

Wirewound Resistors, Industrial Power, Tubular, Ribwound (RB), Fixed (RBEF, RBSF)



FEATURES

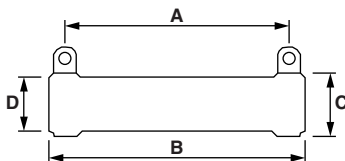
- High temperature silicone or vitreous enamel coatings
- Excellent for pulsing applications
- All welded construction
- Designed to meet heavy-duty requirements where space is at a premium
- Hardware mounting options and enclosures available
- Wirewound
- Material categorization: for definitions of compliance please see www.vishay.com/doc?99912


RoHS
COMPLIANT

| STANDARD ELECTRICAL SPECIFICATIONS | | | | | | |
|------------------------------------|--------------------|----------------|---------------------------|-------------|----------------|--------|
| GLOBAL MODEL | HISTORICAL MODEL | POWER RATING W | RESISTANCE RANGE Ω | TOLERANCE % | TERMINAL STYLE | |
| | | | | | STANDARD | OPTION |
| RBEF0040 ⁽¹⁾ | 9-32- Ω R | 40 | 0.010 to 10.6 | 10 | D | H |
| RBEF0050 ⁽¹⁾ | 12-32- Ω R | 50 | 0.020 to 8.2 | 10 | F | H |
| RBEF0075 ⁽¹⁾ | 12-48- Ω R | 75 | 0.010 to 19.3 | 10 | F | H |
| RBEF0090 ⁽¹⁾ | 9-64- Ω R | 90 | 0.015 to 28.3 | 10 | D | H |
| RBEF0100 ⁽¹⁾ | 12-56- Ω R | 100 | 0.012 to 24.5 | 10 | F | H |
| RBEF0110 ⁽¹⁾ | 12-64- Ω R | 110 | 0.015 to 30.6 | 10 | F | H |
| RBEF0120 ⁽¹⁾ | 12-72- Ω R | 120 | 0.018 to 36.8 | 10 | F | H |
| RBEF0135 ⁽¹⁾ | 12-80- Ω R | 135 | 0.021 to 42.9 | 10 | F | H |
| RBEF0150 ⁽¹⁾ | 18-64- Ω R | 150 | 0.019 to 44.8 | 10 | F | H |
| RBEF0160 ⁽¹⁾ | 12-96- Ω R | 160 | 0.027 to 55.0 | 10 | F | H |
| RBEF0175 ⁽¹⁾ | 18-72- Ω R | 175 | 0.023 to 53.7 | 10 | F | H |
| RBEF0180 ⁽¹⁾ | 12-104- Ω R | 180 | 0.030 to 61.3 | 10 | F | H |
| RBEF0220 ⁽¹⁾ | 18-96- Ω R | 220 | 0.035 to 80.6 | 10 | F | H |
| RBEF0225 ⁽¹⁾ | 18-98- Ω R | 225 | 0.036 to 82.8 | 10 | F | H |
| RBEF0240 ⁽¹⁾ | 18-104- Ω R | 240 | 0.038 to 89.5 | 10 | F | H |
| RBEF0300 ⁽¹⁾ | 18-136- Ω R | 300 | 0.054 to 125 | 10 | F | H |
| RBEF0375 ⁽¹⁾ | 18-168- Ω R | 375 | 0.069 to 161 | 10 | F | H |
| RBEF0400 ⁽¹⁾ | 26-136- Ω R | 400 | 0.061 to 159 | 10 | G | - |
| RBEF0420 ⁽¹⁾ | 18-188- Ω R | 420 | 0.079 to 184 | 10 | F | H |
| RBEF0500 ⁽¹⁾ | 26-168- Ω R | 500 | 0.081 to 210 | 10 | G | - |
| RBEF0550 ⁽¹⁾ | 26-188- Ω R | 550 | 0.093 to 242 | 10 | G | - |
| RBSF0750 | 40-192- Ω R | 750 | 0.128 to 166 | 10 | G | - |
| RBSF0850 | - | 850 | 0.160 to 400 | 10 | F | G, H |
| RBSF1000 | 40-240- Ω R | 1000 | 0.168 to 217 | 10 | G | - |
| RBSF1100 | - | 1100 | 0.180 to 525 | 10 | G | - |
| RBSF1500 | 40-320- Ω R | 1500 | 0.234 to 303 | 10 | G | - |
| RBSF1700 | - | 1700 | 0.270 to 350 | 10 | G | - |
| RBSF2000 | 52-320- Ω R | 2000 | 0.281 to 391 | 10 | G | - |

