

SM POWER RESISTORS, 1/2W - 5W, .0005Ω - 1MΩ WIREWOUND, FILM, & METAL PLATE

MWM SERIES

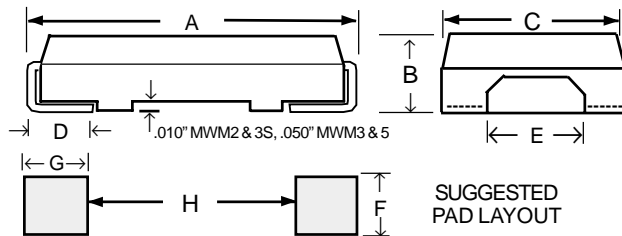

 Term. W is
RoHS
compliant
& 260°C
compatible


- ☐ Widest selection in the industry!
- ☐ Tolerance to $\pm 0.01\%$, T.C. to $\pm 5\text{ppm}/^\circ\text{C}$
- ☐ Available on exclusive **SWIFT™** delivery program!

OPTIONS

- ☐ Option X: Non-inductive (refer to application note below)
- ☐ Option P: Increased Pulse Capability
- ☐ Option M: Power metal film element
- ☐ Option L: Low profile non-inductive metal plate design
- ☐ Option E: Low thermal EMF design
- ☐ Special marking, high current, flame retardant, fusible, temp.sensitive, hi-rel screening/burn-in, fusible, SnPb, etc.

Exceptional performance and reliability is achieved via highest grade materials and processing. An all-welded wirewound construction is standard, featuring premium-grade wire for superior stability and surge capability. Opt. L low profile models feature a non-inductive metal plate element. The power film version (Opt.M) achieves values as high as 1MΩ and is inherently low inductance thereby enabling stable operation at high frequencies.


 SUGGESTED
PAD LAYOUT

PERFORMANCE (Typ)	WW & Opt. L Metal Plate	Opt. M Film Element
Load Life (1000 hrs)	$\pm 1\%$ (MWM2S,3S,27=2%)	$\pm 1\%$
Moisture Resistance	$\pm 0.25\%$	0.5%
Temperature Cycling	$\pm 0.2\%$	0.5%
Short Time Overload	5 x rated W for 5 Sec	5 x rated W for .5 Sec
Temp. Coefficient	Standard Optional	Standard Optional
R0005-R024	400ppm 100, 200	n/a n/a
R025-R049	300ppm 100, 200	n/a n/a
R050-R099	200ppm 50, 100	n/a n/a
R100-R990	90ppm 20,30,50	350ppm 200
1R00-9R90	50ppm 10,20,30	200ppm 100
10R0 & above	30ppm 5,10,20	100ppm 25,50
Dielectric Strength ¹	500V Min. ¹ , 1KV avail.	500V Min. (1KV avail.)
Solderability ²	95% coverage	95% coverage
Operating Temp.	-55 to +175°C (+275° avail)	-55°C to +175°C
Available Resis. Tol.	0.01% to 10%	0.5% to 5%

¹ Dielectric strength for low profile Opt. L is 100V (300V avail) ² Tested within .032" [.8mm] of pcb surface

RCD TYPE	Wattage Rating	Max Voltage* [Current]	Std Resis Range	Opt M Resis Range	Opt M Max. Voltage	DIMENSIONS Inch [mm]							
						A	B (Max)	C	D (Min)	E	F	G	H
MWM1/2	0.5W	33V [10A]	.01Ω - 2K	5Ω - 1M	200V*	.204±.02 [5.2 ± .5]	.111 [2.82]	.125±.01 [3.2±.25]	.025 [.63]	.045±.015 [1.14±.4]	.080 [2.0]	.100 [2.5]	.08 [2]
MWM1	1W	58V [20A]	.001Ω-10K	.1Ω - 1M	200V*	.258±.02 [6.55±.5]	.125 [3.17]	.150±.015 [3.8±.4]	.032 [0.8]	.060±.015 [1.50±.4]	.100 [2.5]	.125 [3.2]	.12 [3]
MWM2	2W	120V [30A]	.002Ω-25K	.1Ω - 1M	250V*	.449±.032 [11.4±.8]	.208 [5.28]	.225±.015 [5.7±.4]	.060 [1.5]	.070±.020 [1.78±.5]	.160 [4.0]	.157 [4.0]	.20 [5]
MWM2S	2W	80V [25A]	.1Ω- 200Ω	1Ω - 1M	250V*	.297 ± .020 [7.5 ± .5]	.165 [4.19]	.150±.015 [3.8±.4]	.044 [1.1]	.050±.016 [1.27±.4]	.100 [2.5]	.125 [3.2]	.14 [3.6]
MWM27	2.7W	180V [30A]	.005Ω -20K	1Ω - 1M	250V*	.480±.032 [12.2±.8]	.230 [5.84]	.228±.016 [5.8±.4]	.05 [1.27]	.070±.020 [1.78±.5]	.160 [4.0]	.18 [4.57]	.20 [5]
MWM3S	3W	200V [30A]	.005Ω -25K	1Ω - 1M	300V*	.625±.032 [15.9±.8]	.270 [6.86]	.275±.015 [7±.38]	.05 [1.27]	.085±.016 [2.16±.4]	.160 [4.0]	.175 [4.5]	.40 [10]
MWM3	3.5W	250V [30A]	.005Ω -50K	1Ω - 1M	350V*	.811±.020 [20.6±.5]	.295 [7.49]	.273±.02 [6.9 ± .5]	.063 [1.6]	.102±.028 [2.6 ± .7]	.200 [5.0]	.200 [5.0]	.60 [15]
MWM5	5W	300V [32A]	.005Ω-100K	n/a	n/a	.811±.020 [20.6±.5]	.295 [7.49]	.273±.02 [6.9 ± .5]	.063 [1.6]	.102±.028 [2.6 ± .7]	.250 [6.4]	.250 [6.4]	.60 [15]

