



Wirewound Resistors, Industrial Power, Edgewound



FEATURES

- High temperature silicon coating
- Complete welded construction
- Excellent for intermittent power and pulsing applications
- Designed to meet heavy-duty requirement where space is at a premium
- Excellent stability in operation (< 3 % change in resistance)
- Material categorization:
for definitions of compliance please see www.vishay.com/doc?99912


RoHS*
Available

HALOGEN
FREE
Available

GREEN
(5-2008)
Available

Note

* This datasheet provides information about parts that are RoHS-compliant and / or parts that are non-RoHS-compliant. For example, parts with lead (Pb) terminations are not RoHS-compliant. Please see the information / tables in this datasheet for details.

STANDARD ELECTRICAL SPECIFICATIONS

GLOBAL MODEL	HISTORICAL MODEL	POWER RATING $P_{25^{\circ}\text{C}}$ W	RESISTANCE RANGE Ω	TOLERANCE $\pm \%$	WEIGHT (typical) g
HLZ033	HLZ-33	35	0.05 to 1.9	5, 10	18
HLZ090	HLZ-90	90	0.10 to 5.7	5, 10	36
HLZ099	HLZ-99	100	0.15 to 6.1	5, 10	41
HLZ105	HLZ-105	105	0.20 to 7.4	5, 10	49
HLZ110	HLZ-110	110	0.20 to 8.6	5, 10	54
HLZ140	HLZ-140	140	0.08 to 9.0	5, 10	109
HLZ165	HLZ-165	165	0.35 to 13.0	5, 10	91
HLZ220	HLZ-220	220	0.10 to 16.0	5, 10	163
HLZ240	HLZ-240	240	0.10 to 18.0	5, 10	186
HLZ275	HLZ-275	275	0.15 to 23.0	5, 10	224
HLZ300	HLZ-300	300	0.15 to 25.0	5, 10	236
HLZ375	HLZ-375	375	0.20 to 32.0	5, 10	286

TECHNICAL SPECIFICATIONS

PARAMETER	UNIT	HLZ RESISTOR CHARACTERISTICS
Temperature Coefficient	ppm/ $^{\circ}\text{C}$	± 30 for 10 Ω and above; ± 50 for 1 Ω to 9.9 Ω ; ± 90 for 0.1 Ω to 0.99 Ω
Short Time Overload	-	10 x rated power for 5 s
Terminal Strength	lb	10 minimum
Dielectric Withstanding Voltage	V_{AC}	1000, from terminal to mounting hardware
Maximum Working Voltage	V	$(P \times R)^{1/2}$
Insulation Resistance	Ω	1000 M Ω minimum dry, 100 M Ω minimum after moisture test
Operating Temperature Range	$^{\circ}\text{C}$	-55 to +350

GLOBAL PART NUMBER INFORMATION

Global Part Numbering example: HLZ16506Z10R00KJ

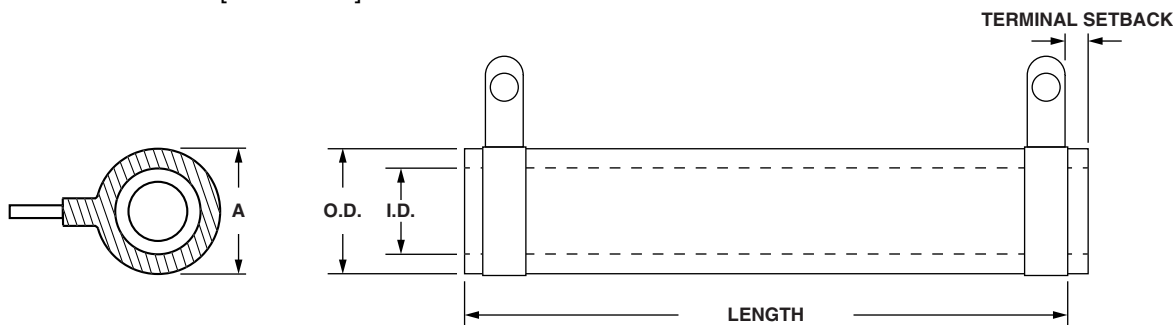
H L Z 1 6 5 0 6 Z 1 0 R 0 0 K J

GLOBAL MODEL	TERMINAL DESIGNATION	TERMINAL FINISH	RESISTANCE VALUE	TOLERANCE	PACKAGING CODE	SPECIAL
HLZ165 (see "Standard Electrical Specifications" table above for additional P/N's)	06 07 15	E = lead (Pb)-free Z = tin / lead N = nickel	R = decimal K = thousand 10R00 = 10.0 Ω 1K000 = 1 k Ω	J = $\pm 5.0 \%$ K = $\pm 10.0 \%$	E = lead (Pb)-free skin pack J ⁽¹⁾ = skin pack (J01)	(dash number) (up to 2 digits) from 1 to 99 as applicable

Note
(1) Tin / lead for type "Z", lead (Pb)-free for type "N"