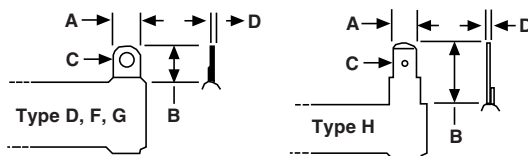
Note

⁽¹⁾ Vitreous enamel coating is standard (RBEF type), silicone coating is optional (RBSF type).

DIMENSIONS in inches (millimeters)


- For Terminal Data and Mounting Hardware, see www.vishay.com/doc?31811
- For Enclosures and Frames, see www.vishay.com/doc?31810

| GLOBAL MODEL | CORE DIMENSIONS (REF.) | | | A DISTANCE BETWEEN TERMINAL (REF.) | WEIGHT (TYP.) g |
|--------------|------------------------|---------------------|---------------------|---|-----------------------|
| | B LENGTH | C OUTER DIAMETER | D INNER DIAMETER | | |
| RBEF0040 | 2 (50.8) | 0.5625 (14.2875) | 0.3125 (7.9375) | 1.25 (31.75) | 20 |
| RBEF0050 | 2 (50.8) | 0.75 (19.05) | 0.5 (12.7) | 1.15 (29.21) | 30 |
| RBEF0075 | 3 (76.2) | 0.75 (19.05) | 0.5 (12.7) | 2.13 (53.975) | 50 |
| RBEF0090 | 4 (101.6) | 0.5625 (14.2875) | 0.3125 (7.9375) | 3.50 (88.9) | 65 |
| RBEF0100 | 3.5 (88.9) | 0.75 (19.05) | 0.5 (12.7) | 2.63 (66.675) | 58 |
| RBEF0110 | 4 (101.6) | 0.75 (19.05) | 0.5 (12.7) | 3.13 (79.375) | 62 |
| RBEF0120 | 4.5 (114.3) | 0.75 (19.05) | 0.5 (12.7) | 3.63 (92.075) | 68 |
| RBEF0135 | 5 (127) | 0.75 (19.05) | 0.5 (12.7) | 4.13 (104.775) | 75 |
| RBEF0150 | 4 (101.6) | 1.125 (28.575) | 0.75 (19.05) | 3.13 (79.375) | 127 |
| RBEF0160 | 6 (152.4) | 0.75 (19.05) | 0.5 (12.7) | 5.13 (130.175) | 95 |
| RBEF0175 | 4.5 (114.3) | 1.125 (28.575) | 0.75 (19.05) | 3.63 (92.075) | 140 |
| RBEF0180 | 6.5 (165.1) | 0.75 (19.05) | 0.5 (12.7) | 5.63 (142.875) | 100 |
| RBEF0220 | 6 (152.4) | 1.125 (28.575) | 0.75 (19.05) | 5.13 (130.175) | 165 |
| RBEF0225 | 6.125 (155.575) | 1.125 (28.575) | 0.75 (19.05) | 5.25 (133.35) | 175 |
| RBEF0240 | 6.5 (165.1) | 1.125 (28.575) | 0.75 (19.05) | 5.63 (142.875) | 200 |
| RBEF0300 | 8.5 (215.9) | 1.125 (28.575) | 0.75 (19.05) | 7.63 (193.675) | 265 |
| RBEF0375 | 10.5 (266.7) | 1.125 (28.575) | 0.75 (19.05) | 9.63 (244.475) | 300 |
| RBEF0400 | 8.5 (215.9) | 1.625 (41.275) | 1.125 (28.575) | 7.63 (193.675) | 410 |
| RBEF0420 | 11.75 (298.45) | 1.125 (28.575) | 0.75 (19.05) | 10.88 (276.225) | 336 |
| RBEF0500 | 10.5 (266.7) | 1.625 (41.275) | 1.125 (28.575) | 9.00 (228.6) | 525 |
| RBEF0550 | 11.75 (298.45) | 1.625 (41.275) | 1.125 (28.575) | 10.25 (260.35) | 535 |
| RBSF0750 | 12 (304.8) | 2.5 (63.5) | 1.75 (44.45) | 10.50 (266.7) | 1200 |
| RBSF0850 | 25 (635) | 1.125 (28.575) | 0.75 (19.05) | 23.75 (603.25) | 715 |
| RBSF1000 | 15 (381) | 2.5 (63.5) | 1.75 (44.45) | 13.50 (342.9) | 1500 |
| RBSF1100 | 25 (635) | 1.625 (41.275) | 1.125 (28.58) | 23 (584.2) | 1140 |
| RBSF1500 | 20 (508) | 2.5 (63.5) | 1.75 (44.45) | 18.50 (169.9) | 1900 |
| RBSF1700 | 25 (635) | 2.5 (63.5) | 1.75 (44.45) | 23 (584.2) | 2450 |
| RBSF2000 | 20 (508) | 3.25 (82.55) | 1.75 (44.45) | 18.50 (169.9) | 3900 |

