TC05 Series Thin Film Resistors

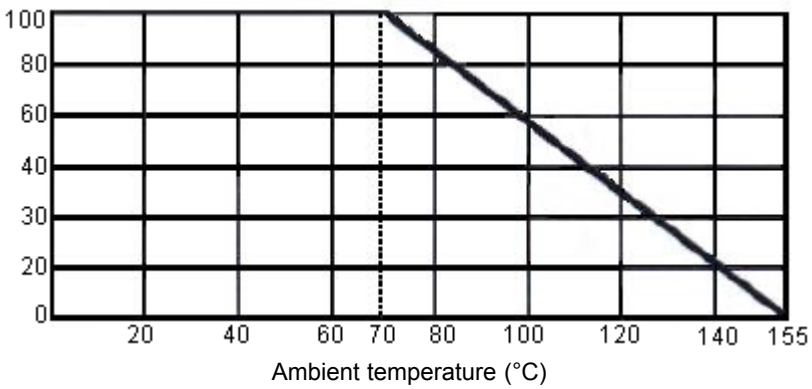
Specification Table

Type	Power Rating (W)	Maximum Working Voltage (V)	Maximum Overload Voltage (V)	Temperature Range (°C)	Ambient Temperature (°C)	Resistors Range (Special Low) (Ω)	Resistors Range (Ω)	Resistors Range (Special High) (Ω)
RMC TC05	0.10 (1/10)	100	200	-55 to +155	70	4.7 to 9.76	10 to 1M	1.1M to 2M

Power Rating:

Resistors shall have a power rating based on continuous load operation at an ambient temperature of 70°C. For temperature in excess of 70°C, The load shall be derate.

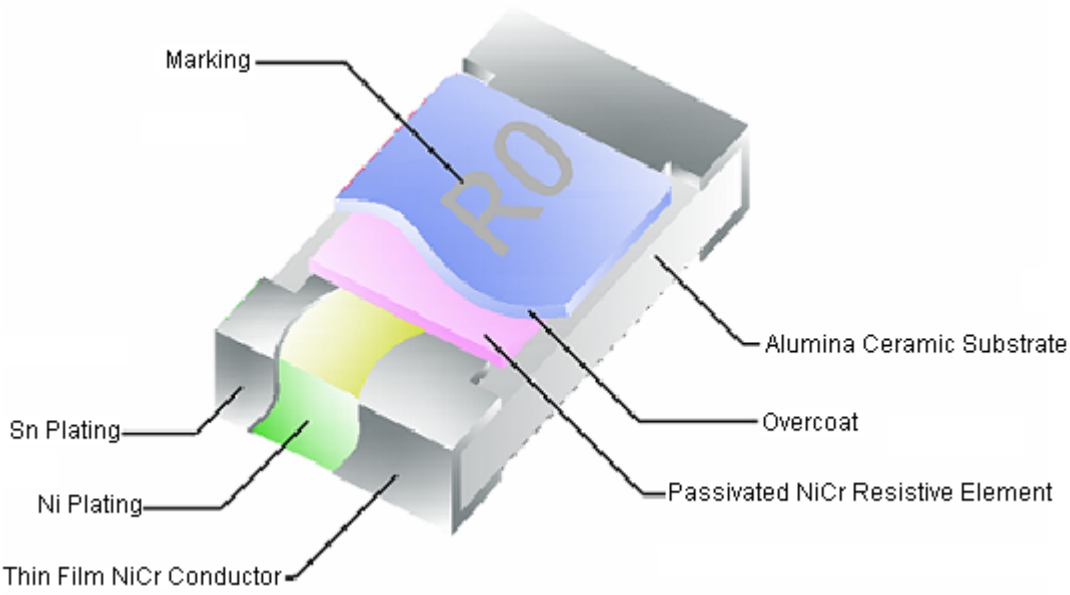
Derating Curve



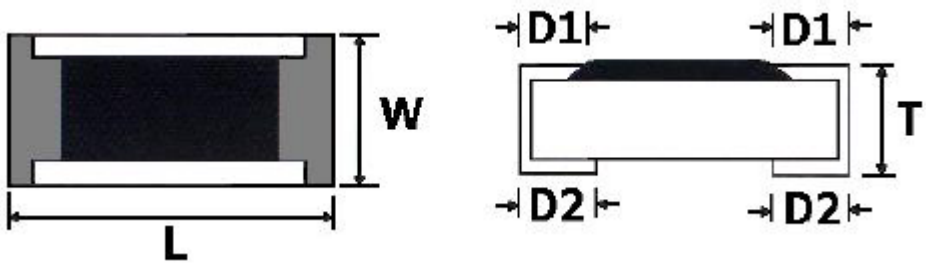
Nominal Resistance

Effective figures of nominal resistance shall be in accordance with E-24, E-96 and E-192 series. E-96 for 1%, E-24 series for 2%, 5%, 10% and E-192 for 0.5%, 0.25%, 0.1% .

