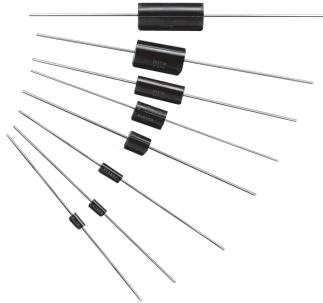


## Bulk Metal® Foil Technology Tubular Axial-Lead Resistors, Meets or Exceed MIL-R-39005 Requirements



### 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 <sup>1)</sup> (Ω)	TIGHTEST TOLERANCE	TCR RANGE <sup>2)</sup>
		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

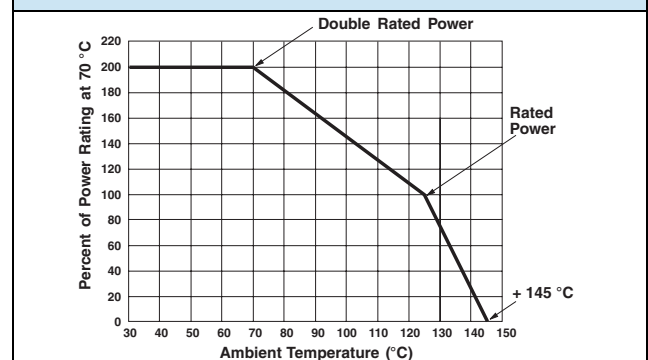
### FEATURES

- 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@vishaypg.com](mailto:foil@vishaypg.com)

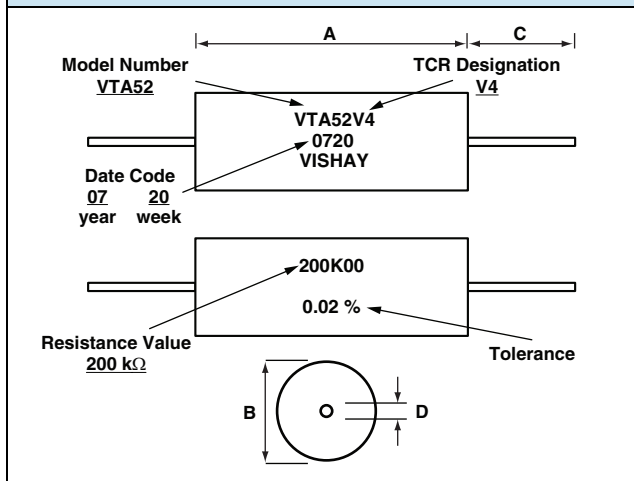


RoHS\*  
COMPLIANT

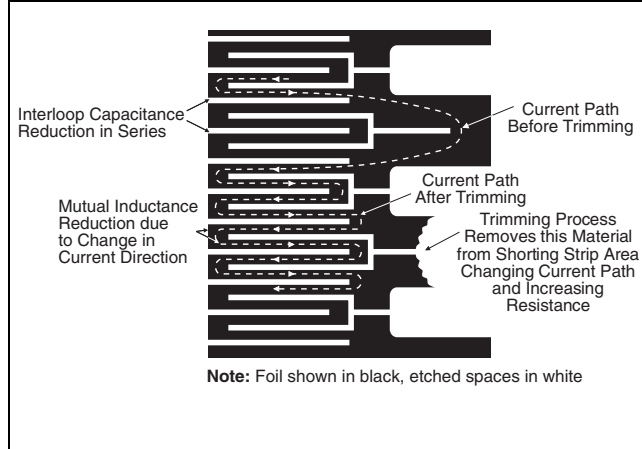
**FIGURE 1 - POWER DERATING CURVE**



**FIGURE 2 - VTA/VMTA SERIES STANDARD PRINTING**



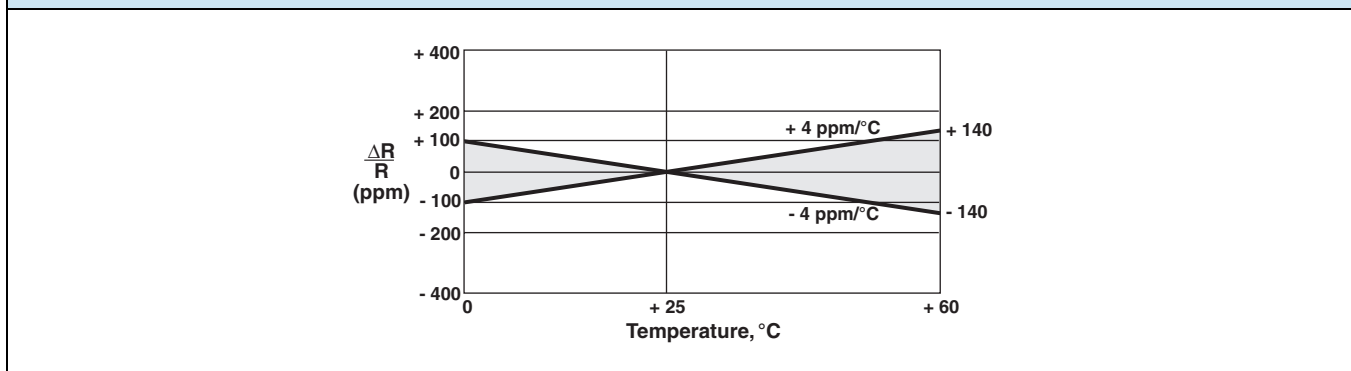
**FIGURE 3 - TRIMMING TO VALUES**  
(Conceptual Illustration)