TERMINAL STYLE in inches (millimeters)


| DIMENSIONS | D (1/4" LUG) | F (3/8" LUG) | G (1/2" LUG) | H (1/4" SQC) |
|---------------|--------------|----------------|------------------|----------------|
| Width (A) | 0.25 (6.35) | 0.375 (9.525) | 0.5 (12.7) | 0.25 (6.35) |
| Height (B) | 0.5 (12.7) | 0.625 (15.875) | 0.9375 (23.8125) | 0.625 (15.875) |
| Diameter (C) | 0.17 (4.318) | 0.2 (5.08) | 0.26 (6.604) | 0.065 (1.651) |
| Thickness (D) | 0.02 (0.508) | 0.035 (0.889) | 0.046 (1.1684) | 0.032 (0.8128) |

**METRIC OPTIONS AVAILABLE****Metric Hardware on Terminal Lugs**

Use terminal designation "1" example: RBEF03001R000K1B00

Metric Mounting Hardware

Vertical mount: use special designation "VM" example: RBEF03001R000K1BVM

1 high bracket: use special designation "1A" example: RBEF03001R000K1B1M

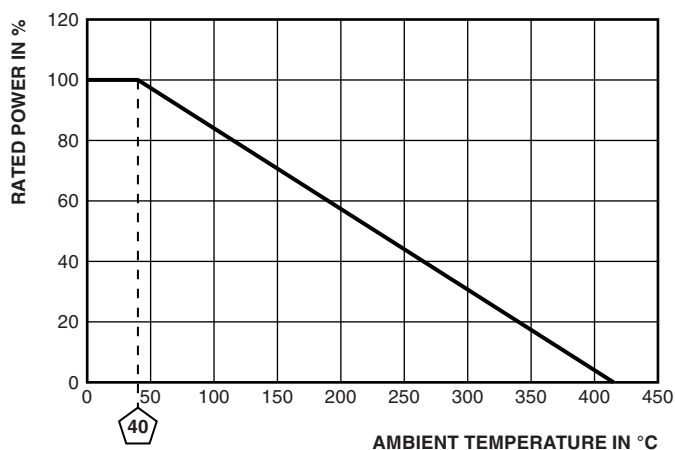
2 high bracket: use special designation "2A" example: RBEF03001R000K1B2M

