

Low Ohm (metal Strip) Chip Resistors

MCLRP Series

multicomp PRO

**RoHS
Compliant**



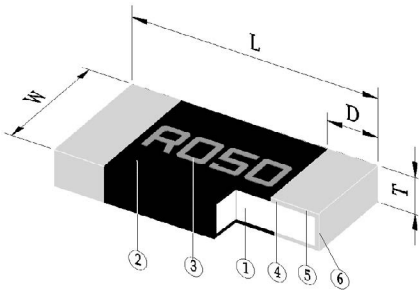
Features

- Low TCR down to ± 25 PPM/ $^{\circ}$ C
- Customized resistance available
- Low inductance < 5nH
- AEC-Q200 Compliance
- Sulfur resistance unaffected by sulfur environments

Applications

- NB (for Power Management)
- MB (for Power Management)
- SWPS (DC-DC Converter, Charger, Adaptor)
- Monitor (for Power Management)

Construction



1	Alloy Plate
2	Overcoat
3	Marking

4	Internal Electrode
5	Barrier Layer
6	Solder Plating

Dimensions

Type	Size (Inch)	L (mm)	W (mm)	T (mm)	D (mm)	Weight (g) (1000pcs)
MCLRP06	1206	3.15 \pm 0.1	1.45 \pm 0.1	0.55 \pm 0.1	0.55 \pm 0.15	10.5
MCLRP10	2010	5 \pm 0.15	2.4 \pm 0.15	0.55 \pm 0.15	0.8 \pm 0.2	40
MCLRP12	2512	6.4 \pm 0.25	3.2 \pm 0.25	0.7 \pm 0.2	0.9 \pm 0.3	52.6

Electrical Specifications

Type	Item	Power Rating at 70 $^{\circ}$ C	Rated Terminal Temperature	Operating Temp. Range	Resistance Range (m Ω)			TCR (PPM/ $^{\circ}$ C)
					$\pm 0.5\%$	$\pm 1\%$	$\pm 5\%$	
MCLRP06 (1206)	1W		110 $^{\circ}$ C	-55 $^{\circ}$ C ~ +170 $^{\circ}$ C	8, 10, 12, 15, 20, 25, 30, 33, 40			± 50
					3, 4, 5, 7, 8, 10, 12, 15, 20, 25, 30, 33, 40			± 75 ± 100
MCLRP10 (2010)	1W				10, 15, 20, 30, 50, 68, 75, 100			± 75
	2W				10, 15, 20, 30, 50, 68, 75			± 75
MCLRP12 (2512)	2W, 3W		110 $^{\circ}$ C	-55 $^{\circ}$ C ~ +170 $^{\circ}$ C	3, 4, 5, 6, 7, 18, 20, 22, 25, 30, 33, 35, 39, 40, 47, 50, 60, 68, 70, 75, 80, 82, 90, 91, 100, 120, 150, 180, 200			± 25
					3, 4, 5, 6, 7, 8, 8.5, 9, 10, 12, 15, 18, 20, 22, 25, 30, 33, 35, 39, 40, 47, 50, 60, 68, 70, 75, 80, 82, 90, 91, 100, 120, 150, 180, 200			± 50 ± 75

Operating Current = $\sqrt{(P/R)}$, Operating Voltage = $\sqrt{(P \times R)}$

Newark.com/multicomp-pro
Farnell.com/multicomp-pro
sg.element14.com/b/multicomp-pro

