

# Cermet Trimmers, Surface Mount, 4.0 mm Square, Single Turn, Industrial Grade



## FEATURES

- 0.25 W at 70 °C
- Fully sealed to withstand board washing
- Compatible with popular vacuum pick-and-place equipment
- J-hook and gull-wing configurations
- 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

DIMENSIONS in millimeters (inches) ± 0.25 mm (± 0.010")		
<b>TS4YJ</b> <p>Adjustment cross slot 2.45 (0.096) long x 0.510 (0.020) wide</p> <p>4.50 (0.177)</p> <p>2.55 (0.100)</p> <p>0.200 (0.008) typ.</p> <p>5.00 (0.197)</p> <p>1.30 ± 0.100 (0.051 ± 0.004)</p> <p>0.800 ± 0.100 (0.031 ± 0.004) 2 places</p> <p>2.35 (0.093)</p> <p>1.0 (0.040) 3 places</p>		<p>2.30 (0.091)</p> <p>1.30 (0.051) 2 places</p> <p>4.0 (0.157)</p> <p>2.0 (0.079)</p> <p>2.0 (0.079) 3 places</p> <p>Recommended PCB footprint</p>
<b>TS4YL</b> <p>Adjustment cross slot 2.45 (0.096) long x 0.510 (0.020) wide</p> <p>4.50 (0.177)</p> <p>2.55 (0.100)</p> <p>0.200 (0.008) typ.</p> <p>5° max. typ.</p> <p>6.20 (0.244)</p> <p>1.30 ± 0.100 (0.051 ± 0.004)</p> <p>0.800 ± 0.100 (0.031 ± 0.004) 2 places</p> <p>2.35 (0.093)</p> <p>0.197 [5.0]</p>		<p>2.30 (0.091)</p> <p>1.30 (0.051) 2 places</p> <p>5.5 (0.217)</p> <p>2.0 (0.079)</p> <p>1.30 (0.051) 3 places</p> <p>Recommended PCB footprint</p>

<b>ELECTRICAL SPECIFICATIONS</b>	
<b>Resistance range</b>	10 $\Omega$ to 2 M $\Omega$ (see Standard Resistance table)
<b>Tolerance</b>	$\pm 20$ % standard
<b>End resistance</b>	1 % or 2 $\Omega$ maximum, whichever is greater
<b>Temperature coefficient</b>	$\pm 100$ ppm/ $^{\circ}$ C
<b>Power rating</b>	0.25 W at +70 $^{\circ}$ C (300 V maximum), 0 W at +125 $^{\circ}$ C
<b>Circuit diagram</b>	
<b>Contact resistance variation (CRV)</b>	1 % or 3 $\Omega$
<b>Resolution</b>	Infinite
<b>Insulation resistance (500 V<sub>DC</sub>)</b>	100 M $\Omega$ minimum
<b>Dielectric strength (RMS)</b>	Sea level 500 V <sub>AC</sub> (1 minute)
<b>Adjustment angle</b>	210 $^{\circ}$ nominal

**MECHANICAL SPECIFICATIONS**

Mechanical angle	240° nominal
Operating torque (typical)	1.8 Ncm
End stop torque (typical)	3.0 Ncm
Weight	Approximately 0.01 oz.
Wiper	Positioned at approx. 50 %

**ENVIRONMENTAL SPECIFICATIONS**

Temperature range	-55 °C to +125 °C
MSL level	1

**PERFORMANCES**

TESTS	CONDITIONS	TYPICAL VALUES AND DRIFTS		
		$\Delta R_T/R_T$ (%)	$\Delta V_{1-2}/V_{1-3}$ (%)	OTHER
Vibration	20 g's	± 1 %	± 1 %	-
Shock	100 g's	± 1 %	± 1 %	-
Electrical endurance	At 70 °C rated power 1000 h	± 3 %	-	-
Mechanical endurance	100 cycles	± 3 %	-	-
Change of temperature	5 cycles	± 2 %	± 1 %	-
Humidity	90 % to 98 % relative humidity 10 cycles, 240 h	± 2 %	-	Insulation resistance: 10 MΩ