3 high bracket: use special designation "3A" example: RBEF03001R000K1B3M

4 high bracket: use special designation "4A" example: RBEF03001R000K1B4M











TECHNICAL SPECIFICATIONS

| PARAMETER | UNIT | RESISTOR CHARACTERISTICS |
|--|---------------------|---|
| Power rating | W | 40 to 200 |
| Resistance range | Ω | 0.01 to 391 |
| Resistance tolerance | % | 10 |
| TCR | ppm/°C | $\pm 400, \pm 180, \pm 130, \pm 20$ (varies by wattage and resistance) |
| Operating temperature | °C | -55 to +415 |
| Temperature rise | °C | 375 above an ambient of 40 °C |
| Maximum altitude | f.a.s.l. (m.a.s.l.) | derate above 4921 f.a.s.l. (1500 m.a.s.l.) |
| Short-term overload (surge) | | 10 x rated power for 5 s |
| Surge windings | | available |
| Maximum working voltage | | $(P \times R)^{1/2}$ |
| Insulation resistance | Ω | 1M |
| Dielectric voltage | V _{RMS} | up to 1500 (upon request) |
| Creepage | inch (mm) | minimum 0.125 (3.175), typical (varies by wattage) |
| Terminal sleeves | | n/a |
| Inductance | μH | 0.1 to 340 (varies by wattage and resistance) |
| Non-inductive winding | | consult factory: www.vishay.com/milwaukee/contact |
| Terminal strength | lb | 10 |
| Electrical or mechanical customization | | available: www.vishay.com/doc?31856 |

DERATING CURVE**MATERIAL SPECIFICATIONS**

| | |
|--------------------|--|
| Element | copper-nickel, nickel-chrome, iron-chrome-aluminum |
| Core | cordierite, steatite |
| Coating | special high temperature silicone or vitreous enamel |
| Standard terminals | nickel-iron |
| Part marking | value, date code, MRC |



| OPTIONS | EXAMPLE PHOTO | EXAMPLE: 300 W | OPTIONS | EXAMPLE PHOTO | EXAMPLE: 300 W |
|-------------------------------|---|---|---|--|--|
| Standard "00" option |  | Part number ends with " 00 " example: RBEF0300xxxxxKGB 00 | Thru Bolt "VT" option |  | Part number ends with " VT " example: RBEF0300xxxxxKGB VT |
| 1 High Bracket "1A" option |  | Part number ends with " 1A " example: RBEF0300xxxxxKGB 1A | Clips "CP" option |  | Part number ends with " CP " example: RBEF0300xxxxxKGB CP |
| 2 High Bracket "2A" option |  | Part number ends with " 2A " example: RBEF0300xxxxxKGB 2A | Adjustable |  | Part model starts with " RBEA " example: RBEA 0300xxxxxKFB00 |
| 3 High Bracket "3A" option |  | Part number ends with " 3A " example: RBEF0300xxxxxKGB 3A | Enclosures |  | Consult factory for options: vishaymilwaukeeeresistor@vishay.com |
| 4 High Bracket "4A" option |  | Part number ends with " 4A " example: RBEF0300xxxxxKGB 4A | Electrical customizations (TCR, inductance, etc.) |  | Consult factory for options: vishaymilwaukeeeresistor@vishay.com |

GLOBAL PART NUMBER INFORMATION

Global Part Numbering example: RBSF150015R00JGB1A (RBSF1500-1A 15 5 % 1/2L B)

R B S F 1 5 0 0 1 5 R 0 0 J G B 1 A

GLOBAL MODEL

RBSF1500
(see "Standard
Electrical
Specifications"
table above for
additional P/N's)

RESISTANCE VALUE

R = decimal
K = thousand
R1500 = 0.15 Ω
1K500 = 1.5 k Ω

TOLERANCE

J = ± 5.0 %
K = ± 10 %

TERMINAL

D = 1/4" lug
F = 3/8" lug
G = 1/2" lug
H = 1/4" single
quick-connect

PACKAGING CODE

B = bulk

SPECIAL

00 = standard
SW = surge winding
CP = push in clips (bulk)
CA = push in clips (assembled)
VT = vertical mount
1A = 1 high bracket zinc plated steel
2A = 2 high bracket zinc plated steel
3A = 3 high bracket zinc plated steel
4A = 4 high bracket zinc plated steel

Note

2A, 3A, and 4A assemblies:
include identical resistors only wiring to
be supplied by customer reference CS
series for further customization

Note

3A and 4A limitations:
brackets fit 40 W to 550 W RB resistors



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