Historical Part Numbering example: HLZ-165-06Z 10 Ω 10 % J01

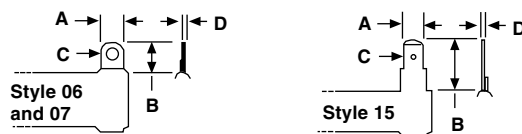
HLZ-165	06Z	10 Ω	10 %	J01
HISTORICAL MODEL	TERMINAL/FINISH	RESISTANCE VALUE	TOLERANCE	PACKAGING

**DIMENSIONS** in inches [millimeters]

MODEL	CORE DIMENSIONS			TERMINAL SETBACK ± 0.031 [± 0.79]	DISTANCE BETWEEN TERMINALS (REF.)	TERMINAL DESIGNATION		BRACKET TYPE ⁽¹⁾
	LENGTH ± 0.062 [± 1.59]	O.D.	I.D. ± 0.031 [± 0.79]			STANDARD	OPTIONAL	
HLZ033	2.000 [50.8]	0.563 [14.29]	0.313 [7.94]	0.094 [2.38]	1.437	06Z	15N	101, 203, 301
HLZ090	4.000 [101.6]	0.563 [14.29]	0.313 [7.94]	0.094 [2.38]	3.312	06Z	15N	101, 203, 301
HLZ099	3.500 [88.9]	0.750 [19.05]	0.500 [12.70]	0.125 [3.18]	2.75	06Z	15N	102, 206, 303
HLZ105	4.000 [101.6]	0.750 [19.05]	0.500 [12.70]	0.125 [3.18]	3.25	06Z	15N	102, 206, 303
HLZ110	4.500 [114.3]	0.750 [19.05]	0.500 [12.70]	0.125 [3.18]	3.75	06Z	15N	102, 206, 303
HLZ140	4.000 [101.6]	1.125 [28.58]	0.750 [19.05]	0.219 [5.56]	2.812	07Z	15N	103, 205, 303
HLZ165	6.500 [165.1]	0.750 [19.05]	0.750 [19.05]	0.125 [3.18]	5.75	06Z	15N	102, 206, 303
HLZ220	6.000 [152.4]	1.125 [28.58]	0.750 [19.05]	0.219 [5.56]	4.812	07Z	15N	103, 205, 303
HLZ240	6.500 [165.1]	1.125 [28.58]	0.750 [19.05]	0.219 [5.56]	5.312	07Z	15N	103, 205, 303
HLZ275	8.000 [203.2]	1.125 [28.58]	0.750 [19.05]	0.219 [5.56]	6.812	07Z	15N	103, 205, 303
HLZ300	8.500 [215.9]	1.125 [28.58]	0.750 [19.05]	0.219 [5.56]	7.312	07Z	15N	103, 205, 303
HLZ375	10.500 [266.7]	1.125 [28.58]	0.750 [19.05]	0.219 [5.56]	9.312	07Z	15N	103, 205, 303

Note

⁽¹⁾ Brackets are available for mounting HLZ series resistors - see "Mounting Hardware" section.

TERMINAL DIMENSIONS

DIMENSION	TERMINAL STYLE		
	06	07	15
A	0.250 [6.35]	0.375 [9.53]	0.250 [6.35]
B	0.563 [14.29]	0.625 [15.88]	0.594 [15.08]
C	0.166 [4.22]	0.173 [4.39]	0.065 [1.65]
D	0.020 [0.51]	0.020 [0.51]	0.031 [0.79]

TERMINAL FINISH

"E" finish - 100 % Sn coated steel. "Z" finish - 60/40 Sn/Pb coated steel. "N" finish - nickel coated steel. Finish for terminal style 14 and 15 are limited to nickel plated steel (N).

MATERIAL SPECIFICATIONS

Element: copper-nickel alloy of nickel-chrome alloy, depending on resistance range

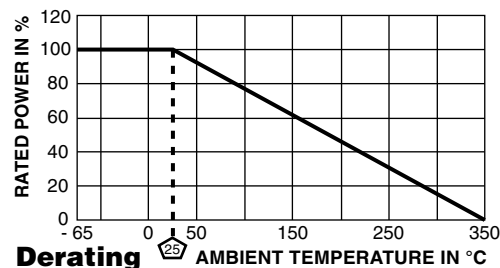
Core: ceramic, steatite

Coating: special high temperature silicone

Standard Terminals: model "E" terminals are tinned steel

Terminal Bands: steel

Part Marking: Vishay Dale, model, wattage, value, tolerance, date code

**MOUNTING HARDWARE**

Mounting Hardware is available for HLZ resistors, see HL Brackets and Sliders datasheet for more information: www.vishay.com/doc?30279



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.

Hyperlinks included in this datasheet may direct users to third-party websites. These links are provided as a convenience and for informational purposes only. Inclusion of these hyperlinks does not constitute an endorsement or an approval by Vishay of any of the products, services or opinions of the corporation, organization or individual associated with the third-party website. Vishay disclaims any and all liability and bears no responsibility for the accuracy, legality or content of the third-party website or for that of subsequent links.

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.