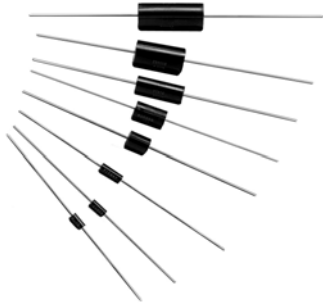




Bulk Metal® Foil Technology Tubular Axial-Lead Resistors, Meets or Exceed MIL-R-39005 Requirements



Any value and tolerance available within resistance range

This series of axial leaded resistors is made using the same foil technology as the S102C. The difference is axial versus radial leads. Axial leads have the advantage of readily available auto insertion equipment while the radial leaded devices may require additional tooling. Also, when converting from metal film (RNC 55) to foil (VMTA 55) boards may already be laid out for the axial leaded device. It is worth noting that for new designs the S102C footprint is the smallest in the industry (taking into account the need for lead exit to board pad length allowance).

Our Application Engineering Department is available to advise and to make recommendations. For non-standard technical requirements and special applications, please contact us.

| TABLE 1 - TCR (for values under 50R) | | |
|--------------------------------------|-----------------|--------------------------------|
| VALUES | 0 °C to + 60 °C | - 55 to + 125 °C, + 25 °C Ref. |
| 25R - 50R | ± 5 ppm/°C | ± 8 ppm/°C |
| 15R - 24R999 | ± 6 ppm/°C | ± 10 ppm/°C |
| 5R - 14R999 | ± 8 ppm/°C | ± 12 ppm/°C |
| 1R - 4R999 | ± 15 ppm/°C | ± 20 ppm/°C |

| TABLE 2 - MODEL SELECTION | | | | | | | |
|---------------------------|-----------|------------|-------------|-------------------------|------------------------------------|---------------------|-------------------------|
| VISHAY MODEL | MIL STYLE | POWER | | MAXIMUM WORKING VOLTAGE | RESISTANCE RANGE ¹⁾ (Ω) | TIGHTEST TOLERANCE | TCR RANGE ²⁾ |
| | | at + 70 °C | at + 125 °C | | | | |
| VTA56 | RBR56 | 0.25 W | 0.125 W | 300 V | 5 to 24R9 25 to 150K | ± 0.1 % ± 0.01 % | V4 V3, V2 |
| VTA55 | RBR55 | 0.3 W | 0.15 W | 300 V | 5 to 24R9 25 to 150K | ± 0.1 % ± 0.01 % | V4 V3, V2 |
| VTA54 | RBR54 | 0.5 W | 0.25 W | 300 V | 5 to 24R9 25 to 300K | ± 0.1 % ± 0.01 % | V4 V3, V2 |
| VTA53 | RBR53 | 0.66 W | 0.33 W | 300 V | 5 to 24R9 25 to 300K | ± 0.1 % ± 0.01 % | V4 V3, V2 |
| VTA52 | RBR52 | 1.0 W | 0.5 W | 300 V | 5 to 24R9 25 to 500K | ± 0.1 % ± 0.01 % | V4 V3, V2 |
| VMTA55 | RNC55 | 0.2 W | 0.1 W | 200 V | 5 to 49R9 50 to 30K | ± 0.1 % ± 0.01 % | V4 V3, V2 |
| VMTB60 | RNC60 | 0.25 W | 0.125 W | 250 V | 5 to 49R9 50 to 60K | ± 0.1 % ± 0.01 % | V4 V3, V2 |

Notes

- For higher/lower resistance values, consult the Application Engineering Department
- TCR options for values > 50 Ω
 V4 = ± 4 ppm/°C (0 to + 60 °C); ± 8 ppm/°C (- 55 °C to + 125 °C, + 25 °C Ref.)
 V3 = ± 3 ppm/°C (0 to + 60 °C); ± 5 ppm/°C (- 55 °C to + 125 °C, + 25 °C Ref.)
 V2 = ± 2 ppm/°C (0 to + 60 °C); ± 5 ppm/°C (- 55 °C to + 125 °C, + 25 °C Ref.)

