



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



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/°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 | °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 |
|--|-------------------------------------|---|--|---|--|---|
| 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 |

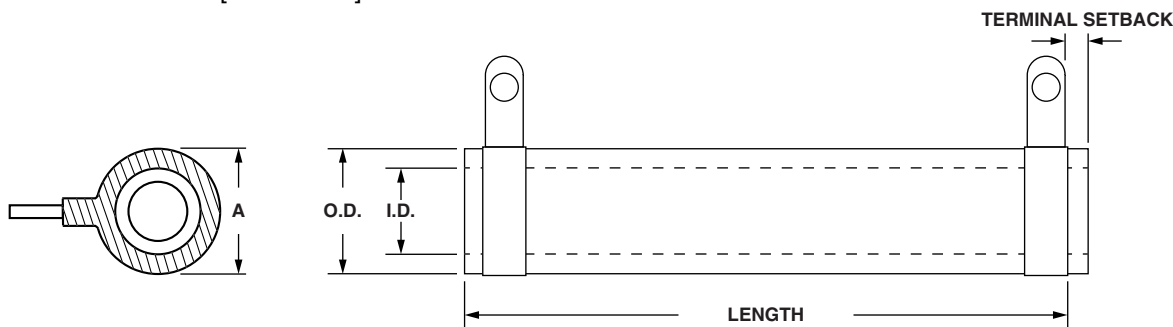
Note
⁽¹⁾ Tin / lead for type "Z", lead (Pb)-free for type "N"

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]

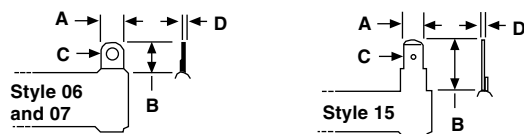


| MODEL | CORE DIMENSIONS | | | TERMINAL SETBACK ± 0.031 [± 0.79] | DISTANCE BETWEEN TERMINALS (REF.) | TERMINAL DESIGNATION | | BRACKET TYPE (1) |
|--------|-------------------------------|---------------|-----------------------------|---|-----------------------------------|----------------------|----------|------------------|
| | 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

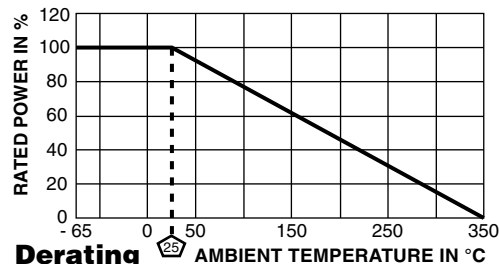
Core: ceramic, steatite

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



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