multicomp PRO

Low Ohm (metal Strip) Chip Resistors

MCLRP Series



Environmental Characteristics

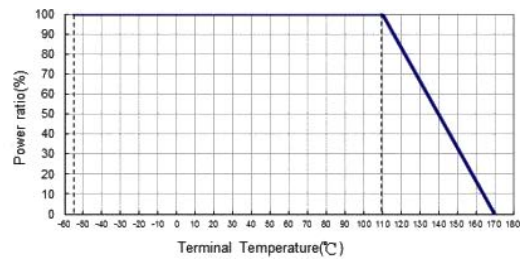
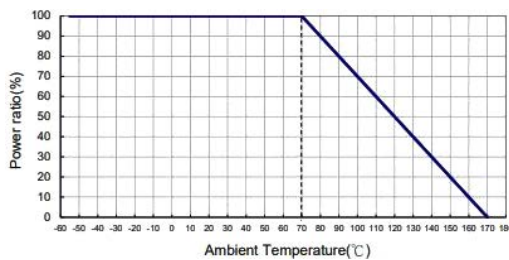
Item	Requirement	Test Method
Temperature Coefficient of Resistance (T.C.R.)	As Spec.	IEC60115-1 4.8 JIS-C-5201-1 4.8 +25°C ~ 125°C, 25°C is the reference temperature
Short Time Overload	±1%	IEC60115-1 4.13 JIS-C-5201-1 4.13 5*rated power for 5 seconds
Insulation Resistance	≥10G	IEC60115-1 4.6 JIS-C-5201-1 4.13 100V DC for 1 minute
Endurance	±1%	IEC60115-1 4.25 JIS-C-5201-1 4.25.1 70±2°C, rated power for 1000 hrs with 1.5 hrs "ON" and 0.5 hr "OFF"
Biased Humidity	±1%	MIL-STD-202 Method 103 1000 hrs 85°C/85%RH 10% of operating power
Dry Heat	±1%	IEC60115-1 4.23.2 JIS-C-5201-1 4.23.2 at +170°C for 1000 hrs
Bending Strength	±1%	JIS-C-5201-1 4.33 IEC-60115-1 4.33 Bending width 2mm once for 5 seconds
Solderability	95% min. coverage	JIS-C-5201-1 4.17 IEC-60115-1 4.17 245±5°C for 3 seconds
Resistance to Soldering Heat	±0.5%	JIS-C-5201-1 4.18 IEC-60115-1 4.18 260±5°C for 10 seconds
Rapid Change of Temperature	±1%	JIS-C-5201-1 4.19 IEC-60115-1 4.19 -55°C to +155°C, 5 cycles
Low Temperature Storage	±1%	IEC60115-1 4.23.4 JIS-C-5201-1 4.23.4 at -55°C for 2 hrs

RCWV(Rated Continuous Working Voltage)= $\sqrt{P \cdot R}$ or Max. Operating Voltage whichever is lower.

Storage Temperature : 15~28°C

Humidity : < 80%RH

Derating Curve



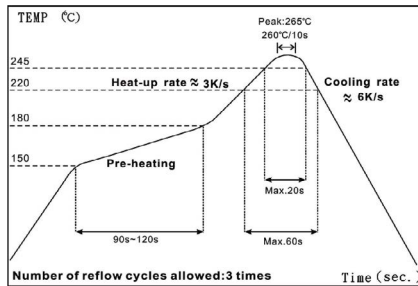
Newark.com/multicomp-pro
Farnell.com/multicomp-pro
sg.element14.com/b/multicomp-pro



Low Ohm (metal Strip) Chip Resistors MCLRP Series



Soldering Condition

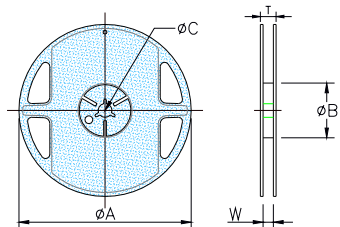


IR Reflow Soldering

(1) Time of IR reflow soldering at maximum temperature point 260°C : 10s

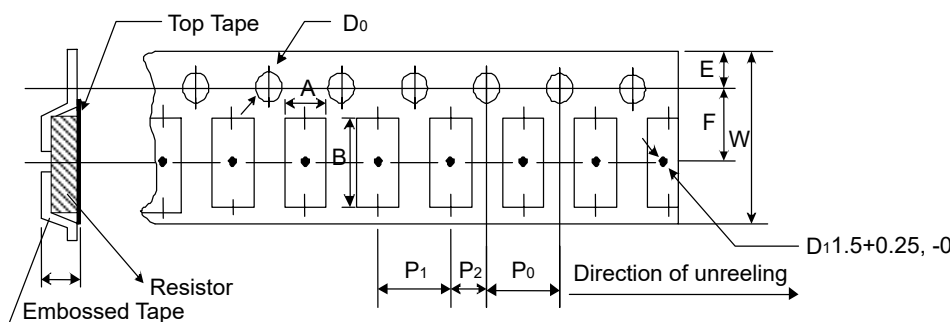
Packaging

Reel Specifications & Packaging Quantity



Type	Resistance (mΩ)	Packaging Quantity		Tape Width	Reel Diameter	ΦA (mm)	ΦB (mm)	ΦC (mm)	W (mm)	T (mm)
MCLRP06	3 ~ 40	Paper	5K	8mm	7 inch	178.5 ±1.5	60±1	13 ±0.2	9 ±0.5	12.5 ±0.5
MCLRP10	10 ~ 100	Embossed	4K	12mm						
MCLRP12	4 ~ 100		2K							
	3							13 ±0.5	13 ±1	15.5 ±0.5

