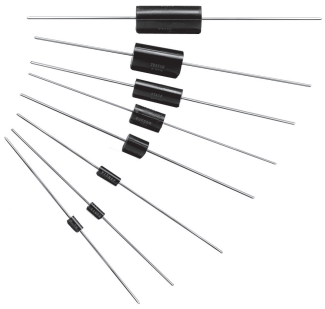
Bulk Metal® Foil Technology Tubular Axial-Lead Resistors, Meets or Exceed MIL-R-39005 Requirements



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.

FEATURES

Pb-free Available

RoHS* COMPLIANT

- 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@vishaypg.com

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

FIGURE 1 - POWER DERATING CURVE

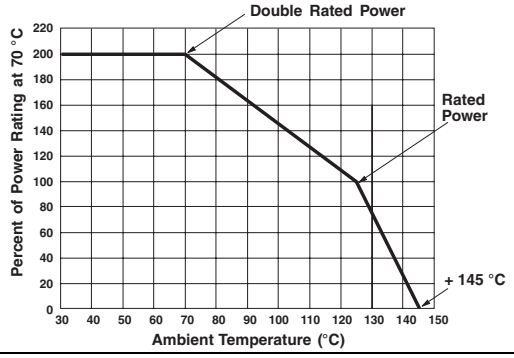


TABLE 2 - MODEL SELECTION

VISHAY MODEL	MIL STYLE	POWER at + 70 °C	POWER at + 125 °C	MAXIMUM WORKING VOLTAGE	RESISTANCE RANGE[1] (Ω)	TIGHTEST TOLERANCE	TCR RANGE[2]
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

1. For higher/lower resistance values, consult the Application Engineering Department
2. 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

FIGURE 2 - VTA/VMTA SERIES STANDARD PRINTING

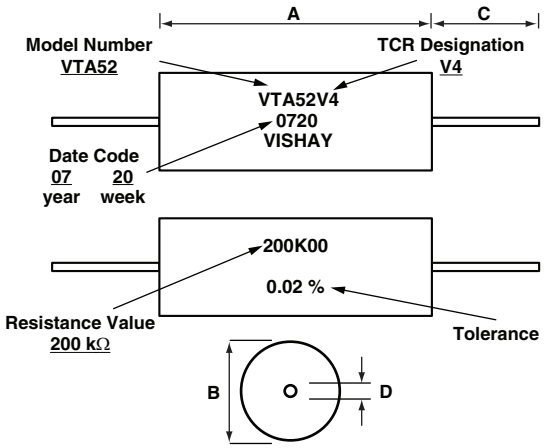
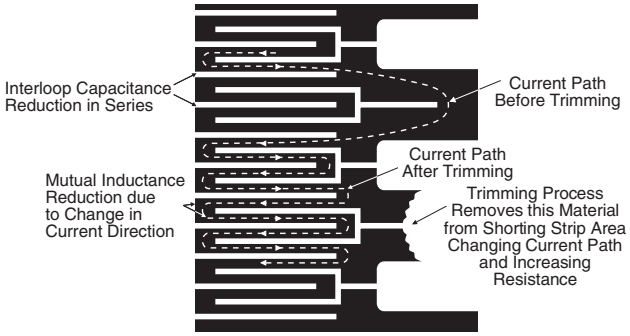


FIGURE 3 - TRIMMING TO VALUES
(Conceptual Illustration)



Note: Foil shown in black, etched spaces in white

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	+ 0.005 / - 0.010	9.04	+ 0.13 / - 0.25	0.260	+ 0.005 / - 0.015	6.60	+ 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	+ 0.005 / - 0.010	6.60	+ 0.13 / - 0.25	1.5 Minimum	38.10	0.032	0.81
VTA54	RBR54	0.750	+ 0.020 / - 0.032	19.05	+ 0.51 / - 0.81	0.260	+ 0.005 / - 0.010	6.60	+ 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	+ 0.020 / - 0.032	25.40	+ 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	+ 0.005 / - 0.010	3.05	+ 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

FIGURE 4 - TEMPERATURE COEFFICIENT OF RESISTANCE

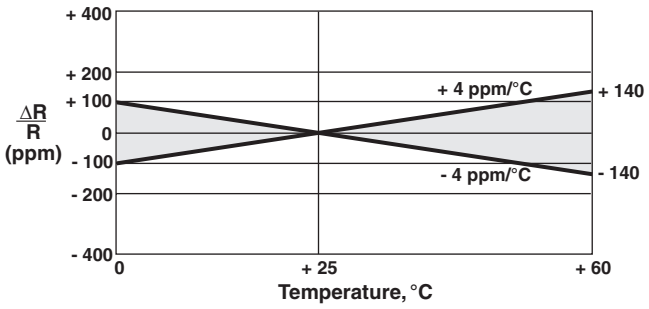
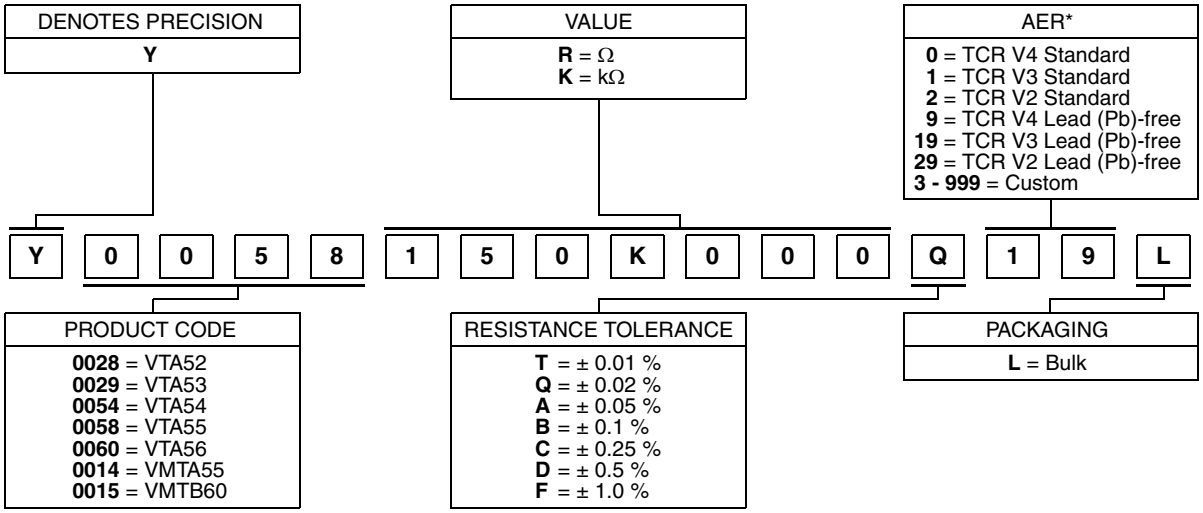


TABLE 4 - GLOBAL PART NUMBER INFORMATION

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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