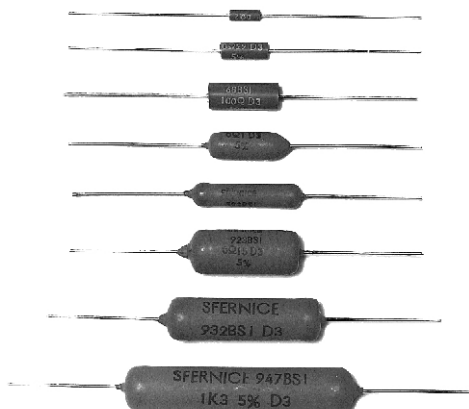


Molded and Insulated Wirewound Power Resistors Axial Leads

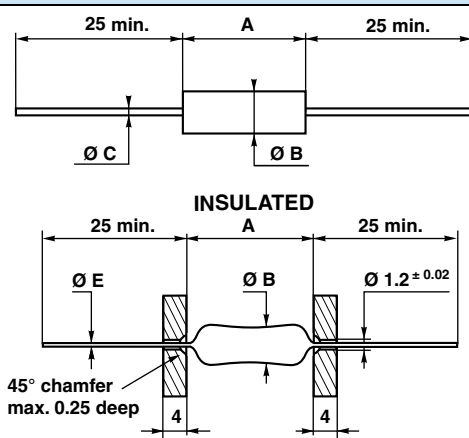


FEATURES

- 1 W to 10 W
- Excellent stability = Typical drift $\pm 1\%$ after 2000 h
- High power = Up to 10 W (25 °C)
- Low ohmic values = 0.01 Ω available
- Electrical insulation
- Climatic protection
- Material categorization: For definitions of compliance please see www.vishay.com/doc?99912


RoHS
COMPLIANT

DIMENSIONS in millimeters



SERIES AND STYLE	PROTECTION			
	A	$\varnothing B$	$\varnothing C \pm 0.1$	WEIGHT (g)
58BSI	6.5 ± 0.2	2.4 ± 0.1	0.6	0.3
63BSI	10 ± 0.2	3.7 ± 0.1		0.45
68BSI	15 ± 0.5	5.6 ± 0.2	0.8	1.3
INSULATED	PROTECTION			
	A	$\varnothing B$	$\varnothing C \pm 0.1$	WEIGHT (g)
516BSI	17 ± 2	5.5 ± 1	0.8	1.6
523BSI	24 ± 2	5.5 ± 1		2.5
923BSI	26 ± 2	10 ± 1.5		6
932BSI	34 ± 3	10 ± 1.5		7.5
947BSI	51 ± 3	10 ± 1.5		10

STANDARD ELECTRICAL SPECIFICATIONS

MODEL	SIZE	RESISTANCE RANGE Ω	RATED POWER $P_{25^\circ C}$ W	LIMITING ELEMENT VOLTAGE V	TOLERANCE $\pm \%$	TEMPERATURE COEFFICIENT $\pm \text{ppm}/^\circ\text{C}$
58BSI	058	0.1 to 2K	1	50	0.5, 1, 2, 5	100, 300
63BSI	063	0.025 to 4K	2	120	0.5, 1, 2, 5	100, 300
68BSI	068	0.01 to 15K	3	200	0.5, 1, 2, 5	100, 300
516BSI	516	0.01 to 20K	4	200	0.5, 1, 2, 5	100, 300
523BSI	523	0.015 to 40K	5	250	0.5, 1, 2, 5	100, 300
923BSI	923	0.02 to 60K	6	300	0.5, 1, 2, 5	100, 300
932BSI	932	0.035 to 100K	8	500	0.5, 1, 2, 5	100, 300
947BSI	947	0.06 to 150K	10	750	0.5, 1, 2, 5	100, 300

TECHNICAL SPECIFICATIONS

VISHAY SFERNICE SERIES			58BSI	63BSI	68BSI	516BSI	523BSI	923BSI	932BSI	947BSI
Ohmic Range in Relation to	$\pm 100 \text{ ppm}/^\circ\text{C}$	$\pm 0.5\%$ $\pm 5\%$	0.1 Ω 2 k Ω	0.1 Ω 4 k Ω	0.1 Ω 15 k Ω	0.1 Ω 20 k Ω	0.1 Ω 40 k Ω	0.1 Ω 60 k Ω	0.1 Ω 100 k Ω	0.1 Ω 150 k Ω
Temperature Coefficient	$\pm 300 \text{ ppm}/^\circ\text{C}$	$\pm 1\%$ $\pm 5\%$	-	0.025 Ω < 0.1 Ω	0.01 Ω < 0.1 Ω	0.01 Ω < 0.1 Ω	0.015 Ω < 0.1 Ω	0.02 Ω < 0.1 Ω	0.035 Ω < 0.1 Ω	0.06 Ω < 0.1 Ω

