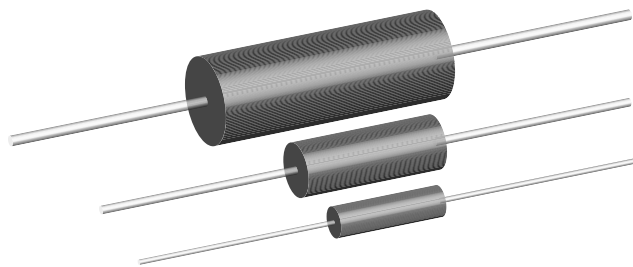




Wirewound Resistors, Commercial Power, Axial Lead, Low Value



FEATURES

- Ideal for all types of current sensing applications including switching and linear power supplies, instruments and power amplifiers
- Low inductance - less than 10 nH
- Cooler operation for high power to size ratio
- Material categorization: for definitions of compliance please see www.vishay.com/doc?99912



RoHS
COMPLIANT
HALOGEN
FREE
GREEN
(5-2008)

Please reference the Vishay Dale closest equivalent: LVR (www.vishay.com/doc?30206).

Notes

- There may be slight differences between the MTL product and the LVR product.
- See the cross-reference file for a complete list of differences and part number crosses: www.vishay.net/files/Cross-Reference%20Data%20-%20PTN-DR-019-2015%20Rev%200.pdf.

| STANDARD ELECTRICAL SPECIFICATIONS | | | | |
|------------------------------------|------------------|-----------------------------------------------------|------------------------------|-----------------------|
| GLOBAL MODEL | HISTORICAL MODEL | POWER RATING $P_{25\text{ }^\circ\text{C}}$ W | RESISTANCE RANGE Ω | TOLERANCE $\pm \%$ |
| MTL1A | MTL-1A | 1 | 0.003 to 0.1 | 1, 5 |
| MTL2B | MTL-2B | 2 | 0.003 to 0.1 | 1, 5 |
| MTL03 | MTL-3 | 3 | 0.003 to 0.1 | 1, 5 |
| MTL05 | MTL-5 | 5 | 0.003 to 0.1 | 1, 5 |
| MTL06 | MTL-6 | 6 | 0.003 to 0.1 | 1, 5 |
| MTL10 | MTL-10 | 10 | 0.003 to 0.1 | 1, 5 |

| TECHNICAL SPECIFICATIONS | | |
|---------------------------------|-----------------------|---------------------------------------------|
| PARAMETER | UNIT | MTL RESISTOR CHARACTERISTICS |
| Temperature Coefficient | ppm/ $^\circ\text{C}$ | See TCR vs. Resistance Value chart |
| Terminal Strength | lb | 5 min (MTL1A) and 10 min (MTL2B and larger) |
| Dielectric Withstanding Voltage | V_{AC} | 500 for MTL1A; 1000 for MTL2B and larger |
| Maximum Working Voltage | V | $(P \times R)^{1/2}$ |
| Operating Temperature Range | $^\circ\text{C}$ | -55 to +275 |
| Insulation Resistance | Ω | 1000 M Ω min. |

GLOBAL PART NUMBER INFORMATION

Global Part Numbering example: **MTL1A5L000FE66** (Visit www.vishay.net SAP Parts Manual for all options)

| | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|--|--|--|
| M | T | L | 1 | A | 5 | L | 0 | 0 | 0 | F | E | 6 | 6 | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|--|--|--|

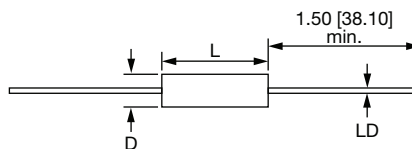
| | | | | |
|-----------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------|--------------------------------------------------------|---------------------------------------------------------------------------------------|
| GLOBAL MODEL (5 digits) MTL1A MTL2B MTL03 MTL05 MTL06 MTL10 | VALUE (5 digits) R = Decimal L = m Ω (below 0.01 Ω) 5L000 = 0.005 Ω R1000 = 0.1 Ω | TOLERANCE (1 digit) F = $\pm 1 \%$ J = $\pm 5 \%$ | PACKAGING CODE (3 digits) E66 = Bulk pack | SPECIAL (up to 3 digits) (Dash Number) From 1 to 999 as applicable |
|-----------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------|--------------------------------------------------------|---------------------------------------------------------------------------------------|

