

Wirewound Resistors, Non-Magnetic, Non-Inductive, Axial Lead


FEATURES

- High temperature coating (> 350 °C)
- Non-magnetic and all welded constructions greatly enhance frequency response. Combined with non-inductive Ayrton-Perry winding the inductive reactance and signal loss are almost totally eliminated.
- Ideal for Audio Industry
- Material categorization: For definitions of compliance please see www.vishay.com/doc?99912



RoHS
COMPLIANT
GREEN
(5-2008)

| STANDARD ELECTRICAL SPECIFICATIONS | | | | | | |
|------------------------------------|------------------|--|--|-------------------------------|-----------------------|-----------------------|
| GLOBAL MODEL | HISTORICAL MODEL | POWER RATING ⁽¹⁾ $P_{25\text{ }^\circ\text{C W}}$ CHARACTERISTIC U + 250 °C | POWER RATING ⁽¹⁾ $P_{25\text{ }^\circ\text{C W}}$ CHARACTERISTIC V + 350 °C | TOLERANCE ⁽²⁾ % | RESISTANCE RANGE Ω | WEIGHT (typical) g |
| MRA-05 | MRA05 | 4.0 | 5.0 | 1, 5, 10 | 0.01 to 15.0K | 1.00 |
| MRA-10 | MRA10 | 7.0 | 10.0 | 1, 5, 10 | 0.05 to 35.0K | 3.87 |
| MRA-12 | MRA12 | 10.0 | 12.0 | 1, 5, 10 | 0.05 to 85.0K | 5.02 |

Notes

- ⁽¹⁾ Vishay Mills MRA models have two power ratings depending on the operation temperature and stability requirements.
⁽²⁾ Other tolerances may be available, contact factory

| TECHNICAL SPECIFICATIONS | | |
|---------------------------------|-----------------|--|
| PARAMETER | UNIT | MRA RESISTOR CHARACTERISTICS |
| Temperature Coefficient | ppm/°C | ± 30 for 10 Ω and above; ± 50 for 1.0 Ω to 9.9 Ω; ± 90 for 0.5 Ω to 0.99 Ω |
| Terminal Strength | lb | 10 minimum |
| Dielectric Withstanding Voltage | V _{AC} | 500 for MRA-05 and 1000 for MRA-10 and MRA-12 |
| Operating Temperature Range | °C | Characteristic U = - 65 to + 250, Characteristic V = - 65 to + 350 |
| Maximum Working Voltage | V | $(P \times R)^{1/2}$ |

| GLOBAL PART NUMBER INFORMATION | | | | | | | | | | | | | | | | |
|---|---|---|--|---|---|--|---|--|-----------|---|--|---|---|---|--|--|
| Global Part Numbering example: MRA-1225R00JE12 (visit www.vishay.net Vishay Dale parts numbering manual for all options) | | | | | | | | | | | | | | | | |
| M | R | A | - | 1 | 2 | 2 | 5 | R | 0 | 0 | J | E | 1 | 2 | | |
| GLOBAL MODEL (6 digits) | | | VALUE (5 digits) | | | TOLERANCE (1 digit) | | PACKAGING CODE (3 digits) | | | SPECIAL (up to 2 digits) | | | | | |
| (See Standard Electrical Specifications Global Model column for options) | | | R = Decimal K = Thousand 1R500 = 1.5 Ω 1K500 = 1.5 kΩ | | | F = ± 1.0 % J = ± 5.0 % K = ± 10.0 % | | E07 = Tape/reel (MRA-10, MRA-12) E48 = Tape/reel (MRA-05) E12 = Bulk, up to 100 pc boxes | | | (Dash Number) From 1 to 99 as applicable | | | | | |
| Historical Part Number example: MRA12W25R0J | | | | | | | | | | | | | | | | |
| MRA12 | | | W = STANDARD | | | 25 Ω | | | 5 % | | | | | | | |
| HISTORICAL MODEL | | | TC | | | RESISTANCE VALUE | | | TOLERANCE | | | | | | | |

