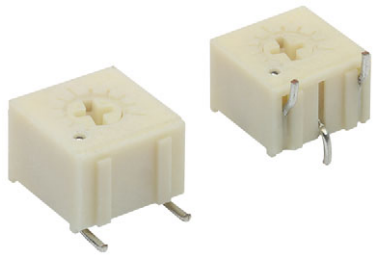
Single-Turn Surface-Mount 1/4" Square Cermet Trimmers, Sealed



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

RoHS COMPLIANT

LINKS TO ADDITIONAL RESOURCES

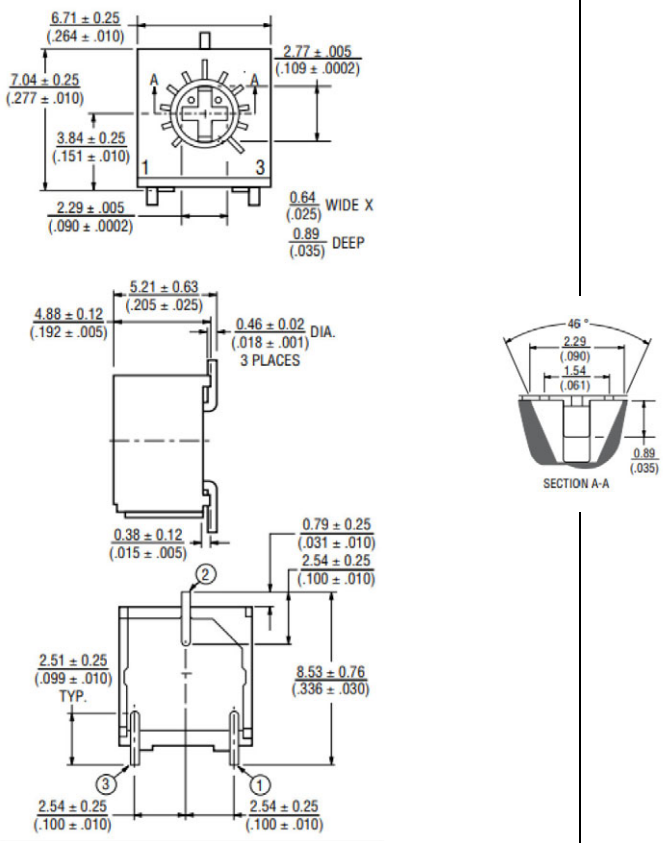
3D Models

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.

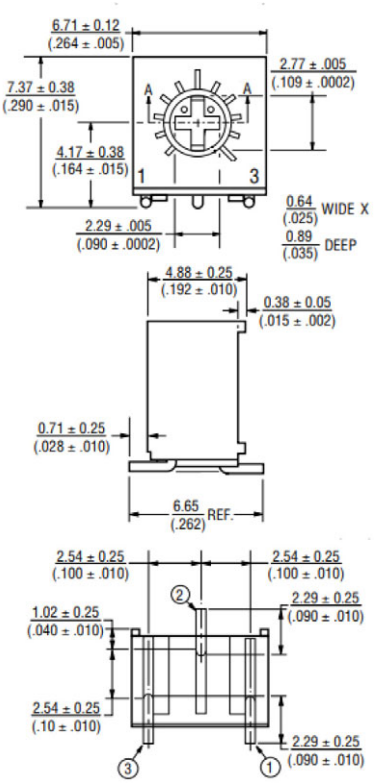
The TS7 design is sealed to withstand harsh environments and standard board wash processing, compatible with automated PCB assembly (pick and place), withstands standard reflow soldering processes and designed automatic machine adjust interface.

DIMENSIONS in millimeters (± 0.5 mm)

TS7Y (TOP ADJUST)

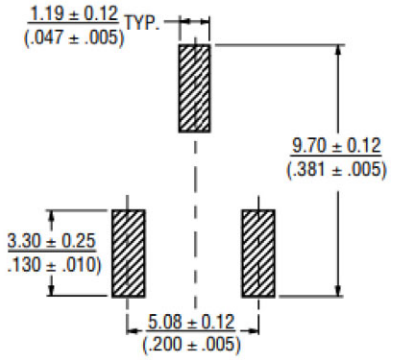


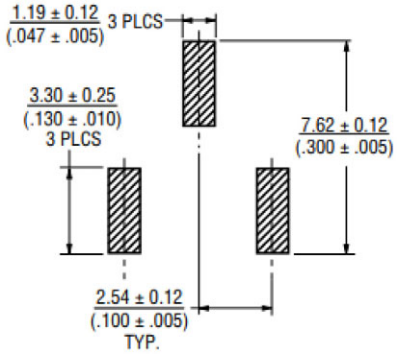
TS7X (SIDE ADJUST)



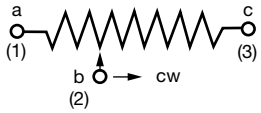
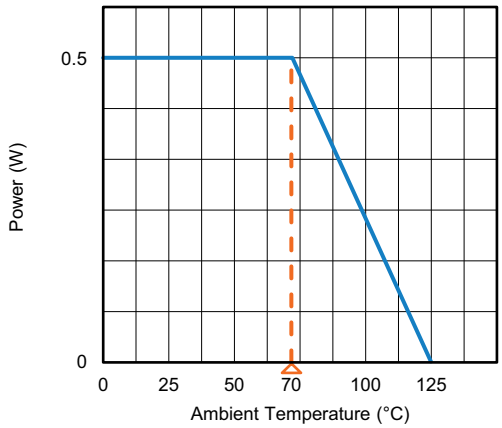
DIMENSIONS in millimeters (± 0.5 mm)