**TABLE 3 - VTA/VMTX DIMENSIONS**

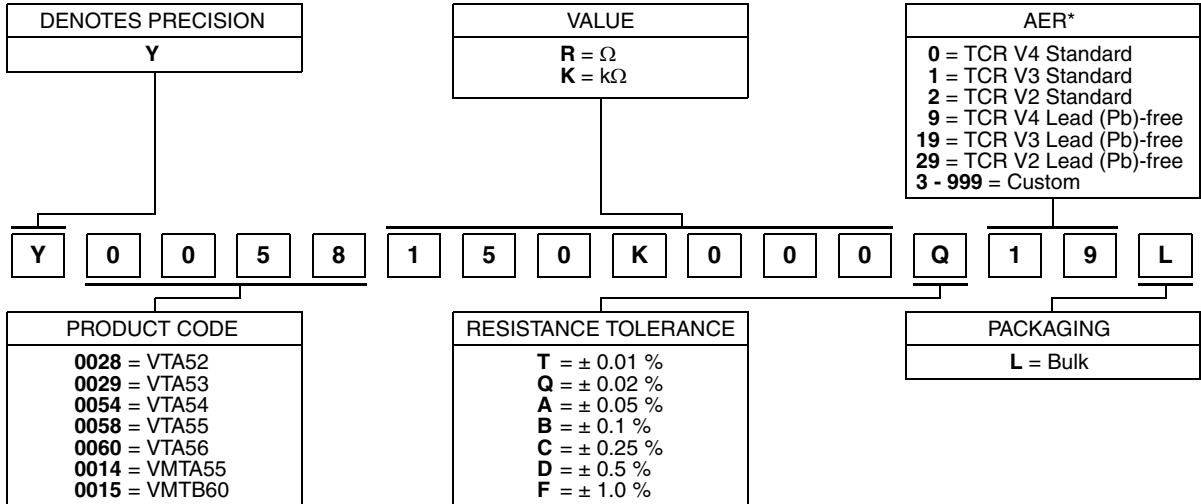
VISHAY MODEL	MIL SIZE	BODY								LEAD			
		LENGTH (A)				DIAMETER (B)				LENGTH (C)		DIAMETER (D)	
		INCH		mm		INCH		mm		INCH	mm	INCH	mm
VTA56	RBR56	0.356	$\frac{+0.005}{-0.010}$	9.04	$\frac{+0.13}{-0.25}$	0.260	$\frac{+0.005}{-0.015}$	6.60	$\frac{+0.13}{-0.38}$	1.5 Minimum	38.10	0.032	0.81
VTA55	RBR55	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

**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)**

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

**Note**

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

## Disclaimer

ALL PRODUCTS, PRODUCT SPECIFICATIONS AND DATA ARE SUBJECT TO CHANGE WITHOUT NOTICE.

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

The product specifications do not expand or otherwise modify Vishay Precision Group's terms and conditions of purchase, including but not limited to, the warranty expressed therein.

Vishay Precision Group makes no warranty, representation or guarantee other than as set forth in the terms and conditions of purchase. **To the maximum extent permitted by applicable law, Vishay Precision Group 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.**

Information provided in datasheets and/or specifications may vary from actual results in different applications and performance may vary over time. Statements regarding the suitability of products for certain types of applications are based on Vishay Precision Group's knowledge of typical requirements that are often placed on Vishay Precision Group products. 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.

No license, express, implied, or otherwise, to any intellectual property rights is granted by this document, or by any conduct of Vishay Precision Group.

The products shown herein are not designed for use in life-saving or life-sustaining applications unless otherwise expressly indicated. Customers using or selling Vishay Precision Group products not expressly indicated for use in such applications do so entirely at their own risk and agree to fully indemnify Vishay Precision Group for any damages arising or resulting from such use or sale. Please contact authorized Vishay Precision Group personnel to obtain written terms and conditions regarding products designed for such applications.

Product names and markings noted herein may be trademarks of their respective owners.