DIMENSIONS in inches [millimeters]


| MODEL | DIMENSIONS in inches [millimeters] | | | |
|--------|------------------------------------|---------------------|---------------------|-----------------------|
| | L ± 0.062 [1.57] | L ¹ Max. | D ± 0.031 [0.79] | LD ± 0.002 [0.051] |
| MRA-05 | 0.562 [14.27] | 0.650 [16.51] | 0.167 [4.24] | 0.032 [0.813] |
| MRA-10 | 0.875 [22.22] | 0.975 [24.76] | 0.312 [7.92] | 0.040 [1.016] |
| MRA-12 | 1.188 [30.18] | 1.280 [32.51] | 0.312 [7.92] | 0.040 [1.016] |

MATERIAL SPECIFICATIONS

Element: Copper-nickel alloy or nickel-chrome alloy, depending on resistance value

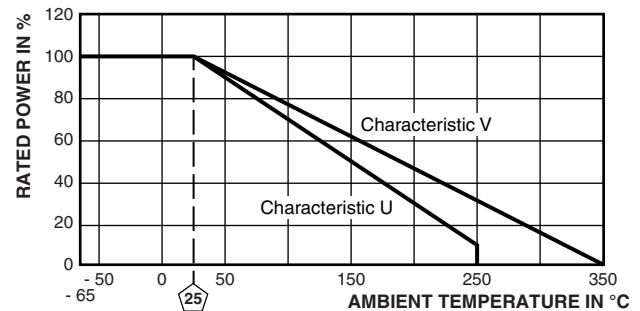
Core: Ceramic: Alumina

Coating: Special high temperature silicone

Standard Terminals: Tinned copper

End Caps: Copper alloy

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

DERATING


| PERFORMANCE | | | |
|---------------------------------|---|-----------------------|-----------------------|
| TEST | CONDITIONS OF TEST | TEST LIMITS | |
| | | (CHARACTERISTIC U) | (CHARACTERISTIC V) |
| Dielectric Withstanding Voltage | 1000 V _{RMS} , 1 min | ± (0.1 % + 0.05 Ω) ΔR | ± (0.1 % + 0.05 Ω) ΔR |
| High Frequency Vibration | Frequency varied 10 Hz to 2000 Hz, 20 g peak, 2 directions 6 h each | ± (0.1 % + 0.05 Ω) ΔR | ± (0.2 % + 0.05 Ω) ΔR |
| High Temperature Exposure | 250 h at + 250 °C for U Characteristic, + 350 °C for V Characteristic | ± (0.5 % + 0.05 Ω) ΔR | ± (4.0 % + 0.05 Ω) ΔR |
| Load Life | 2000 h at rated power, + 25 °C, 1.5 h "ON", 0.5 h "OFF" | ± (0.5 % + 0.05 Ω) ΔR | ± (3.0 % + 0.05 Ω) ΔR |
| Low Temperature Storage | - 65 °C for 24 h | ± (0.2 % + 0.05 Ω) ΔR | ± (2.0 % + 0.05 Ω) ΔR |
| Moisture Resistance | MIL-STD 202 Method 106 | ± (0.2 % + 0.05 Ω) ΔR | ± (2.0 % + 0.05 Ω) ΔR |
| Shock, Specified Pulse | MIL-STD 202 Method 213, 100 g's for 6 ms, 10 shocks | ± (0.1 % + 0.05 Ω) ΔR | ± (0.2 % + 0.05 Ω) ΔR |
| Thermal Shock | Rated power applied until thermally stable, then 15 min at - 55 °C | ± (0.2 % + 0.05 Ω) ΔR | ± (2.0 % + 0.05 Ω) ΔR |
| Short Time Overload | 5 x rated power (5 W smaller), 10 x rated power (7 W and larger) for 5 s | ± (0.2 % + 0.05 Ω) ΔR | ± (2.0 % + 0.05 Ω) ΔR |
| Terminal Strength | 5 s to 10 s 10 pound pull test; torsion test - 3 alternating directions, 360 ° each | ± (0.1 % + 0.05 Ω) ΔR | ± (1.0 % + 0.05 Ω) ΔR |



Disclaimer

ALL PRODUCT, PRODUCT SPECIFICATIONS AND DATA ARE SUBJECT TO CHANGE WITHOUT NOTICE TO IMPROVE RELIABILITY, FUNCTION OR DESIGN OR OTHERWISE.