* Pb containing terminations are not RoHS compliant, exemptions may apply

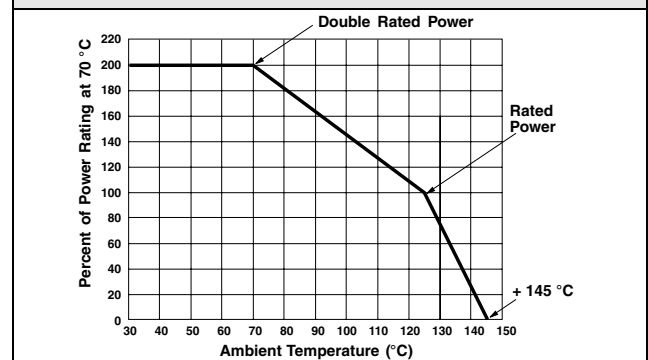
FEATURES

- Temperature Coefficient of Resistance (TCR):
 ± 8 ppm/°C (- 55 °C to + 125 °C, + 25 °C Ref.)
 ± 4 ppm/°C (0 °C to + 60 °C)
- Tolerance: to ± 0.01 %
- Load Life Stability:
 ± 0.05 % at 25 °C, 2000 hours at Rated Power
 ± 0.0025 % at 25 °C, 2000 hours at Low Power
- Electrostatic Discharge (ESD) above 25 000 Volts
- Resistance Range: 5 Ω to 500 kΩ
- Power Rating: 0.2 W to 1.0 W at 70 °C
- Non-Inductive, Non-Capacitive Design
- Thermal EMF: 0.1 μV/°C maximum, 0.05 μV/°C typical
- Voltage Coefficient: < 0.1 ppm/V
- Terminal Finishes available: Lead (Pb)-free
Tin/Lead
- For better performances, please contact Application Engineering
- Any value available within resistance range (e.g. 1K2345)
- Prototype samples available from 48 hours. For more information, please contact foil@vishay.com



RoHS* COMPLIANT

FIGURE 1 - POWER DERATING CURVE



VTA52 through 56, VMTA55, VMTB60



Vishay Foil Resistors

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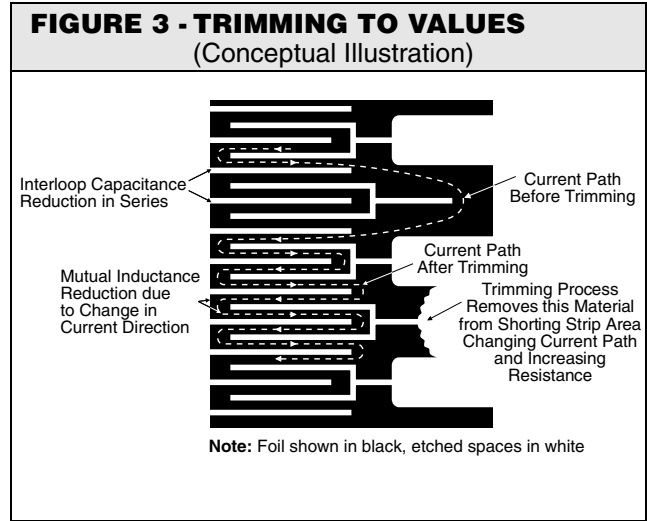
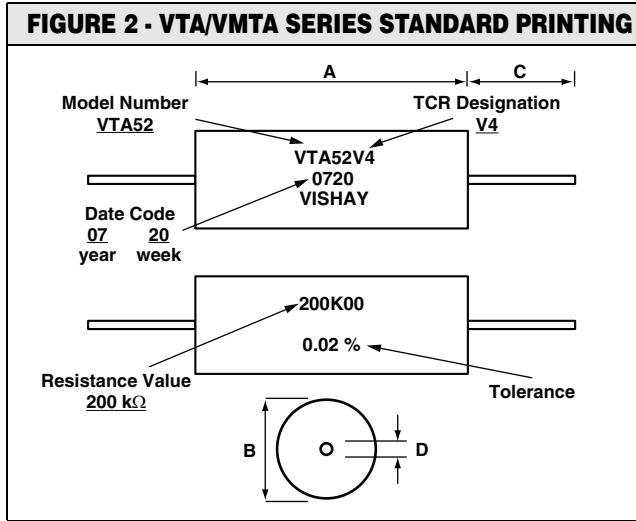
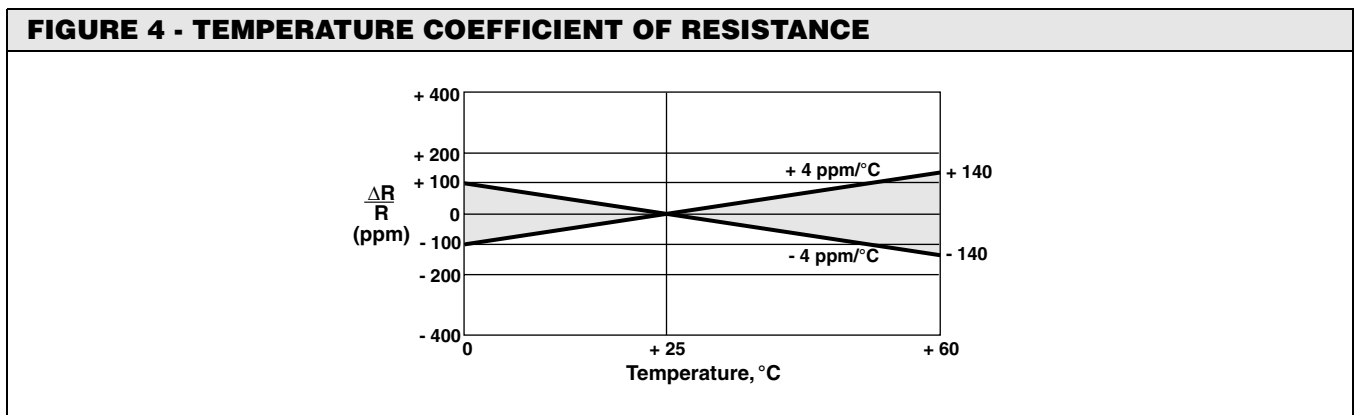