RECOMMENDED SOLDERING AREA





ELECTRICAL SPECIFICATIONS

Resistive element	Cermet
Electrical travel	240° nom.
Resistance range	10 Ω to 2 MΩ (see “Standard Resistance Element Data” table)
Standard series	1 - 2 - 5
Tolerance standard	± 10 %
Circuit diagram	
Power rating linear	0.5 W at +70 °C 
Temperature coefficient	See “Standard Resistance Element Data” table
Limiting element voltage	300 V
Contact resistance variation (typical)	3 % or 3 Ω max.
End resistance (typical)	1 % or 2 Ω max.
Dielectric strength	900 V_{AC}
Insulation resistance	1000 MΩ min. at 500 V_{DC}

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

PERFORMANCES

TESTS	CONDITIONS	TYPICAL VALUES AND DRIFTS
Load life	1000 h at rated power, ambient temperature +70 °C	Total resistance shift = ± 3 % Contact resistance variation = 3 Ω or ± 3 % whichever is greater
Humidity	MIL-STD-202 method 103 96 hours	Total resistance shift = ± 2 % Insulation resistance = 10 MΩ
Thermal shock	5 cycles	Total resistance shift = ± 2 % Voltage ratio shift = ± 2 %
Rotational cycling	200 cycles	Total resistance shift = ± 4 % Contact resistance variation = 3 Ω or ± 3 % whichever is greater
Shock	100 *g*, 6 shocks in each axis, 3 in each direction	Total resistance shift = ± 1 % Voltage ratio shift = ± 1 %
Vibration	4 sweeps at 30 *g* in each of the three axis, 15 minutes per sweep	Total resistance shift = ± 1 % Voltage ratio shift = ± 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
		MAX. POWER AT 70 °C	MAX. WORKING VOLTAGE	MAX. CURRENT THROUGH WIPER	
	Ω	W	V	mA	ppm/°C
100	10	0.5	2.24	223.6	± 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

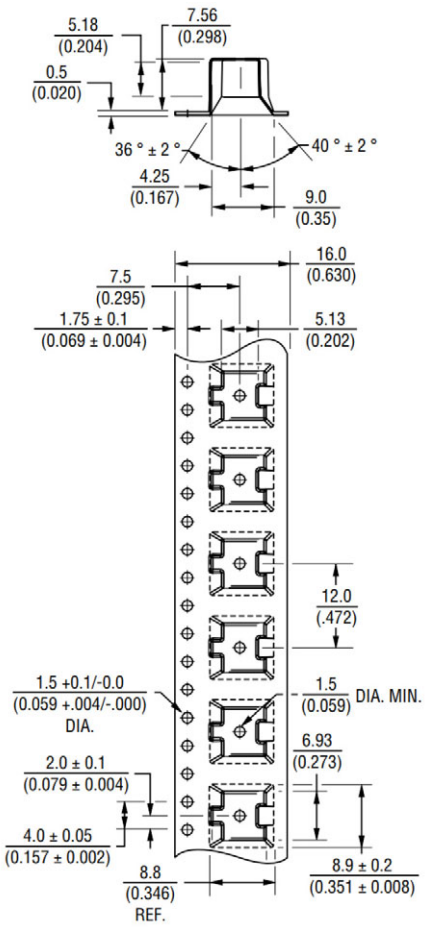
For technical questions, contact: sferpottrimmers@vishay.com

PACKAGING in millimeters (inches)

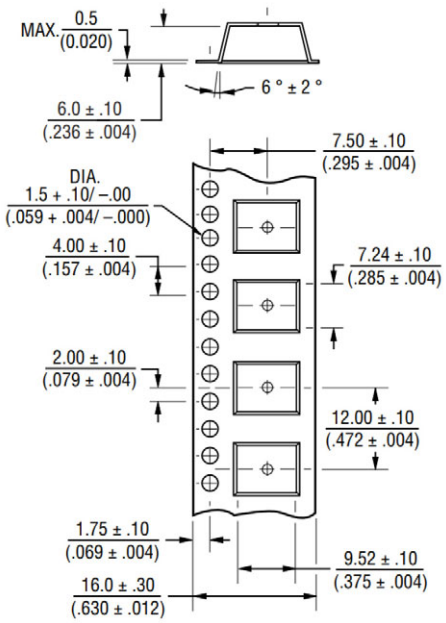
On tape and reel, by 500 pieces for TS7X and by 750 pieces for TS7Y

TAPE

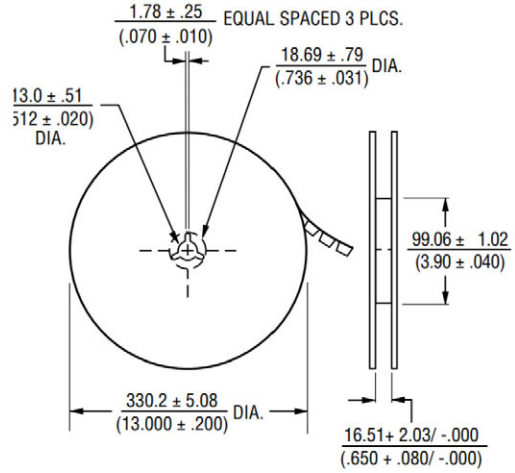
TS7X



TS7Y



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 Ω to 2 MΩ **103** = 10 kΩ	**K** = ± 10 %	**R10** = tape and reel 500 pieces **R32** = tape and 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	www.vishay.com/doc?51001
Guidelines for Vishay Sfernice Resistive and Inductive Components	www.vishay.com/doc?52029

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