioned at approximately 50 %

**ENVIRONMENTAL SPECIFICATIONS**

Temperature range	-55 °C to +125 °C
Sealing	Sealed container. 85 °C Fluorinert / 60 s
MSL level	3

**SOLDERING RECOMMENDATIONS**Recommended reflow profile 2, see application note [www.vishay.com/doc?52029](http://www.vishay.com/doc?52029)**PERFORMANCES**

TESTS	CONDITIONS	TYPICAL VALUES AND DRIFTS
Load life	1000 h at rated power, ambient temperature +70 °C	Total resistance shift = $\pm 3\%$ Contact resistance variation = $3\ \Omega$ or $\pm 3\%$ whichever is greater
Humidity	MIL-STD-202 method 103 96 hours	Total resistance shift = $\pm 2\%$ Insulation resistance = 10 M $\Omega$
Thermal shock	5 cycles	Total resistance shift = $\pm 2\%$ Voltage ratio shift = $\pm 2\%$
Rotational cycling	200 cycles	Total resistance shift = $\pm 4\%$ Contact resistance variation = $3\ \Omega$ or $\pm 3\%$ whichever is greater
Shock	100 g, 6 shocks in each axis, 3 in each direction	Total resistance shift = $\pm 1\%$ Voltage ratio shift = $\pm 1\%$
Vibration	4 sweeps at 30 g in each of the three axis, 15 minutes per sweep	Total resistance shift = $\pm 1\%$ Voltage ratio shift = $\pm 1\%$

**Note**

- Nothing stated herein shall be construed as a guarantee of quality or durability

**STANDARD RESISTANCE ELEMENT DATA**

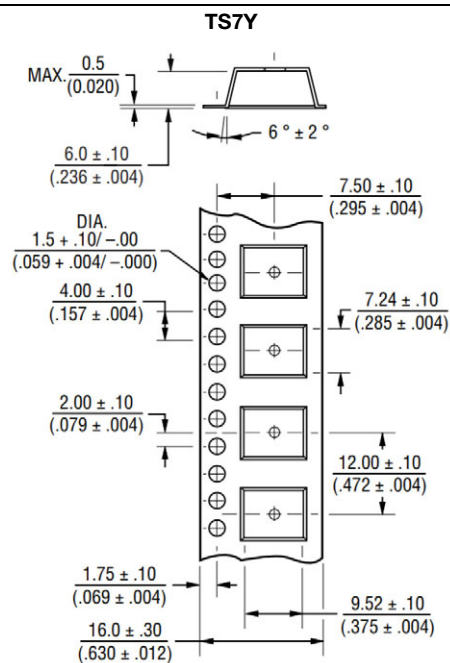
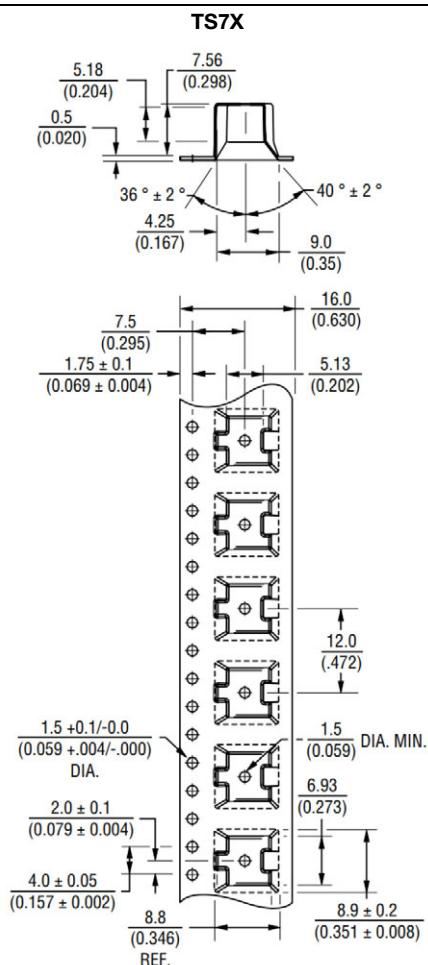
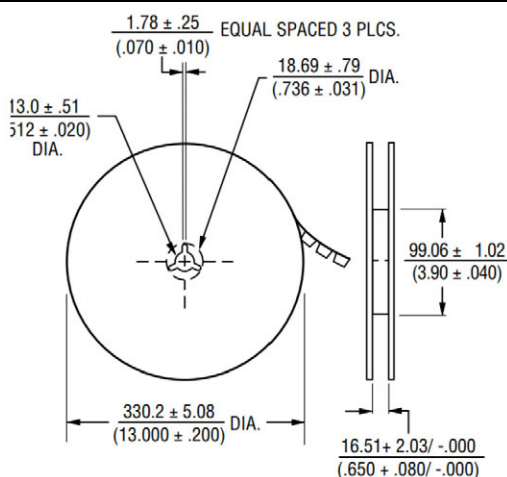
RESISTANCE CODE	STANDARD RESISTANCE VALUES	LINEAR LAW			TYPICAL TCR -55 °C +125 °C  ppm/°C
		MAX. POWER AT 70 °C	MAX. WORKING VOLTAGE	MAX. CURRENT THROUGH WIPER	
	$\Omega$	W	V	mA	
100	10	0.5	2.24	223.6	$\pm 100$
200	20	0.5	3.16	158.1	
500	50	0.5	5.00	100.0	
101	100	0.5	7.07	70.7	
201	200	0.5	10.00	50.0	
501	500	0.5	15.81	31.6	
102	1000	0.5	22.36	22.4	
202	2000	0.5	31.62	15.8	
502	5000	0.5	50.00	10.0	
103	10 000	0.5	70.71	7.1	
203	20 000	0.5	100.00	5.0	
253	25 000	0.5	111.80	4.5	
503	50 000	0.5	158.11	3.2	
104	100 000	0.5	223.61	2.2	
204	200 000	0.45	300.00	1.50	
254	250 000	0.36	300.00	1.20	
504	500 000	0.18	300.00	0.6	
105	1 000 000	0.09	300.00	0.3	
205	2 000 000	0.05	300.00	0.2	

**MARKING**

- Vishay trademark
- Model
- Ohmic value
- Manufacturing date

**PACKAGING** in millimeters (inches)

On tape and reel, by 500 pieces for TS7X and by 750 pieces for TS7Y

**TAPE**

**REEL**




### ORDERING INFORMATION (part number)

T	S	7	Y	1	0	3	K	R	3	2				
MODEL		STYLE		OHMIC VALUE		TOLERANCE		PACKAGING		SPECIAL NUMBER				
TS7		Y (top adjust) X (side adjust)		From 10 $\Omega$ to 2 M $\Omega$ 103 = 10 k $\Omega$		K = $\pm$ 10 %		R10 = reel 500 pieces R32 = reel 750 pieces		(If applicable) Given by Vishay for custom design				

### DESCRIPTION (for information only)

TS7	Y	10K	10 %		TR	e3
MODEL	STYLE	VALUE	TOLERANCE	SPECIAL	PACKAGING	LEAD (Pb)-FREE

### RELATED DOCUMENTS

#### APPLICATION NOTES

Potentiometers and Trimmers	<a href="http://www.vishay.com/doc?51001">www.vishay.com/doc?51001</a>
Guidelines for Vishay Sfernice Resistive and Inductive Components	<a href="http://www.vishay.com/doc?52029">www.vishay.com/doc?52029</a>



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