Innovative Service Around the Globe YAGEO

DATA SHEET

LOW OHMIC WIRE RESISTORS

Alloy Wire

MCW Series

±1%, ±2%, ±3%, ±5%

RoHS compliant & Halogen Free

YAGEO

Product specification – August 31, 2023 V.2

APPLICATIONS

- All general purpose applications
- Current detecting resistors

FEATURES

- Low ohmic
- Customized dimension
- RoHS compliant & halogen-free

ORDERING INFORMATION

Part number of the low ohmic wire resistor are identified by the series, type, diameter, tolerance, packing, temperature coefficient, forming, measuring point, pitch and resistance value.

PART NUMBER

MCW	P	20	J	B	E	B	P	A	0R225	B
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)

(1) SERIES NAME

MCW Series, Manganese-copper, Nickel-copper, others upon request

(2) TYPE

- = non Sn plating
P = Sn plating
H = Sn plating, H=4.0±0.5mm
U = Sn plating, H=3.5±0.5mm & C≥2.7mm
V = Sn plating, H=3.5±0.5mm & C≥2.1mm
X = Sn plating, H=3.2±0.3mm
Y = Sn plating, C=2.3±0.2mm
T = Sn plating, H=2.5±0.5mm

(3) DIAMETER

06 = 0.6mm	12 = 1.2mm	16 = 1.6mm	25 = 2.5mm
08 = 0.8mm	14 = 1.4mm	18 = 1.8mm	26 = 2.6mm
10 = 1.0mm	15 = 1.5mm	20 = 2.0mm	

(4) TOLERANCE

F = ±1%	H = ±3%	J = ±5%	- = Base on Spec
G = ±2%			

(5) PACKAGING

B = Bulk
Y = Bulk , measuring point is from the bottom of forming to the end of wire

(6) TEMPERATURE COEFFICIENT OF RESISTANCE

E=±50ppm/°C	- = Based on spec.	N=±50ppm/°C, CuNi alloy
F=±100ppm/°C	G=±200ppm/°C	M=±50ppm/°C, CuMn alloy

(7) FORMING

M = M-Type Forming	N = N-Type Forming	K = K-Type Forming
B = B-Type Forming	H = H-Type Forming	W = W-Type Forming

(8) MEASURING POINT

A = 0 mm	G = 0.8 mm	M = 1.3mm	S = 1.8mm
B = 0.2mm	H = 0.9mm	N = 1.4 mm	T = 1.9mm
C = 0.4mm	J = 1.0mm	P = 1.5mm	U = 2.0 mm
D = 0.5mm	K = 1.1mm	Q = 1.6mm	V = 2.5mm
E = 0.6mm	L = 1.2mm	R = 1.7mm	W = 3.0mm
F = 0.7mm			

(9) PITCH

A = 5.0±0.2mm	P= 11.5±0.2mm
B = 7.5±0.2mm	Q = 8.0±0.2mm
C = 10.0±0.2mm	L = 30.0±0.2mm
D = 12.5±0.2mm	T = 5.5±0.2mm
E = 15.0±0.2mm	U = 14.0±0.5mm
F = 17.0±0.2mm	V = 32.0±1.0mm
G = 20.0±0.2mm	W = 12.0±0.2mm
H = 22.5±0.2mm	Y= 6.2±0.2mm
J = 25.0±0.2mm	Z = 11.0±0.2mm
K = 7.2±0.2mm	S = 15.5±0.2mm
M = 3.0±0.2mm	R = 2.5±0.2mm
N = 16.0±0.2mm	X = 9.0±0.2mm

