



Product Family: [High Resistance Thick Film Chip Resistor](#)

Part Number Series: [TFM Series](#)

	<p>Construction:</p> <ul style="list-style-type: none"> • High purity alumina substrate • Thick Film resistive element • Wrap around electrodes • RoHS 2011/65/EU compliant 	<p>Features:</p> <ul style="list-style-type: none"> • 0402, 0603, 0805, 1206 sizes • Resistances from 10MΩ to 100MΩ • Tolerances of ±1.0% and ±5.0% • TCR's of ±200 to ±300ppm/°C • Reduced size of final equipment • Maximum reflow temperature = 260°C ±5°C, MSL = 1
--	--	---

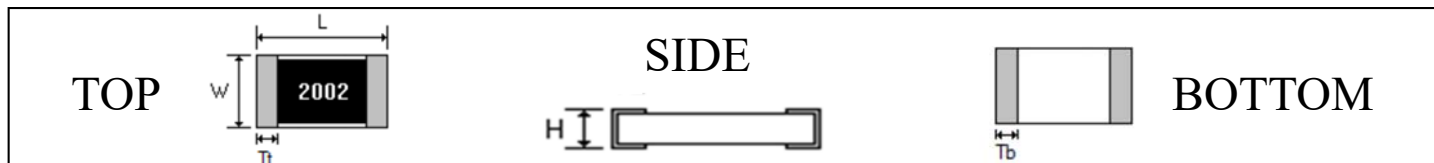
Description:

These high resistance thick film chip resistors are designed for power supply, PDA, digital meters, computers and palmtop computers.

Product Dimensions:

Dimension (Metric)	TFM0402 (0510)	TFM0603 (0816)	TFM0805 (2012)	TFM1206 (1632)
L	0.039 ±0.002 (1.00 ± 0.05)	0.063 ±0.004 (1.60 ± 0.10)	0.079 ±0.004 (2.00 ± 0.10)	0.122 ± 0.006 (3.10 ± 0.15)
W	0.020 ±0.002 (0.50 ± 0.05)	0.031 ±0.004 (0.80 ± 0.10)	0.049 ±0.004 (1.25 ± 0.10)	0.063 ±0.006 (1.60 ± 0.15)
H	0.014 ±0.002 (0.35 ± 0.05)	0.018 ±0.006 (0.45 ± 0.15)	0.020 ±0.006 (0.50 ± 0.15)	0.022 ±0.004 (0.55 ± 0.10)
Tb	0.010 ± 0.004 (0.25 ± 0.10)	0.012 ±0.006 (0.30 ± 0.15)	0.016 ±0.008 (0.40 ± 0.20)	0.020 ±0.010 (0.50 ± 0.25)
Tt	0.008 ±0.004 (0.20 ± 0.10)	0.012 ±0.004 (0.30 ± 0.10)	0.016 ±0.008 (0.40 ± 0.20)	0.020 ±0.010 (0.50 ± 0.25)

All dimensions are shown in inches. Metric sizes are shown in parenthesis.



Part Numbering: Ex: TFM0603S1005J-T5

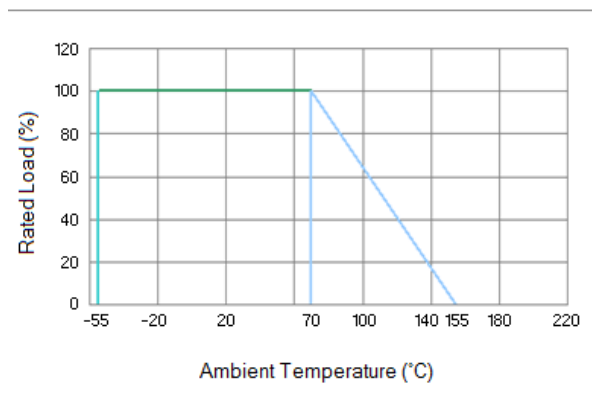
Product Designator	Size W x L (Metric)	Temp. Coefficient of Resistance (TCR)	Resistance Value	Resistance Tolerance	T&R Packaging Quantity
TFM	0402 0603, 0805 1206	S = ±200 ppm/°C W = ±300 ppm/°C (TCR is dictated by resistance value. Refer to electrical table)	4 digits with the first 3 being significant. The last digit specifies the number of zeros. "R" denotes decimal position as necessary	F = ±1.0% J = ±5.0%	-T5 = 5,000 -T10 = 10,000 (see electrical table for offerings)

Examples:

Part Number	English Size (Metric)	TCR	Resistance (ohms)	Tolerance	Tape Qty
TFM0603S1005J-T5	0603 (1608)	S = ±200ppm/°C (refer to electrical table)	1005 = 10,000,000	J = ±5.0%	T5 = 5,000

Electrical Specifications:

Type	TFM0402	TFM0603	TFM0805	TFM1206
English Size	0402	0603	0805	1206
Power	1/16 Watt	1/10 Watt	1/8 Watt	1/4 Watt
Resistance Range (Ω)	10M Ω - 30M Ω	10M Ω - 100M Ω		
Resistance Offering	E24 Values	E-24 or E96 Values		
Tolerance% (code)	$\pm 5.0\%$ (J)	$\pm 1.0\%$ (F) or $\pm 5.0\%$ (J)		
TCR ppm/ $^{\circ}$ C (Code)	± 300 ppm/ $^{\circ}$ C (W)	± 200 ppm/ $^{\circ}$ C (S)		
Max Voltage DC or RMS	50V		150V	200V
Operating Temp. Range	-55 $^{\circ}$ C ~ 155 $^{\circ}$ C (refer to derating curve)			
Packaging	10,000 pcs/reel	5,000 pcs/reel		

Power Derating Curve:**Reliability Specifications:**

Test	Test Method	Specification
Short Time Overload	Applied voltage: 2.5X rated voltage or 2X maximum operating voltage, whichever is less. Test duration: 5 seconds	1% Tol: $\pm(1\%+0.1\Omega)$ 5% Tol: $\pm(2\%+0.1\Omega)$
Resistance to Soldering Heat	Dip into 260 $^{\circ}$ C solder bath until fully immersed 10 \pm 1 seconds	1% Tol: $\pm(0.5\%+0.01\Omega)$ 5% Tol: $\pm(1\%+0.01\Omega)$
Load Life	Test Temperature: 70 $^{\circ}$ C Applied voltage: rated voltage Test period: 1000 hours with power cycling as follows: 90 min. power ON/30 min. power OFF,	1% Tol: $\pm(1\%+0.1\Omega)$ 5% Tol: $\pm(3\%+0.1\Omega)$
Moisture Load Life	Test Condition: 40 $^{\circ}$ C/95% RH Applied voltage: rated voltage Test period: 1000 hours with power cycling as follows: 90 min. power ON/30 min. power OFF	1% Tol: $\pm(1\%+0.1\Omega)$ 5% Tol: $\pm(3\%+0.1\Omega)$
Temperature Cycle	Repeat 5 cycles as follows: -55 $^{\circ}$ C(30 min.) / Room temp (2 min) / +155 $^{\circ}$ C(30 min.) / Room temp (2 min)	1% Tol: $\pm(0.5\%+0.01\Omega)$ 5% Tol: $\pm(1\%+0.01\Omega)$
Solderability	Dip into 235 $^{\circ}$ C solder bath until fully immersed (SAC solder) 2 \pm 0.5 seconds	Minimum 95% coverage of new solder