TC05 Series Thin Film Resistors

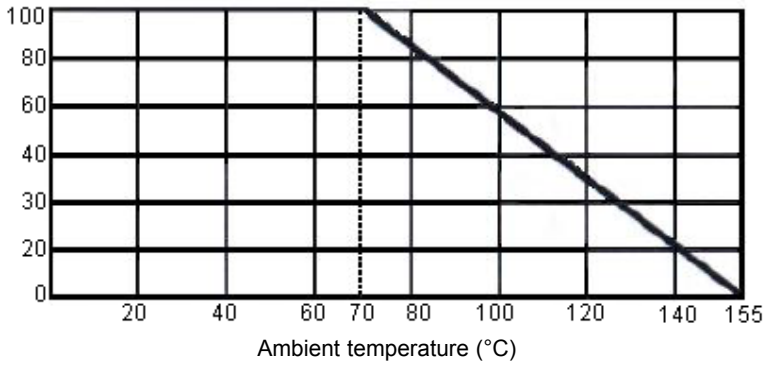
Specification Table

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.

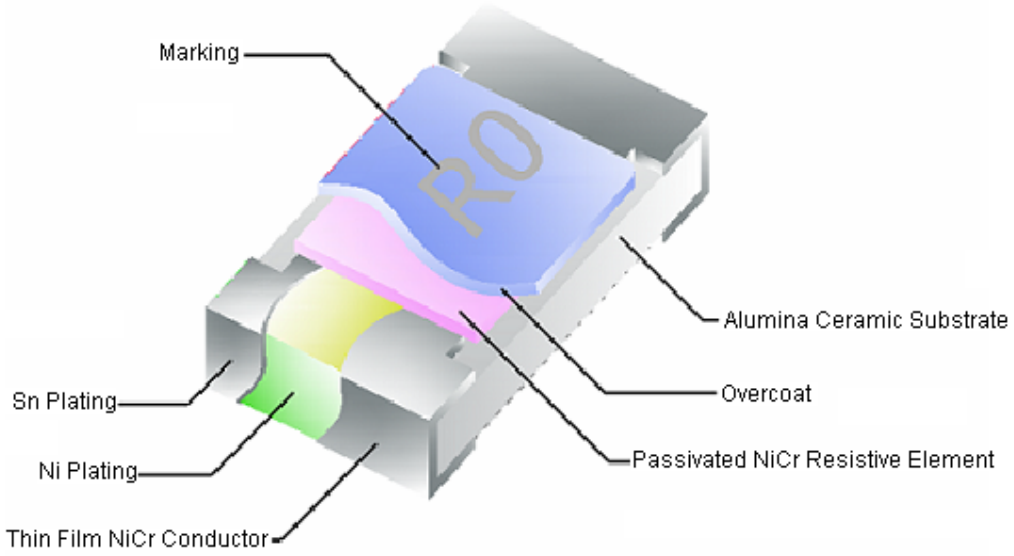
Derating Curve



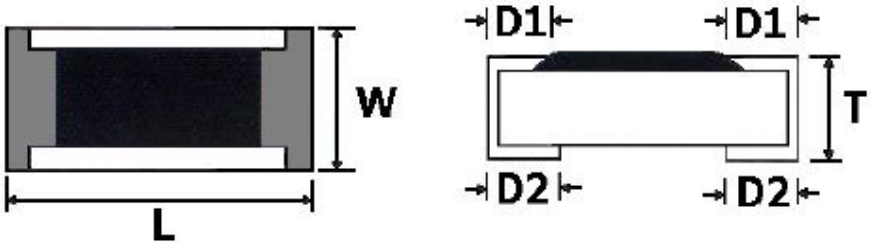
Nominal Resistance

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

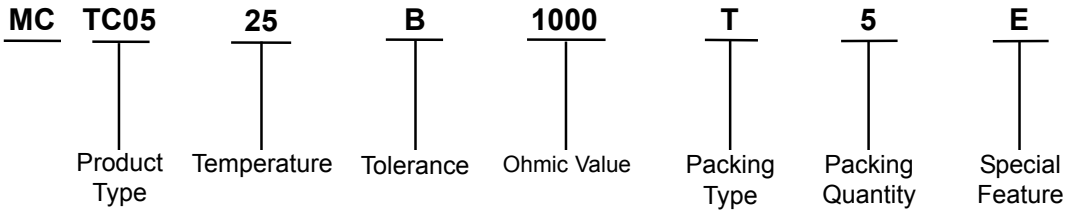
Characteristics	Limits	Test Methods (JIS C 5201-1)
Temperature coefficient	4.7Ω to 2MΩ ±25 PPM/°C	Natural resistance change per temperature degree centigrade R_2-R_1/ R_1 (t_2-t_1) x 10^6 (PPM/°C) R_1 : Resistance value at room temperature (t_1) R_2 : Resistance value at room temperature plus 100°C (t_2).
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