**Note**

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

**SOLDERING RECOMMENDATIONS**

Recommended reflow profile 2, see Application Note [www.vishay.com/doc?52029](http://www.vishay.com/doc?52029)

**TWO DIGIT DATE CODE**

YEAR					
1990	A	2000	M	2010	A
1991	B	2001	N	2011	B
1992	C	2002	P	2012	C
1993	D	2003	R	2013	D
1994	E	2004	S	2014	E
1995	F	2005	T	2015	F
1996	H	2006	U	2016	H
1997	J	2007	V	2017	J
1998	K	2008	W	2018	K
1999	L	2009	X	2019	L
MONTH					
January	1	July	7		
February	2	August	8		
March	3	September	9		
April	4	October	O		
May	5	November	N		
June	6	December	D		

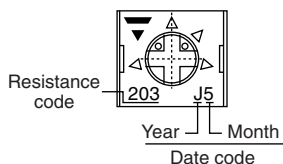
**STANDARD RESISTANCE ELEMENT DATA**

RESISTANCE Ω	RESISTANCE CODE	TYPICAL TCR (ppm/°C)
10	100	± 100
20	200	
50	500	
100	101	
200	201	
500	501	
1K	102	
2K	202	
5K	502	
10K	103	
20K	203	
50K	503	
100K	104	
200K	204	
500K	504	
1M	105	
2M	205	

**Note**

- Special resistance available

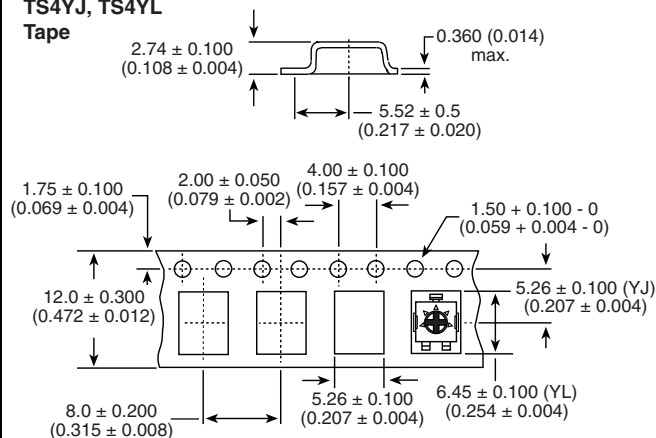
## PART MARKING



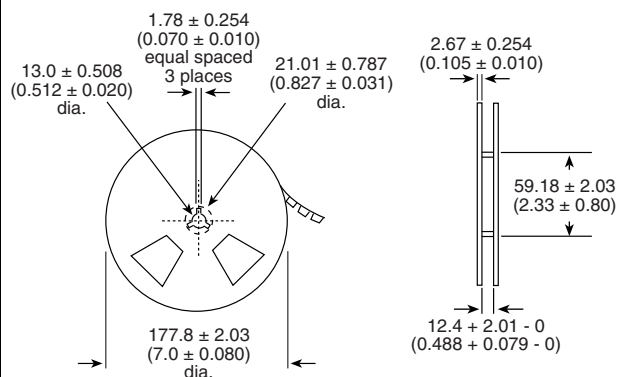
- Manufacturers code
- Resistance code
- Date code

## PACKAGING in millimeters (inches)

### TS4YJ, TS4YL Tape



### TS4YJ, TS4YL Reel



500 pieces per 7" reel standard. Meets EIA Specifications 481.

## ORDERING INFORMATION (part number)

T	S	4	Y	L	5	0	2	M	R	1	0				
MODEL		STYLE		OHMIC VALUE		TOLERANCE		PACKAGING		SPECIAL NUMBER					
TS4		YJ YL		From 10 Ω to 2 MΩ 502 = 5 kΩ		M = ± 20 %		R10 = reel 500 pieces		(If applicable) Given by Vishay for custom design					

## DESCRIPTION (for information only)

TS4	YL	5K	20 %		TR	e3
MODEL	STYLE	VALUE	TOLERANCE	SPECIAL	PACKAGING	LEAD FINISH

## 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>

## ACCESSORIES

Screwdrivers (to order separately)	<a href="http://www.vishay.com/doc?57015">www.vishay.com/doc?57015</a>
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