TABLE 3 - VTA/VMTX DIMENSIONS

| VISHAY MODEL | MIL SIZE | BODY | | | | | | | | LEAD | | | |
|--------------|----------|---------------|-------------------------|--------------|-----------------------|--------------|-------------------------|------|-----------------------|--------------|-------|--------------|------|
| | | LENGTH (A) | | | | DIAMETER (B) | | | | LENGTH (C) | | DIAMETER (D) | |
| | | INCH | | mm | | INCH | | mm | | INCH | mm | INCH | mm |
| VTA56 | RBR56 | 0.356 | $\frac{+0.005}{-0.010}$ | 9.04 | $\frac{+0.13}{-0.25}$ | 0.260 | $\frac{+0.005}{-0.015}$ | 6.60 | $\frac{+0.13}{-0.38}$ | 1.5 Minimum | 38.10 | 0.032 | 0.81 |
| VTA55 | RBR55 | 0.500 ± 0.020 | | 12.70 ± 0.51 | | 0.260 | $\frac{+0.005}{-0.010}$ | 6.60 | $\frac{+0.13}{-0.25}$ | 1.5 Minimum | 38.10 | 0.032 | 0.81 |
| VTA54 | RBR54 | 0.750 | $\frac{+0.020}{-0.032}$ | 19.05 | $\frac{+0.51}{-0.81}$ | 0.260 | $\frac{+0.005}{-0.010}$ | 6.60 | $\frac{+0.13}{-0.25}$ | 1.5 Minimum | 38.10 | 0.032 | 0.81 |
| VTA53 | RBR53 | 0.750 ± 0.020 | | 19.05 ± 0.51 | | 0.375 | ± 0.015 | 9.53 | ± 0.38 | 1.5 Minimum | 38.10 | 0.032 | 0.81 |
| VTA52 | RBR52 | 1.000 | $\frac{+0.020}{-0.032}$ | 25.40 | $\frac{+0.51}{-0.81}$ | 0.375 | ± 0.015 | 9.53 | ± 0.38 | 1.35 Minimum | 34.29 | 0.032 | 0.81 |
| VMTA55 | RNC55 | 0.270 ± 0.005 | | 6.86 ± 0.13 | | 0.120 | $\frac{+0.005}{-0.010}$ | 3.05 | $\frac{+0.13}{-0.25}$ | 1.5 Minimum | 38.10 | 0.025 | 0.64 |
| VMTB60 | RNC60 | 0.375 ± 0.005 | | 9.53 ± 0.13 | | 0.160 | ± 0.005 | 4.06 | ± 0.13 | 1.5 Minimum | 38.10 | 0.025 | 0.64 |





