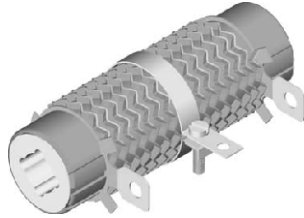


Cemented Resistors with Corrugated Ribbon



FEATURES

- All welded construction
- Power rating up to 500 W
- Corrugated ribbon construction aids rapid cooling
- Available in adjustable design = "E"
- Compliant to RoHS directive 2002/95/EC



RoHS
COMPLIANT
GREEN
(5-2009)**

STANDARD ELECTRICAL SPECIFICATIONS

MODEL	POWER RATING $P_{40\text{ °C}}$	RESISTANCE RANGE (1)			TOLERANCE
		TCR + 650 ... + 750 ppm/K WM 10	TCR - 10 ... - 80 ppm/K WM 50	TCR + 100 ... + 180 ppm/K WM 110	
ZBS 20/100 ZBS 20/100 E	50 W	0.13 Ω to 0.51 Ω	0.56 Ω to 2.2 Ω	1.3 Ω to 6.2 Ω	$\pm 10\%$, $\pm 5\%$
ZBS 20/165 ZBS 20/165 E	100 W	0.27 Ω to 1 Ω	1.1 Ω to 4.7 Ω	2.4 Ω to 12 Ω	$\pm 10\%$, $\pm 5\%$
ZBS 20/265 ZBS 20/265 E	150 W	0.47 Ω to 1.8 Ω	2 Ω to 7.5 Ω	4.3 Ω to 22 Ω	$\pm 10\%$, $\pm 5\%$
ZBS 30/100 ZBS 30/100 E	75 W	0.1 Ω to 0.43 Ω	0.47 Ω to 3.3 Ω	1 Ω to 8.2 Ω	$\pm 10\%$, $\pm 5\%$
ZBS 30/133 ZBS 30/133 E	110 W	0.15 Ω to 0.62 Ω	0.68 Ω to 5.1 Ω	1.5 Ω to 12 Ω	$\pm 10\%$, $\pm 5\%$
ZBS 30/165 ZBS 30/165 E	150 W	0.2 Ω to 0.91 Ω	1.0 Ω to 6.8 Ω	2 Ω to 16 Ω	$\pm 10\%$, $\pm 5\%$
ZBS 30/215 ZBS 30/215 E	200 W	0.27 Ω to 1.1 Ω	1.2 Ω to 9.1 Ω	2.7 Ω to 24 Ω	$\pm 10\%$, $\pm 5\%$
ZBS 30/265 ZBS 30/265 E	250 W	0.3 Ω to 1.3 Ω	1.5 Ω to 11 Ω	3.9 Ω to 27 Ω	$\pm 10\%$, $\pm 5\%$
ZBS 30/330 ZBS 30/330 E	300 W	0.39 Ω to 1.8 Ω	2 Ω to 15 Ω	5.1 Ω to 36 Ω	$\pm 10\%$, $\pm 5\%$
ZBS 45/370 ZBS 45/370 E	375 W	0.75 Ω to 3 Ω	3.3 Ω to 24 Ω	8.2 Ω to 56 Ω	$\pm 10\%$, $\pm 5\%$
ZBS 60/370 ZBS 60/370 E	500 W	0.91 Ω to 3.9 Ω	4.3 Ω to 33 Ω	10 Ω to 75 Ω	$\pm 10\%$, $\pm 5\%$

Notes

(1) Resistance value to be selected for $\pm 10\%$ tolerance from E12 and for $\pm 5\%$ from E24

- For available "Mounting Accessories for Resistors", please see: www.vishay.com/ppg?21015