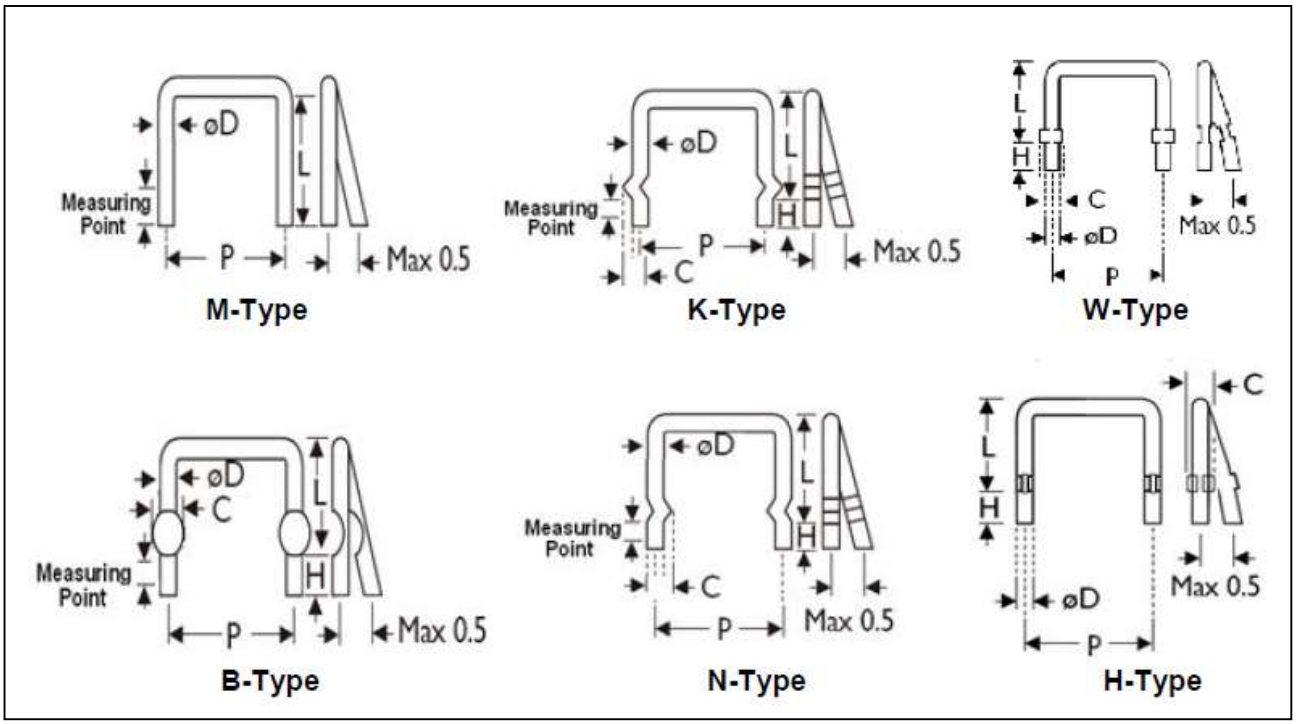
(10) RESISTANCE VALUE

E24 & E96 Series, Max. 6 digits
Example:
0R0014 = 0.0014Ω

(11) MULTIPLIER

B = $*10^{-2}$ (apply while resistance code exceed 6 digits)

