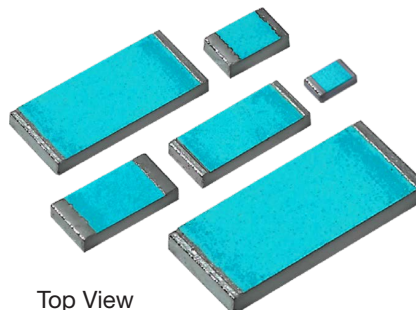




**Ultra High-Precision TRSM Wrap-Around Chip Resistors,
Z-Foil Technology Configuration**
with TCR of ± 0.2 ppm/ $^{\circ}\text{C}$ and
Improved Load-Life Stability of 0.0025% (25 ppm)

FEATURES

- Temperature coefficient of resistance (TCR):
 ± 0.2 ppm/ $^{\circ}\text{C}$ typical (-55°C to $+125^{\circ}\text{C}$, $+25^{\circ}\text{C}$ ref.)
- Resistance tolerance: to $\pm 0.01\%$
- Power coefficient “ ΔR due to self heating”: 5 ppm at rated power
- Power rating: to 800 mW at $+70^{\circ}\text{C}$
- Load life stability:
 $\pm 0.0025\%$ typical at 70°C , 2000 h at rated power
 $\pm 0.005\%$ typical at 70°C , 10,000 h at rated power
- Resistance range: 5 Ω to 240 k Ω (for higher and lower values, please contact us)
- AEC-Q200 qualified
- Screening in accordance with EEE-INST-002 and MIL-PRF-32663 available (see datasheet resistor models 303261 to 303266)



Top View



RoHS*
COMPLIANT

Tolerance vs. Resistance Value

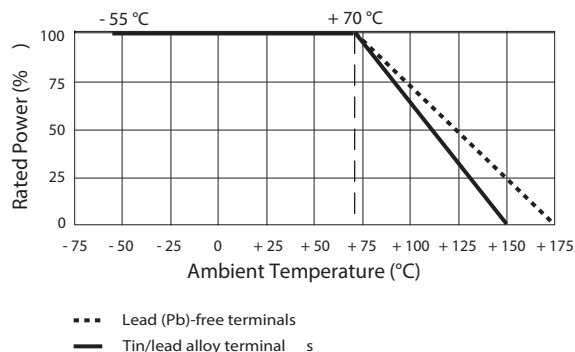
Resistance Value (Ω)	Tolerance (%)
250 to 240k	$\pm 0.01\%$
100 to <250	$\pm 0.02\%$
50 to <100	$\pm 0.05\%$
25 to <50	$\pm 0.1\%$
10 to <25	$\pm 0.25\%$
5 to <10	$\pm 0.5\%$

Specifications

Chip Size	Rated Power at $+70^{\circ}\text{C}$ (mW)	Max. Working Voltage ($\leq \sqrt{P \times R}$)	Resistance Range (Ω)	Typ. TCR and Spread, -55°C to $+125^{\circ}\text{C}$, $+25^{\circ}\text{C}$ Ref. (ppm/ $^{\circ}\text{C}$)	Max. Weight (mg)
0603	150	47 V	100 to 15k	$\pm 0.2 \pm 1.8$ ($\geq 100 \Omega$) $\pm 0.2 \pm 2.8$ (50 Ω to $<100 \Omega$) $\pm 0.2 \pm 3.8$ (10 Ω to $<50 \Omega$) $\pm 0.2 \pm 7.8$ (5 Ω to $<10 \Omega$)	4
0805	300	94 V	5 to 30k		6
1206	300	90 V	5 to 25k		11
1506	300	110 V	5 to 30k		12
2010	500	190 V	5 to 70k		27
2018	600	402 V	5 to 180k		48
2512	800	438 V	5 to 240k		40



Power Derating Curve



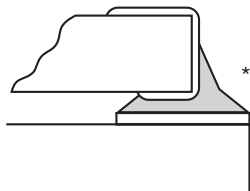
Performances

Test or Conditions	R Limits of TRSM Series	
	Typical	Performance Limits ⁽¹⁾
Thermal Shock, 100 x (–65°C to +150°C)	±0.005% (50 ppm)	±0.01% (100 ppm)
Low Temperature Operation, –65°C, 45 min at P _{nom}	±0.0025% (25 ppm)	±0.005% (50 ppm)
Short Time Overload, 6.25 x Rated Power, 5 s	±0.005% (50 ppm)	±0.01% (100 ppm)
High Temperature Exposure, +150°C, 100 h	±0.0025% (25 ppm)	±0.005% (50 ppm)
Resistance to Soldering Heat, +245°C for 5 s (SnPb), +245°C for 30 s (Pb Free)	±0.005% (50 ppm)	±0.01% (100 ppm)
Moisture Resistance	±0.003% (30 ppm)	±0.01% (100 ppm)
Load Life Stability, +70°C for 2000 h at Rated Power	±0.0025% (25 ppm)	±0.005% (50ppm)
Load Life Stability, +70°C for 10,000 h at Rated Power	±0.005% (50 ppm)	±0.04% (400ppm)

⁽¹⁾ As shown +0.01 Ω to allow for measurement errors at low values.

