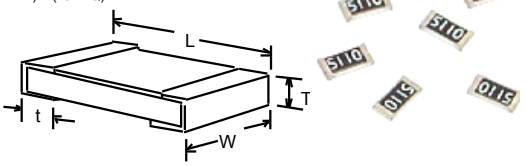
THICK FILM CHIP RESISTORS AND JUMPERS

RCD
RESISTORS•CAPACITORS•COILS•DELAY LINES

RoHS (Term.W) (Term.Q)

MC SERIES 50mW (0201) to 3W (2040)
ZC SERIES Zero-ohm chip (1A - 25A)



- ❒ Industry's widest selection & lowest prices- 0.1Ω to 22M, 50mW to 3W, 0.25% to 5%, TC's to 50ppm
- ❒ 0402, 0603, 0805, 1206 sizes heavily stocked in 1% & 5% (other sizes available from stock in many popular values)
- ❒ Option V: +175° operating temperature
- ❒ Option U: User-trimmable chips
- ❒ Option P: Increased pulse capability
- ❒ Military screening, custom values & TC, microwave design, etc.

RCD's Series MC resistors utilize precision thick film technology offering inherently low inductance, exceptional reliability and superior performance. Heavy plating with NO LEACHTM nickel barrier assures superb solderability and long shelf life. State-of-the-art production line enables the industry's most precise accuracies (0.25% & 50ppm!) thereby replacing more costly thin-film chips in many applications. RCD offers low cost offshore assembly of SM and leaded PCB's (refer to RCD's Assembly Services p.114 for more information).

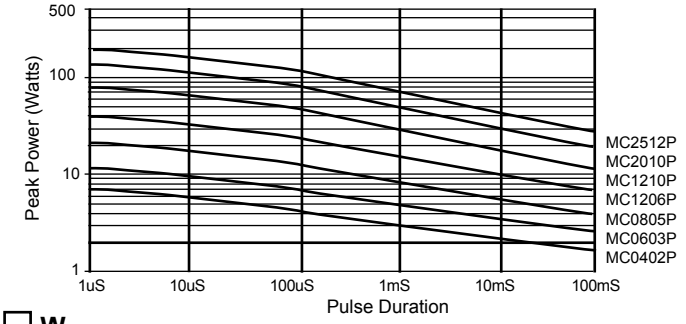
RCD Type MC, ZC	Wattage Rating[1]	Std TC[2] ppm/°C, typ.	Resis. Range ±0.5% Tol[2]	Standard Resis. Range ±1% Tol[2]	Standard Resis. Range ±5% Tol[2]	MC Voltage Rating[2]	TYPE ZC Jumper[3]	Dimensions Inch [mm] L	W	T	t
0201	.05W	100		10Ωto 22KΩ		25V	1 Amp Max 50mΩ Max.	.024±.002 [0.6±.03]	.012±.002 [.3±.03]	.010±.002 [.25±.03]	.006±.002 [.15±.05]
		200		22.1K to 1MΩ	10Ω to 1MΩ						
		400			1- 9.1Ω ,1.1M-2.2M						
0402 Stock item	.063W	100		10Ω to 1MΩ		50V	1 Amp Max 50mΩ Max.	.040±.004 [1.00±.1]	.020±.004 [.5±.1]	.014±.004 [.35±.1]	.010±.004 10 [.25±.1]
		200			10Ω to 1MΩ						
		400		1Ω to 9.76Ω	1- 9.1Ω ,1.1M-4.7M						
0603 Stock item	.1W	100	10Ω to 1MΩ	10Ω to 1MΩ		50V	1.5 Amp Max 50mΩ Max.	.061±.005 [1.55±.12]	.031±.004 [.8±.1]	.016±.006 [.40±.15]	.010±.006 [.25±.15]
		200			10Ω to 1MΩ						
		400		1Ω to 9.76Ω	1- 9.1Ω ,1.1M-10M						
0805 Stock item	.125W	100	10Ω to 1MΩ	10Ω to 1MΩ		150V	2 Amp Max. 50mΩ Max.	.079±.005 [2.0±.15]	.050±.006 [1.25±.15]	.020±.006 [.50±.15]	.016±.008 [.4±.2]
		200		1.02M to 5.6M	10Ω to 5.6MΩ						
		400		0.1-9.76Ω, 1.02M-10M	0.1- 9.1Ω ,1.1M-10M						
1206 Stock item 1206B	.25W .50W	100	10Ω to 1MΩ	10Ω to 1MΩ		200V	2 Amp Max. 50mΩ Max.	.126±.008 [3.2±.2]	.061±.006 [1.55±.15]	.024±.006 [.61±.15]	.020±.008 [.51±.2]
		200		1.02M to 5.6M	10Ω to 1MΩ						
		400		1Ω to 9.76Ω 1.02M-10M	0.1- 9.1Ω ,1.1M-22M						
1210	.33W	100	10Ω to 1MΩ	10Ω to 1MΩ		200V	3 Amp Max. 50mΩ Max.	.126±.008 [3.2±.2]	.098±.008 [2.5±.2]	.024±.008 [.6±.2]	.020±.010 [.5±.25]
		200		1.02M to 5.6M	10Ω to 1MΩ						
		400		1Ω to 9.76Ω 1.02M-10M	0.1- 9.1Ω ,1.1M-22M						
2010	.75W	100	10Ω to 1MΩ	10Ω to 1MΩ		200V (250V Opt. P)	3 Amp Max. 50mΩ Max.	.197±.008 [5.0±.2]	.102±.008 [2.6±.2]	.024±.008 [.6±.2]	.020±.010 [.50±.25]
		200		1.02M to 5.6M	10Ω to 1MΩ						
		400		1Ω to 9.76Ω 1.02M-10M	0.1- 9.1Ω ,1.1M-22M						
2512 2512B	1.0W 2.0W	100	10Ω to 1MΩ	10Ω to 1MΩ		250V (350V Opt. P)	4 Amp Max. 50mΩ Max.	.250±.01 [6.35±.25]	.125±.010 [3.2±.25]	.024±.008 [.6±.2]	026±.012 [.65±.3][4]
		200		1.02M to 5.6M	10Ω to 1MΩ						
		400		1Ω to 9.76Ω 1.02M-10M	0.1- 9.1Ω ,1.1M-22M						
2040	2.0/3.0	100		10Ω to 1MΩ		350V	N/A	.201±.008 [5.1±.2]	.402±.008 [10.2±.2]	.024±.008 [.6±.2]	.055±.018 [1.4±.46]
		200			10Ω to 1MΩ						
		400			1- 9.1Ω						