Historical Part Number example: **MTL-1A-0.005-1 %**

| | | |
|------------------|------------------|-----------|
| MTL-1A | 0.005 Ω | 1 % |
| HISTORICAL MODEL | RESISTANCE VALUE | TOLERANCE |



DIMENSIONS in inches [millimeters]



| GLOBAL MODEL | DIMENSIONS in inches [millimeters] | | |
|--------------|------------------------------------|----------------------|-----------------------|
| | L ± 0.020 [0.508] | D ± 0.020 [0.508] | LD ± 0.002 [0.051] |
| MTL1A | 0.430 [10.92] | 0.120 [3.05] | 0.025 [0.635] |
| MTL2B | 0.580 [14.73] | 0.200 [5.08] | 0.032 [0.813] |
| MTL03 | 0.600 [15.24] | 0.250 [6.35] | 0.032 [0.813] |
| MTL05 | 0.890 [22.61] | 0.335 [8.51] | 0.040 [1.02] |
| MTL06 | 1.055 [26.80] | 0.395 [10.03] | 0.040 [1.02] |
| MTL10 | 1.755 [44.58] | 0.355 [9.02] | 0.040 [1.02] |

MATERIAL SPECIFICATIONS

Element: Nickel-chrome alloy

Encapsulation: Molded epoxy

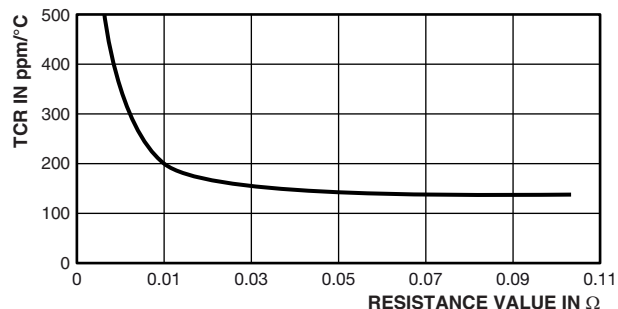
Terminal: Matte Tin

Part Marking: HEI, model, value, tolerance, date code

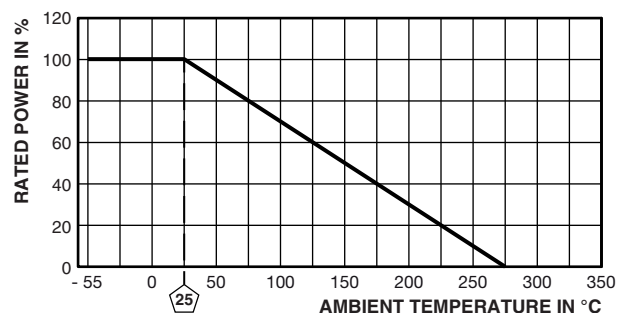
Note

- Due to resistor size limitations some resistors will have minimal information marked on parts.

TCR VS. RESISTANCE VALUE



DERATING



| PERFORMANCE | | |
|---------------------|--------------------------------------------------------|-------------|
| TEST | CONDITIONS OF TEST | TEST LIMITS |
| Temperature Cycling | -40 °C for 30 min/+125 °C for 30 min/1000 h | ± 1 % ΔR |
| Short Time Overload | 5 x rated power for 5 s | ± 1 % ΔR |
| Moisture Resistance | +40 °C 90 % to 95 % RH, 0.1 W _{DC} , 1000 h | ± 1 % ΔR |
| Load Life | 1000 h at rated power, +70 °C, 1.5 h "ON", 0.5 h "OFF" | ± 1 % ΔR |



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