Part Number Explanation:



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

Notes:

International Sales Offices:

AUSTRALIA – Farnell
Tel No: ++61 1300 361 005
Fax No: ++61 1300 361 225

FINLAND – Farnell
Tel No: ++ 358 9 560 7780
Fax No: ++ 358 9 345 5411

ITALY – Farnell
Tel No: ++ 39 02 93 995 200
Fax No: ++ 39 02 93 995 300

SPAIN – Farnell
Tel No: 901 20 20 80
Fax No: 901 20 20 90

AUSTRIA – Farnell
Tel No: ++ 43 662 2180 680
Fax No: ++ 43 662 2180 670

FRANCE – Farnell
Tel No: ++ 33 474 68 99 99
Fax No: ++ 33 474 68 99 90

MALAYSIA – Farnell-Newark
Tel No: ++ 60 3 7873 8000
Fax No: ++ 60 3 7873 7000

SWEDEN – Farnell
Tel No: ++ 46 8 730 50 00
Fax No: ++ 46 8 83 52 62

BELGIUM – Farnell
Tel No: ++ 32 3 475 2810
Fax No: ++ 32 3 227 3648

GERMANY – Farnell
Tel No: ++ 49 89 61 39 39 39
Fax No: ++ 49 89 613 59 01

NETHERLANDS – Farnell
Tel No: ++ 31 30 241 7373
Fax No: ++ 31 30 241 7333

SWITZERLAND – Farnell
Tel No: ++ 44 204 64 64
Fax No: ++ 44 204 64 54

BRAZIL – Farnell-Newark
Tel No: ++ 55 11 4066 9400
Fax No: ++ 55 11 4066 9410

HONG KONG – Farnell-Newark
Tel No: ++ 852 2268 9888
Fax No: ++ 852 2268 9899

NEW ZEALAND – Farnell
Tel No: 0800 90 80 80
Fax No: 0800 90 80 81

UK – Farnell
Tel No: ++ 44 8701 200 200
Fax No: ++ 44 8701 200 201

CHINA – Farnell-Newark
Tel No: ++86 10 6238 5152
Fax No: ++86 10 6238 5022

HUNGARY - Farnell
Tel No: ++ 44 870 1200 208
Fax No: ++ 44 870 1200 209

NORWAY – Farnell
Tel No: 800 146 70
Fax No: 800 146 76

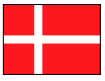
UK – CPC
++ 44 8701 202 530
++ 44 8701 202 531

CZECH REPUBLIC - Farnell
Tel No: ++ 44 870 1200 208
Fax No: ++ 44 870 1200 209

INDIA - Farnell
Tel No: ++ 44 870 1200 208
Fax No: ++ 44 870 1200 209

PORTUGAL – Farnell
Tel No: ++ 34 93 475 8804
Fax No: ++ 34 93 474 5288

USA – Newark
Tel No: 800 463 9275



DENMARK – Farnell
Tel No: ++ 45 44 53 66 44
Fax No: ++ 45 44 53 66 06

IRELAND – Farnell
Tel No: ++ 353 1 830 9277
Fax No: ++ 353 1 830 9016

RUSSIA – Farnell
Tel No: ++ 44 870 1200 208
Fax No: ++ 44 870 1200 209

EXPORT – Farnell
Tel No: ++ 44 8701 200 208
Fax No: ++ 44 8701 200 209
For enquiries from all other markets

ESTONIA – Farnell
Tel No: ++ 358 9 560 7780
Fax No: ++ 358 9 345 5411

ISRAEL – Farnell
Tel No: ++ 180 937 0015
Fax No: ++ 180 937 0014

SINGAPORE – Farnell-Newark
Tel No: ++ 65 6788 0200
Fax No: ++ 65 6788 0300

http://www.farnell.com
http://www.newark.com
http://www.cpc.co.uk