[1] Operation at or near full rated power (especially >1W) involves consideration of mounting geometry (solder pad and trace area/thickness, etc.). Request FA2623 for suggested mounting pad layouts.
[2] Extended resistance range available. Most sizes available down to 0.01Ω 1%. [3] Up to 25A available. [4] Dim. t on MC2512B is .094[2.4] maximum.

TYPICAL PERFORMANCE

Thermal Shock (-55° to +125°C)	0.2% ΔR
Overload (2.5x W, 5S, NTE 2x rated V)	1% ΔR
Low Temp. Operation (-55°C)	0.2% ΔR
High Temp. Exposure (125°C, 100hrs)	0.5% ΔR
Resistance to Solder Heat	0.2% ΔR
Moisture Resistance	0.5% ΔR
Load Life(1000 hrs.)	1.0% ΔR
Operating Temp. (+175°C Opt. V)	-55 to +155°C
Derating (above 70°C)	Derate W & V by 1.18%/°C

PULSE WITHSTAND CHART (increased pulse levels avail.)



Pulse capability is dependent on res. value, waveform, repetition, etc. Chart is a general guide for Opt. P version, single or infrequent pulses, with peak voltage levels not exceeding 150V for 0402 & 0603 size, 300V for 0805, 400V for 1206 & 1210, 450V for 2010 & 2512. Max pulse wattage for standard parts (w/o Opt.P) is 50% less, max pulse voltage is 50V less. Increased pulse levels available. For improved performance and reliability, pulse derating factor is recommended (30-50% typ., refer to #R-42). Verify selection by evaluating under worst-case conditions.

P/N DESIGNATION:

MC 1206 ☐ - 2210 - F T ☐ W

RCD Type: MC or ZC
Chip Size: 0201 to 2040
Options: U, P, etc. (leave blank if std)
Resis. Code: 0.25% to 1% Tol: 3 signif. digits & multiplier (R100= .1Ω, 1R00=1Ω, 10R0=10Ω, 1000=100Ω 1001=1KΩ) 5% Tol: 2 signif. digits & multiplier (R10=.1Ω, 1R0=1Ω, 100=10Ω, 101=100Ω 102=1KΩ). Leave blank on ZC zero-ohm chips.
Tolerance: J=5%, F=1%, D=0.5%, C=0.25% Leave blank on ZC zero-ohm chips. Opt.U trimmable chips W=±15%, M=±20%, U=0 to -30%.
Packaging: B=Bulk, T=Tape & Reel
Optional TC: 50=50ppm, 101=100ppm, 201=200ppm (leave blank if std)
Termination: W = Lead-free (std), Q = Tin/Lead (leave blank if both acceptable)

RCD Components Inc, 520 E.Industrial Park Dr, Manchester, NH, USA 03109 rcdcomponents.com Tel: 603-669-0054 Fax: 603-669-5455 Email:sales@rcdcomponents.com