**MECHANICAL SPECIFICATIONS**

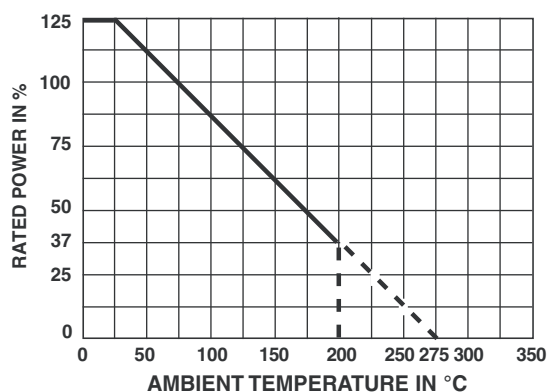
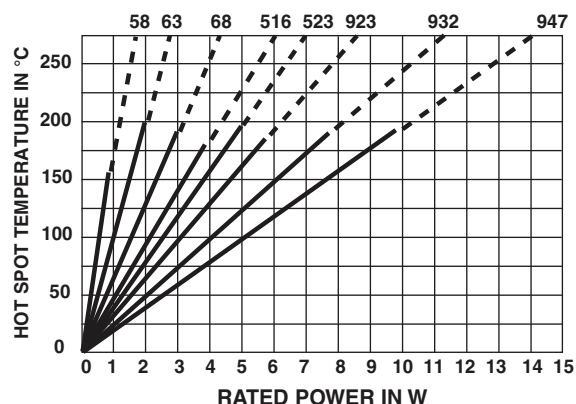
Mechanical Protection	Molded or painted (insulated)
Resistive Element	CuNi or CrNi
Substrate	Alumina
Connections	Sn/Ag/Cu 99/0.3/0.7

ENVIRONMENTAL SPECIFICATIONS

Temperature Range	- 55 °C to + 275 °C
Climatic Category	55/200/56

PERFORMANCE

TESTS	CONDITIONS	REQUIREMENTS	TYPICAL VALUES AND DRIFTS
Dielectric Strength	IEC 60115-1 1000 V _{RMS} for 923 to 947 500 V _{RMS} for 58 to 523	± (0.1 % + 0.05 Ω)	± (0.1 % + 0.05 Ω)
Short Time Overload	IEC 60115-1 5 P _r /5 s for P _r < 5 W 10 P _r /5 s for P _r ≥ 5 W	± (0.2 % + 0.05 Ω)	± (0.1 % + 0.05 Ω)
Endurance	IEC 60115-1 90'/30' P _r at 25 °C, 2000 h	± (1 % + 0.05 Ω)	± (0.1 % + 0.05 Ω)
Endurance at High Temperature	250 h at 275 °C	± (0.5 % + 0.05 Ω)	± (0.3 % + 0.05 Ω)
Thermal Shock	Load at 100 % P _r followed by cold temp. exposure at - 55 °C	± (0.2 % + 0.05 Ω)	± (0.1 % + 0.05 Ω)
Climatic Sequence	IEC 60115-1 - 55 °C/+ 200 °C 5 cycles	± (0.5 % + 0.05 Ω) Insulation resistance ≥ 100 MΩ	± (0.3 % + 0.05 Ω) Insulation resistance > 10 GΩ
Damp Heat, Steady State	IEC 60115-1/IEC 60068-2-78 56 days, 40 °C, 93 % RH	± (0.5 % + 0.05 Ω) Insulation resistance ≥ 100 MΩ	± (0.3 % + 0.05 Ω) Insulation resistance > 10 GΩ
Moisture Resistance	MIL-STD-202 method 106	± (0.2 % + 0.05 Ω) Insulation resistance ≥ 100 MΩ	± (13 % + 0.05 Ω) Insulation resistance > 10 GΩ
Shock	MIL-STD-202 100 g method 205 - test C	± (0.1 % + 0.05 Ω)	± (0.05 % + 0.05 Ω)
Vibration	MIL-STD-202 method 204 - Test D: 20 g 10Hz/2000 Hz	± (0.1 % + 0.05 Ω)	± (0.05 % + 0.05 Ω)

POWER RATING**TEMPERATURE RISE****MARKING**

GEKA trademark, model, style, nominal resistance (in Ω), tolerance (in %), manufacturing date.
Because of lack of space, small styles are marked with ohmic value (in Ω), and tolerance (in %) only.



ORDERING INFORMATION

BSI	63	U22	2 %	± 100 ppm/°C	TR300	e1
MODEL	STYLE	OHMIC VALUE	TOLERANCE	TEMPERATURE COEFFICIENT	PACKAGING	LEAD (Pb)-FREE

GLOBAL PART NUMBER INFORMATION

B	S	I	0	6	3	2	R	8	7	0	F	R	2	2	
GLOBAL MODEL	SIZE	OHMIC VALUE	TOLERANCE	PACKAGING	SPECIAL										
BSI	058 063 068 516 523 923 932 947	The first digits are significant figures and the last digit specifies the number of zeros to follow. R designates decimal point. 2R870 = 2.87 Ω 1R200 = 1.2 Ω 10020 = 10 000 Ω R3300 = 0.33 Ω ...	D = 0.5 % F = 1 % G = 2 % J = 5 %	Size 058: R26 = Reel (5000 pieces) Size 063: R22 = Reel (3000 pieces) Size 68, 516, 523: R17 = Reel (1250 pieces) Size 923, 932, 947: B19 = Box (30 pieces) Other packaging existing	As applicable Ex = AD7										



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.

Material Category Policy

Vishay Intertechnology, Inc. hereby certifies that all its products that are identified as RoHS-Compliant fulfill the definitions and restrictions defined under Directive 2011/65/EU of The European Parliament and of the Council of June 8, 2011 on the restriction of the use of certain hazardous substances in electrical and electronic equipment (EEE) - recast, unless otherwise specified as non-compliant.

Please note that some Vishay documentation may still make reference to RoHS Directive 2002/95/EC. We confirm that all the products identified as being compliant to Directive 2002/95/EC conform to Directive 2011/65/EU.

Vishay Intertechnology, Inc. hereby certifies that all its products that are identified as Halogen-Free follow Halogen-Free requirements as per JEDEC JS709A standards. Please note that some Vishay documentation may still make reference to the IEC 61249-2-21 definition. We confirm that all the products identified as being compliant to IEC 61249-2-21 conform to JEDEC JS709A standards.