** Please see document "Vishay Material Category Policy": www.vishay.com/doc?99902

PART NUMBER AND PRODUCT DESCRIPTION

 Part Number: **ZBS202S01100K LX000**

Z	B	S	2	0	2	S	0	1	1	0	0	K	L	X	0	0	0
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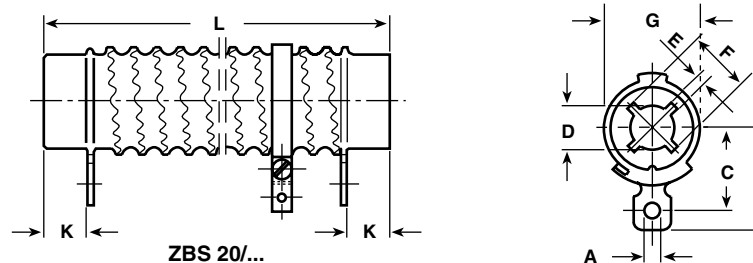
MODEL	VARIANT/ TERMINAL	TCR/MATERIAL	VALUE	TOLERANCE CODE	PACKAGING CODE	SPECIAL
ZBS202S = ZBS 20/100 ZBS204L = ZBS 20/165 ZBS207D = ZBS 20/265 ZBS302S = ZBS 30/100 ZBS303P = ZBS 30/133 ZBS304L = ZBS 30/165 ZBS305Z = ZBS 30/215 ZBS307D = ZBS 30/265 ZBS308D = ZBS 30/303 ZBS3096 = ZBS 30/330 ZBS45AA = ZBS 45/370 ZBS60AA = ZBS 60/370	0 = Neutral 1 = E Z = Value overflow (BV)	1 = - 10 ... - 80 ppm/K WM 50 Class 1 3 = 100 ... 180 ppm/K WM 110 Class 3 4 = 650 ... 750 ppm/K WM 10 Class 1 0 = SWI	2 digit value 1 digit multiplier MULTIPLIER 8 = *10 ⁻² 9 = *10 ⁻¹ 0 = *10 ⁰	J = ± 5.0 % K = ± 10.0 %	LX = Loose pack, without quantity ZX = Special pack (with BV #), without quantity	The 5 digit BV number will be encoded using a 36 character code. This code contains numbers 0...9 and letters A...Z (36 characters total) and allows to encode at least 46 655 five digit BV numbers. 000 = Standard

 Product Description: **ZBS 20/100 50 10R 10 % LX**

ZBS 20/100	50	10R	10 %	LX
MODEL (1)	TCR/MATERIAL (1)	VALUE (1)	TOLERANCE CODE (1)	PACKAGING DESCRIPTION (2)

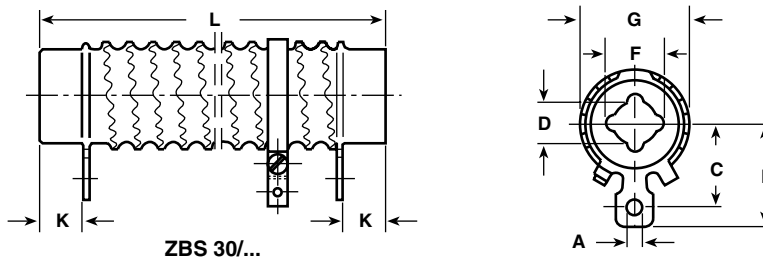
Notes

- (1) See "Part Number" above
 (2) See "Packaging Code" above

DIMENSIONS


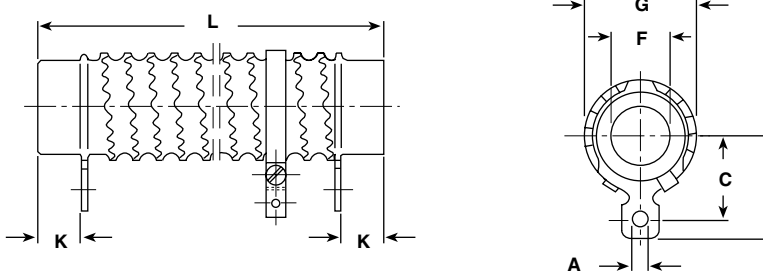
MODEL	DIMENSIONS in millimeters [inches]									
	L	K	A	B	C	D	E	F	G	MASS (g)
ZBS 20/100 ZBS 20/100 E	100 ± 2.5 [3.937 ± 0.098]	15 [0.591]	4.2 [0.165]	26.5 [1.043]	22 [0.866]	10 [0.394]	1.5 [0.059]	14 [0.551]	24 [0.945]	100
ZBS 20/165 ZBS 20/165 E	165 ± 4 [6.496 ± 0.157]	15 [0.591]	4.2 [0.165]	26.5 [1.043]	22 [0.866]	10 [0.394]	1.5 [0.059]	14 [0.551]	24 [0.945]	150
ZBS 20/265 ZBS 20/265 E	265 ± 6.6 [10.433 ± 0.260]	15 [0.591]	4.2 [0.165]	26.5 [1.043]	22 [0.866]	10 [0.394]	1.5 [0.059]	14 [0.551]	24 [0.945]	250

DIMENSIONS (continued)



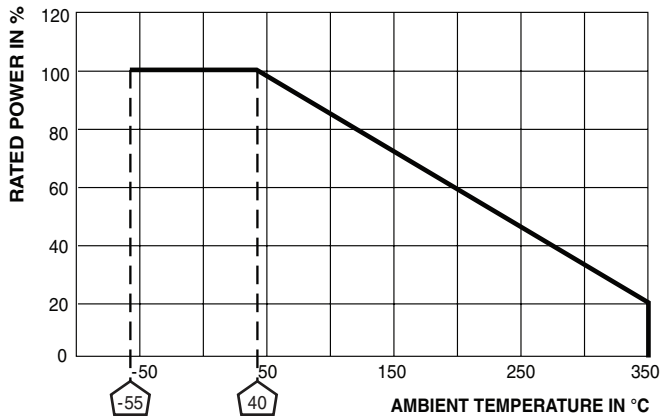
ZBS 30/...