Construction:



Power Rating and Dimensions



Dimensions : Millimetres

Dimensions

Type	L ±0.15	W + 0.15 - 0.10	T ±0.10	D1 ±0.20	D2 ±0.25
TC05	2.00	1.25	0.55	0.40	0.40

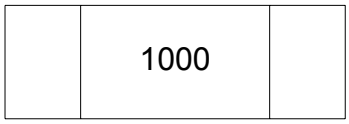
Dimensions : Millimetres

Power Rating

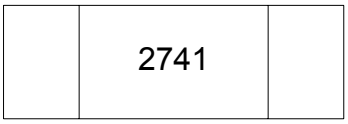
Type	Power Rating at 70°C (W)	Tolerance %	Resistance Range (Special Low) (Ω)	Resistance Range (Ω)	Resistance Range (Special High) (MΩ)	Standard Series	PPM/°C
TC05	0.10 (1/10)	±0.1	4.7 to 9.76	10 to 1M	1.1 to 2	E-192	25

Marking on the Resistors:

±0.1% Tolerance : 4 Digits, the first three digits are singnificant figures of resistance and the fourth digit denoted number of zeros.Letter"R" is for decimal point.



100Ω



2.74KΩ

Performance specifications

Characteristics	Limits	Test Methods (JIS C 5201-1)
Temperature coefficient	4.7Ω to 2MΩ ±25 PPM/°C	Natural resistance change per temperature degree centigrade R_2-R_1/ R_1 (t_2-t_1) x 10^6 (PPM/°C) R_1 : Resistance value at room temperature (t_1) R_2 : Resistance value at room temperature plus 100°C (t_2).
Short time overload	Resistance change rate is ±(0.5% + 0.05Ω)	Permanent resistance change after the application of a potential of 2.5 times RCWV for 5 seconds.
Insulation resistance	>1,000MΩ	Apply 100V DC between protective coating and termination for 1 minimum, then measure
Dielectric withstanding voltage	No evidence of flashover mechanical damage, arcing or insulation break down.	Apply maximum. overload voltage for 1 minute.
Terminal bending	±(0.2% + 0.05Ω)	Twist of test board : Y/X = 5/90mm for 10 seconds.
Soldering heat	Resistance change rate is ±(0.2% + 0.05Ω)	Dip the resistor into a solder bath having a temperature of 260°C ±5°C and hold it for 10 ±1 seconds
Load life in humidity	Resistance change rate is ±(0.3% + 0.05Ω)	Resistance change after 1000 hours (1.5 hours "on", 0.5 hour "off") at RCWV in a humidity chamber controlled at 40°C ±2°C and 90 to 95% relative humidity
Load Life	Resistance change rate is ±(0.2% + 0.05Ω) >7KΩ ±(0.5% + 0.05Ω)	Permanent resistance change after 1000 hours operating at RCWV, with duty cycle of (1.5 hours"on", 0.5 hour"off") at 70°C ±2°C ambient.
Solderability	95% coverage minimum	Test temperature of solder : 260°C ±5°C Dipping them solder : 2 ±0.5 seconds.

Resistance Preferred Value Range

E6	E12	E24	E96	E6	E12	E24	E96	E6	E12	E24	E96
10	10	10	10.0				21.5				46.4
			10.2	22	22	22	22.1	47	47	47	47.5
			10.5				22.6				48.7
			10.7				23.2				49.9
		11	11.0				23.7			51	51.1
			11.3			24	24.3				52.3
			11.5				24.9				53.6
			11.8				25.5				54.9
	12	12	12.1				26.1		56	56	56.2
			12.4				27.7				57.6
			12.7		27	27	27.4				59.0
		13	13.0				28.0				60.4
			13.3				28.7			62	61.9
			13.7				29.4				63.4
			14.0			30	30.1				64.9
			14.3				30.9				66.5
			14.7				31.6	68	68	68	68.1
15	15	15	15.0				32.4				69.8
			15.4	33	33	33	33.2				71.5
			15.8				34.0				73.2
		16	16.2				34.8			75	75.0
			16.5				35.7				76.8
			16.9			36	36.5				78.7
			17.4				37.4				80.6
			17.8				38.3		82	82	82.5
	18	18	18.2		39	39	39.2				84.5
			18.7				40.2				86.6
			19.1				41.2				88.7
			19.6				42.2			91	90.9
		20	20.0			43	43.2				93.1
			20.5				44.2				95.3
			21.0				45.3				97.6

Above values in accordance with IEC Publication 63 (1963) and BS2488

TC05 Series Thin Film Resistors

Part Number Explanation:

MC	TC05	25	B	1000	T	5	E
	Product Type	Temperature	Tolerance	Ohmic Value	Packing Type	Packing Quantity	Special Feature

Product Type : TC05 = 0805.
Temperature : 25 = 25PPM.
Tolerance : B = ±0.1%.
Ohmic Value : Where R = Ohms = Ω.
K = Kiloohms = KΩ.
M = Megaohms = MΩ.
And replaces the decimal point.
eg: 1R5 = 1.5Ω.
4K7 = 4.7KΩ.
6M8 = 6.8MΩ.
Parking Type : T = T/R Packing.
Packing Quantity : 5 = 5000 pieces.
Special Feature : E = Lead free plating type.

Stocked Values

Tolerance	Wattage (W)	Preferred Value Range	Range Value
1%	0.063	E96	1R5 - 1M
1%	0.1	E24	1R5 - 1M
1%	0.125	E24	10R - 1M