Vishay Intertechnology, Inc., its affiliates, agents, and employees, and all persons acting on its or their behalf (collectively, "Vishay"), disclaim any and all liability for any errors, inaccuracies or incompleteness contained in any datasheet or in any other disclosure relating to any product.

Vishay makes no warranty, representation or guarantee regarding the suitability of the products for any particular purpose or the continuing production of any product. To the maximum extent permitted by applicable law, Vishay disclaims (i) any and all liability arising out of the application or use of any product, (ii) any and all liability, including without limitation special, consequential or incidental damages, and (iii) any and all implied warranties, including warranties of fitness for particular purpose, non-infringement and merchantability.

Statements regarding the suitability of products for certain types of applications are based on Vishay's knowledge of typical requirements that are often placed on Vishay products in generic applications. Such statements are not binding statements about the suitability of products for a particular application. It is the customer's responsibility to validate that a particular product with the properties described in the product specification is suitable for use in a particular application. Parameters provided in datasheets and / or specifications may vary in different applications and performance may vary over time. All operating parameters, including typical parameters, must be validated for each customer application by the customer's technical experts. Product specifications do not expand or otherwise modify Vishay's terms and conditions of purchase, including but not limited to the warranty expressed therein.

Except as expressly indicated in writing, Vishay products are not designed for use in medical, life-saving, or life-sustaining applications or for any other application in which the failure of the Vishay product could result in personal injury or death. Customers using or selling Vishay products not expressly indicated for use in such applications do so at their own risk. Please contact authorized Vishay personnel to obtain written terms and conditions regarding products designed for such applications.

No license, express or implied, by estoppel or otherwise, to any intellectual property rights is granted by this document or by any conduct of Vishay. Product names and markings noted herein may be trademarks of their respective owners.



Компания «ЭлектроПласт» предлагает заключение долгосрочных отношений при поставках импортных электронных компонентов на взаимовыгодных условиях!

Наши преимущества:

- Оперативные поставки широкого спектра электронных компонентов отечественного и импортного производства напрямую от производителей и с крупнейших мировых складов;
- Поставка более 17-ти миллионов наименований электронных компонентов;
- Поставка сложных, дефицитных, либо снятых с производства позиций;
- Оперативные сроки поставки под заказ (от 5 рабочих дней);
- Экспресс доставка в любую точку России;
- Техническая поддержка проекта, помощь в подборе аналогов, поставка прототипов;
- Система менеджмента качества сертифицирована по Международному стандарту ISO 9001;
- Лицензия ФСБ на осуществление работ с использованием сведений, составляющих государственную тайну;
- Поставка специализированных компонентов (Xilinx, Altera, Analog Devices, Intersil, Interpoint, Microsemi, Aeroflex, Peregrine, Syfer, Eurofarad, Texas Instrument, Miteq, Cobham, E2V, MA-COM, Hittite, Mini-Circuits, General Dynamics и др.);

Помимо этого, одним из направлений компании «ЭлектроПласт» является направление «Источники питания». Мы предлагаем Вам помощь Конструкторского отдела:

- Подбор оптимального решения, техническое обоснование при выборе компонента;
- Подбор аналогов;
- Консультации по применению компонента;
- Поставка образцов и прототипов;
- Техническая поддержка проекта;
- Защита от снятия компонента с производства.



Как с нами связаться

Телефон: 8 (812) 309 58 32 (многоканальный)

Факс: 8 (812) 320-02-42

Электронная почта: org@eplast1.ru

Адрес: 198099, г. Санкт-Петербург, ул. Калинина, дом 2, корпус 4, литера А.