LOW PROFILE METAL PLATE MODELS

RCD TYPE	Wattage Rating	Max Voltage* [Current]	Std Resis Range	Opt M Resis Range	Opt M Max. Voltage	A	B (Max)	C	D (Min)	E	F	G	H
MWM1/2L	0.5W	√(PR) [12A]	.003Ω-.05Ω	n/a	n/a	.200 ± .012 [5.1 ± .3]	.053 [1.35]	.100±.01 [2.54±.25]	.025 [.63]	.060 [1.5] min	.080 [2.0]	.100 [2.5]	.08 [2]
MWM1L	1W	√(PR) [25A]	.001Ω-0.1Ω	n/a	n/a	.250 ± .012 [6.3 ± .3]	.057 [1.45]	.126 ± .012 [3.2 ± .3]	.025 [.63]	.070 [1.8] min	.150 [3.8]	.125 [3.2]	.120 [3]
MWM2L	2W	√(PR) [30A]	.002Ω-0.2Ω	n/a	n/a	.330±.012 [8.38±.3]	.057 [1.45]	.157 ± .012 [4.0 ± .3]	.032 [0.8]	.100 [2.5] min	.197 [5.0]	.157 [4.0]	.157 [4]
MWM2LS	2W	√(PR) [45A]	.0005 - .005Ω	n/a	n/a	.250 ± .012 [6.3 ± .3]	.079 [2.0]	.126 ± .012 [3.2 ± .3]	.032 [0.8]	.080[.20] min	.150[3.8]	.125[3.2]	.120[3]

*Voltage determined by $E = \sqrt{PR}$, E not to exceed maximum voltage rating. Increased ratings available. Multiply by 0.7 for Opt. X

APPLICATION NOTES:

- Power Rating:** Resistors may be operated up to full rated power with consideration of mounting density, pad & trace geometry, PCB material, and ambient temperature. Standard parts should be derated (W&V) by .67%/°C when ambient exceeds 25°C, low profile parts by 1%/°C above 70 °C
- Inductance:** Standard wound parts are 1 - 20uH typ. For "non-inductive" design, specify Opt.X (0.2uH max $\leq 50\Omega$, .37uH $> 50\Omega$, 50nH avail). Opt. L (metal plate element) and Opt.M (power film element) are inherently low inductance (1 to 10nH typ). Consult factory for assistance.
- Pulse Capability:** standard MWM (wirewound) and Opt. L (metal plate) offer excellent overload capability greatly exceeding that of film resistors. The overload level can often be economically enhanced by a factor of 50% or more via special processing (Opt.P). Pulse capability is highly dependent on size & resistance (available up to 50 joules). Consult factory for assistance.

P/N DESIGNATION:

MWM2 - **1001** - **E** **T** **W**

RCD Type _____

Options: X,P,M,L,F,E (leave blank if std)

Resis.Code .01%-1%: 3 signif. figures & multiplier, e.g. R010=0.01Ω, R100=0.1Ω, 1R00=1Ω, 1000=100Ω, 1001=1K.

Resis.Code 2%-10%: 2 signif. figures & multiplier, R01=0.01Ω, R10=0.1Ω, 1R0=1Ω, 100=10Ω, 101=100Ω, 102=1K. Use extra digits as needed: R005, R0075, R012, etc.

Tolerance Code: K=10%, J=5%, H=3%, G=2%, F=1%, D=0.5%, C=0.25%, B=0.1%, A=0.05%, Q=0.02%, T=0.01%

Packaging: B = Bulk, T = Tape & Reel

TC (leave blank if standard): 5 = 5ppm, 10 = 10ppm, 20=20ppm, 30=30ppm,50=50ppm, 101=100ppm, 201=200ppm, 301=300ppm

Termination: W= Lead-free, Q= Tin/Lead. Leave blank if either is acceptable (RCD will select based on lowest price and quickest delivery).