



# 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](http://www.vishay.com/doc?99912)



### 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 $\Omega$	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/°C	$\pm 30$ for 10 $\Omega$ and above; $\pm 50$ for 1 $\Omega$ to 9.9 $\Omega$ ; $\pm 90$ for 0.1 $\Omega$ to 0.99 $\Omega$
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	$\Omega$	1000 M $\Omega$ minimum dry, 100 M $\Omega$ minimum after moisture test
Operating Temperature Range	°C	-55 to +350

## GLOBAL PART NUMBER INFORMATION

Global Part Numbering example: HLZ16506Z10R00KJ



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

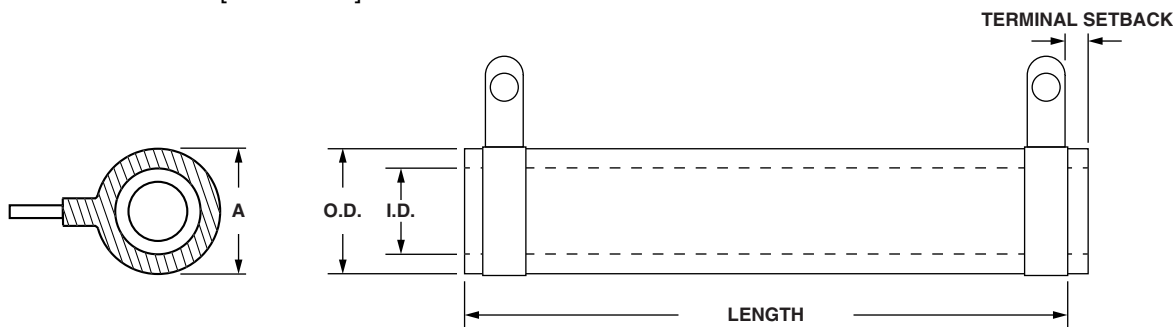
**Note**  
<sup>(1)</sup> Tin / lead for type "Z", lead (Pb)-free for type "N"

Historical Part Numbering example: HLZ-165-06Z 10  $\Omega$  10 % J01

<b>HLZ-165</b>	<b>06Z</b>	<b>10 <math>\Omega</math></b>	<b>10 %</b>	<b>J01</b>
HISTORICAL MODEL	TERMINAL/FINISH	RESISTANCE VALUE	TOLERANCE	PACKAGING



**DIMENSIONS** in inches [millimeters]

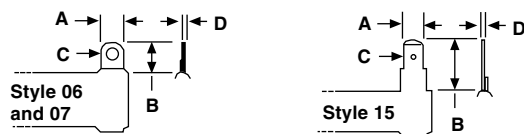


MODEL	CORE DIMENSIONS			TERMINAL SETBACK ± 0.031 [± 0.79]	DISTANCE BETWEEN TERMINALS (REF.)	TERMINAL DESIGNATION		BRACKET TYPE (1)
	LENGTH ± 0.062 [± 1.59]	O.D.	I.D. ± 0.031 [± 0.79]			STANDARD	OPTIONAL	
HLZ033	2.000 [50.8]	0.563 [14.29]	0.313 [7.94]	0.094 [2.38]	1.437	06Z	15N	101, 203, 301
HLZ090	4.000 [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

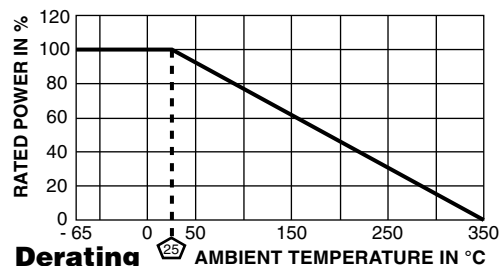
**Core:** ceramic, steatite

**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](http://www.vishay.com/doc?30279)



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