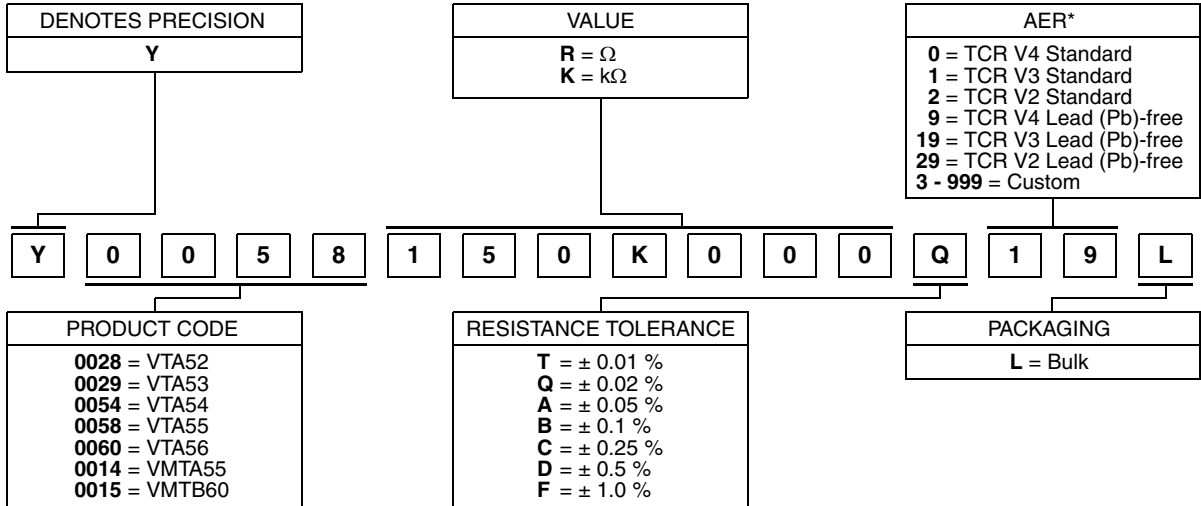
VTA52 through 56, VMTA55, VMTB60

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Vishay Foil Resistors

TABLE 4 - GLOBAL PART NUMBER INFORMATION

NEW GLOBAL PART NUMBER: Y0058150K000Q19L (preferred part number format)



FOR EXAMPLE: ABOVE GLOBAL ORDER Y0058 150K000 Q 19 L:

TYPE: VTA55
 VALUE: 150.0 kΩ
 ABSOLUTE TOLERANCE: ± 0.02 %
 TCR: V3
 TERMINATION: Lead (Pb)-free
 PACKAGING: Bulk

HISTORICAL PART NUMBER: VTA55V3T 150K00 Q B (will continue to be used)

| | | | | | |
|----------------------------------------------------------------------------------------------------------------|-------------------------------------|----------------------------------------------------|--------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------|
| VTA55 | V3 | T | 150K00 | Q | B |
| MODEL | TCR | TERMINATION | OHMIC VALUE | RESISTANCE TOLERANCE | PACKAGING |
| VTA52 VTA53 VTA54 VTA55 VTA56 VMTA55 VMTB60 | V4 V3 V2 | T = Lead (Pb)-free None = Tin/Lead alloy | 150K00 = 150.0 kΩ | T = ± 0.01 % Q = ± 0.02 % A = ± 0.05 % B = ± 0.1 % C = ± 0.25 % D = ± 0.5 % F = ± 1.0 % | B = Bulk |

Note

* For non-standard requests, please contact Application Engineering.



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