Embossed Plastic Tape Specifications



Type	A (mm)	B (mm)	W (mm)	E (mm)	F (mm)	P ₀ (mm)	P ₁ (mm)	P ₂ (mm)	D ₀ (mm)	T (mm)
MCLRP10	2.8 ±0.1	5.4±0.2	12 ±0.3	1.75 ±0.1	5.5±0.05	4±0.1	4±0.1	2 ±0.05	1.5+0.1, -0	1.2 +0
MCLRP12	3.5 ±0.1	6.7 ±0.1	12 ±0.3	1.75 ±0.1	5.5 ±0.05	4 ±0.1	4 ±0.1	2 ±0.05		
MCLRP12 (3mΩ)									1.45±0.2	

Newark.com/multicomp-pro
Farnell.com/multicomp-pro
sg.element14.com/b/multicomp-pro

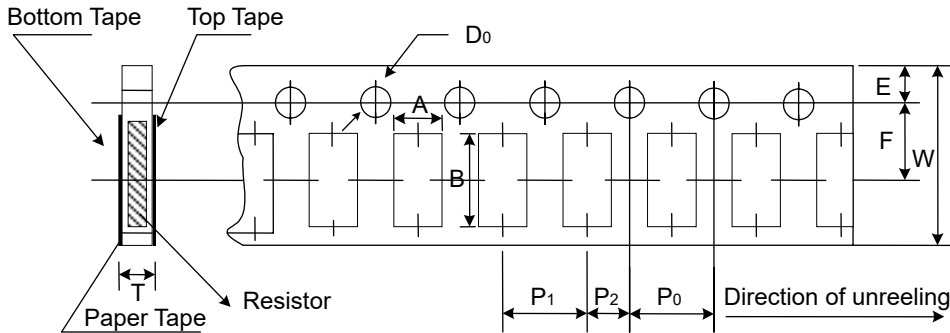


Low Ohm (metal Strip) Chip Resistors

MCLRP Series

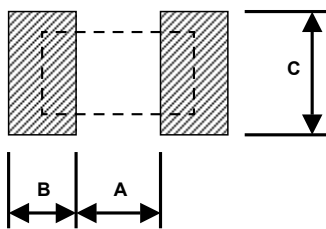


Paper Tape Specifications



Type	A (mm)	B (mm)	W (mm)	E (mm)	F (mm)	P ₀ (mm)	P ₁ (mm)	P ₂ (mm)	D ₀ (mm)	T (mm)
MCLRP06	1.9 ±0.1	3.5 ±0.2	8 ±0.2	1.75 ±0.1	3.5 ±0.05	4 ±0.1	4 ±0.05	2 ±0.05	1.5 +0.1,-0	0.85 ±0.1

Recommend Land Pattern



Type	A (mm)	B (mm)	C (mm)
MCLRP06	1.5	1.4	1.7
MCLRP10	3.6	1.4	2.5
MCLRP12	4	2	3.5

FR4 copper board, 100µm of copper pad thickness

Part Number Explanation

MCLRP	12	F	T	E	X	1003
Series Type	Dimensions (L×W)	Resistance Tolerance	Packaging Code	TCR (PPM/°C)	Power Rating	Resistance
	06: 1206	D: ±0.5%	T: Taping Reel	D: ±50	R: 3W	R015: 0.015Ω
	10: 2010	F: ±1%		W: ±75	S: 2W	R050: 0.05Ω
	12: 2512	J: ±5%		E: ±100	T: 1W	
				C: +25		

Important Notice : This data sheet and its contents (the "Information") belong to the members of the Premier Farnell group of companies (the "Group") or are licensed to it. No licence is granted for the use of it other than for information purposes in connection with the products to which it relates. No licence of any intellectual property rights is granted. The Information is subject to change without notice and replaces all data sheets previously supplied. The Information supplied is believed to be accurate but the Group assumes no responsibility for its accuracy or completeness, any error in or omission from it or for any use made of it. Users of this data sheet should check for themselves the Information and the suitability of the products for their purpose and not make any assumptions based on information included or omitted. Liability for loss or damage resulting from any reliance on the Information or use of it (including liability resulting from negligence or where the Group was aware of the possibility of such loss or damage arising) is excluded. This will not operate to limit or restrict the Group's liability for death or personal injury resulting from its negligence. Multicomp is the registered trademark of the Group. © Premier Farnell Limited 2016.

Newark.com/multicomp-pro
 Farnell.com/multicomp-pro
 sg.element14.com/b/multicomp-pro