Recommended Mounting

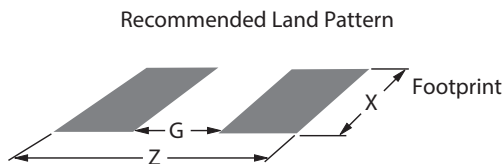
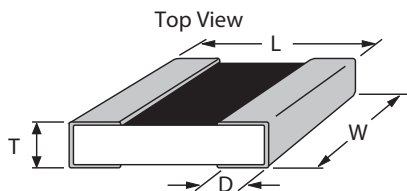
1. IR and vapor phase reflow are recommended.
2. Avoid the use of cleaning agents that attack epoxy resins, which form part of the resistor construction.
3. Vacuum pick up is recommended for handling.
4. If the use of a soldering iron becomes necessary, precautionary measures should be taken to avoid any possible damage/overheating of the resistor.



* Recommendation: The solder fillet profile should be such as to avoid running over the top metallization.



Dimensions in inches (millimeters)



Note: Recommended stencil thickness 0.2 mm/0.00787 inch minimum

Chip Size	L ±0.005 (0.13)	W ±0.005 (0.13)	Thickness Maximum	D ±0.005 (0.13)	Z ⁽¹⁾	G ⁽¹⁾	X ⁽¹⁾
0603	0.063 (1.60)	0.032 (0.81)	0.025 (0.64)	0.011 (0.28)	0.102 (2.59)	0.031 (0.78)	0.031 (0.78)
0805	0.080 (2.03)	0.050 (1.27)		0.015 (0.38)	0.122 (3.10)	0.028 (0.71)	0.050 (1.27)
1206	0.126 (3.20)	0.062 (1.57)		0.020 (0.51)	0.175 (4.45)	0.059 (1.50)	0.071 (1.80)
1506	0.150 (3.81)	0.062 (1.57)		0.020 (0.51)	0.199 (5.05)	0.083 (2.11)	0.071 (1.80)
2010	0.198 (5.03)	0.097 (2.46)		0.025 (0.64)	0.247 (6.27)	0.115 (2.92)	0.103 (2.62)
2512	0.249 (6.32)	0.127 (3.23)		0.032 (0.81)	0.291 (7.39)	0.150 (3.81)	0.127 (3.23)

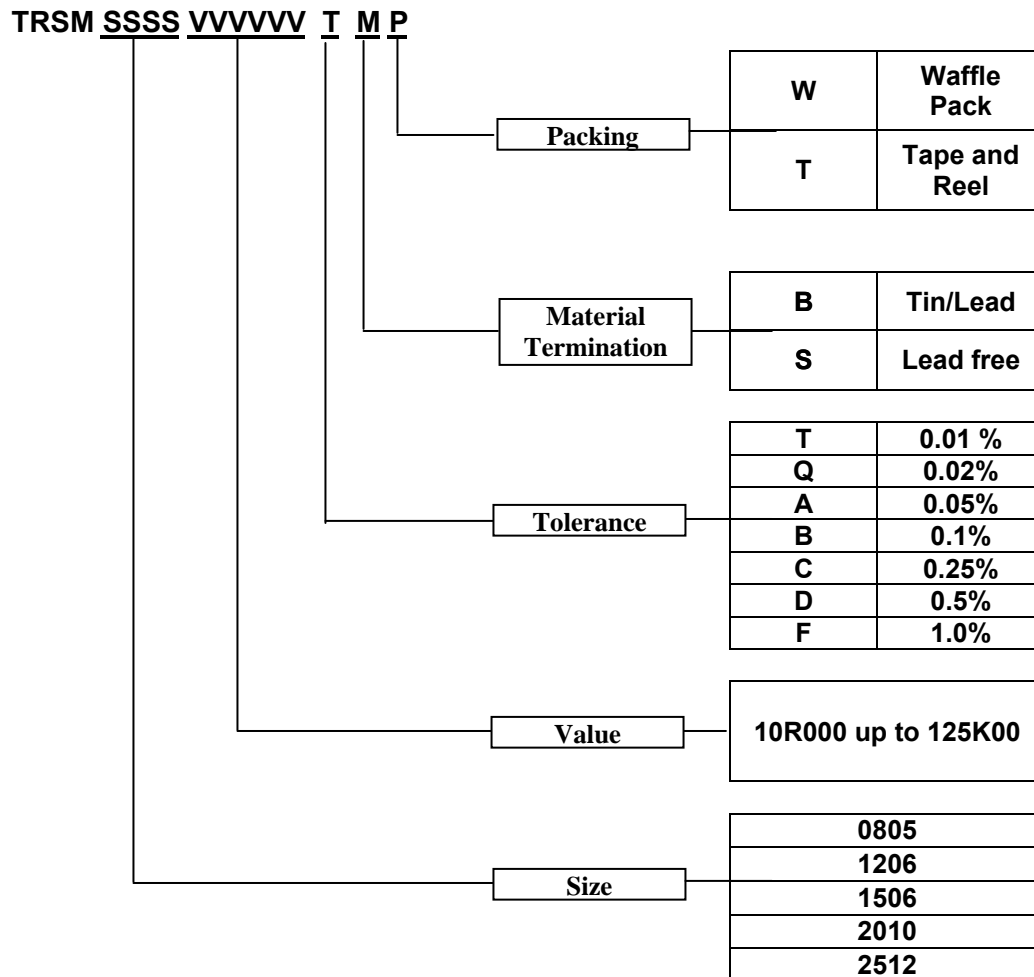
⁽¹⁾ Land Pattern Dimensions are per IPC-7351A.



TRSM Series

Surface Mount Resistors

ORDERING INFORMATION



Example:

To order TRSM resistors, size 2010, with a resistance value of 1,002.5 ohms, tolerance 0.02%, with a lead free termination, and taped and reeled the ordering information would be:

TRSM2010 1K0025 QST