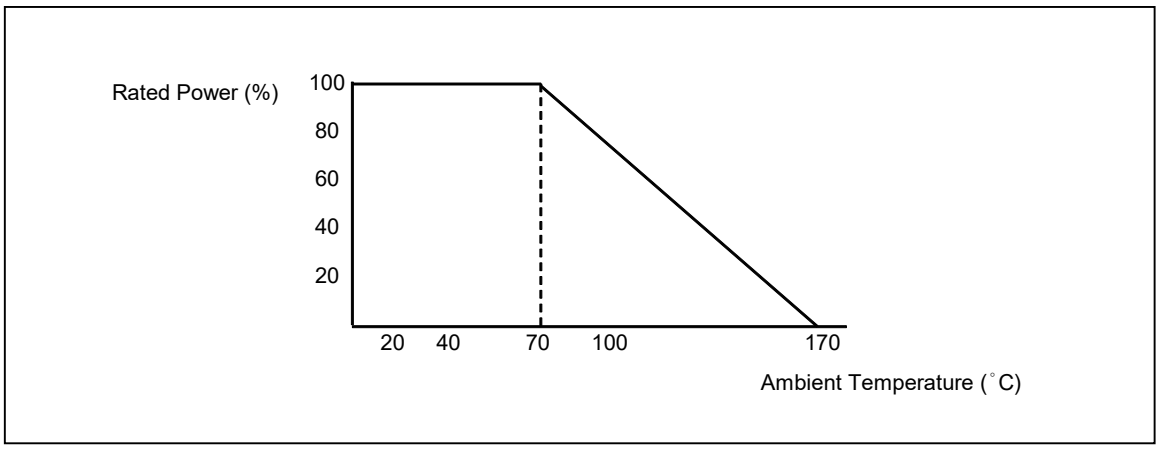
DIMENSIONS



TYPE DIMENSIONS Unit: mm

Normal	**ψD**	**C**	**H**	**P,L**
MCW-06	0.6 ± 0.05	0.9 ± 0.2	3.0 ± 0.3	
MCW-08	0.8 ± 0.05	1.2 ± 0.2	3.0 ± 0.3	
MCW-10	1.0± 0.05	1.5 ± 0.2	3.0 ± 0.3	
MCW-12	1.2± 0.05	1.8 ± 0.2	3.0 ± 0.3	
MCW-14	1.4± 0.05	2.1 ± 0.2	3.0 ± 0.3	
MCW-15	1.5± 0.05	2.2 ± 0.2	3.0 ± 0.3	P & L could be designed by customer's requirement
MCW-16	1.6± 0.05	2.4 ± 0.2	3.0 ± 0.3	
MCW-18	1.8± 0.05	2.7± 0.2	3.0 ± 0.3	
MCW-20	2.0± 0.05	3.0 ± 0.2	3.0 ± 0.3	
MCW-25	2.5± 0.05	3.7 ± 0.2	3.0 ± 0.3	
MCW-26	2.6± 0.05	3.9 ± 0.2	3.0 ± 0.3	

DERATING CURVE



ELECTRICAL CHARACTERISTICS

CHARACTERISTICS	MCW -06	MCW -08	MCW -10	MCW -12	MCW -14	MCW -15	MCW -16	MCW -18	MCW -20	MCW -25	MCW -26
Maximum Current Rating	3A	4.5A	5.5A	7.0A	8.0A	8.5A	9.5A	11A	12A	16A	18A
Resistance Range	0.0014Ω ~ 0.078Ω										
Operating Temp. Range	- 40°C to +170°C										
Temperature Coefficient	see Table I										

Note: For resistance value out of above range is by request.

TABLE I TEMPERATURE COEFFICIENT

WIRE MATERIAL	TEMPERATURE COEFFICIENT
CN30/ CN ALLOY	±200 PPM/ °C
CM/ CN49	±50 PPM/ °C
NCH-1	±100 PPM/ °C
Alloy wire with Sn plating	±700 PPM/ °C

TEST AND REQUIRMENTS

TEST	TEST METHOD	PROCEDURE	APPRAISE
Short Time Overload	IEC 60115-1 4.13	2.5 times RCWV for 5 sec.(Not more than maximum overload voltage)	±2.0%
Temperature Coefficient	IEC 60115-1 4.8	Between -40°C to +125°C	By Type
Solderability	IEC 60115-1 4.17	245±5°C for 3±0.5 Sec.	95% Min. coverage
Damp Heat Steady State	IEC 60115-1 4.24	40±2°C,90-95% RH for 56 days, loaded with 0.1 times RCWV	±2.0%
Endurance at 70°C	IEC 60115-1 4.25	70±2°C at RCWV(or Umax., whichever less) for 1,000 Hr.(1.5 Hr.on,0.5 Hr. off)	±3.0%
Temperature Cycling	IEC 60115-1 4.19	➔ -55°C ➔ Room Temp. ➔ +155°C Room Temp.(5 cycles)	±1.0%
Resistance to Soldering Heat	IEC 60115-1 4.18	260±3°C for 10±1 Sec., immersed to a point 3±0.5mm from the body	±1.0%

Note:

RCWV (Rated Continuous Working Voltage):

The DC or AC (rms) continuous working voltage corresponding to the rated power is determined by the following formula:

$V=\sqrt{(P \times R)}$
or max. working voltage whichever is less

Where

V=Continuous rated DC or
AC (rms) working voltage (V)

P=Rated power (W)

R=Resistance value (Ω)

BULK PACKING

Normal	Piece Per Bag
MCW	1,000

REVISION HISTORY

REVISION	DATE	CHANGE NOTIFICATION	DESCRIPTION
Version 2	Aug. 31, 2023	-	- Revised LEGAL DISCLAIMER
Version 1	Aug. 19, 2021	-	-Added pitch dimension 9.0±0.2mm
Version 0	Aug. 2, 2021	-	- First issue of this specification

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