MODEL	DIMENSIONS in millimeters [inches]								
	L	K	A	B	C	D	F	G	MASS (g)
ZBS 30/100 ZBS 30/100 E	100 ± 2.5 [3.937 ± 0.098]	15 [0.591]	5.2 [0.205]	34 [1.339]	28 [1.102]	14 [0.551]	18.5 [0.728]	37 ± 1 [1.457 ± 0.039]	200
ZBS 30/133 ZBS 30/133 E	133 ± 3.3 [5.236 ± 0.130]	15 [0.591]	5.2 [0.205]	34 [1.339]	28 [1.102]	14 [0.551]	18.5 [0.728]	37 ± 1 [1.457 ± 0.039]	250
ZBS 30/165 ZBS 30/165 E	165 ± 4 [6.496 ± 0.157]	15 [0.591]	5.2 [0.205]	34 [1.339]	28 [1.102]	14 [0.551]	18.5 [0.728]	37 ± 1 [1.457 ± 0.039]	300
ZBS 30/215 ZBS 30/215 E	215 ± 5.4 [8.465 ± 0.213]	15 [0.591]	5.2 [0.205]	34 [1.339]	28 [1.102]	14 [0.551]	18.5 [0.728]	37 ± 1 [1.457 ± 0.039]	400
ZBS 30/265 ZBS 30/265 E	265 ± 6.6 [10.433 ± 0.260]	15 [0.591]	5.2 [0.205]	34 [1.339]	28 [1.102]	14 [0.551]	18.5 [0.728]	37 ± 1 [1.457 ± 0.039]	500
ZBS 30/330 ZBS 30/330 E	330 ± 8 [12.992 ± 0.315]	15 [0.591]	5.2 [0.205]	34 [1.339]	28 [1.102]	14 [0.551]	18.5 [0.728]	37 ± 1 [1.457 ± 0.039]	600

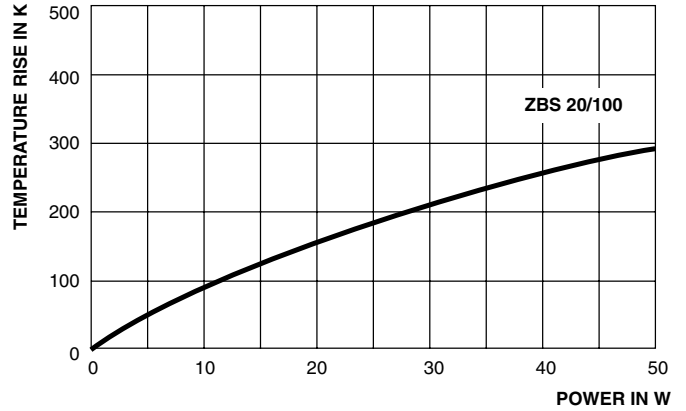


ZBS 45/370, ZBS 60/370

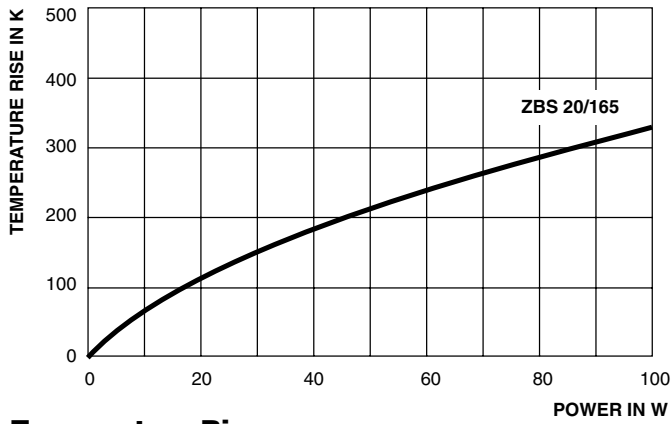
MODEL	DIMENSIONS in millimeters [inches]							
	L	K	A	B	C	F	G	MASS (g)
ZBS 45/370 ZBS 45/370 E	370 ± 9 [14.567 ± 0.354]	15 [0.591]	5.2 [0.205]	42.5 [1.673]	37 [1.457]	30 [1.181]	52 ± 1 [2.047 ± 0.039]	1000
ZBS 60/370 ZBS 60/370 E	370 ± 9 [14.567 ± 0.354]	15 [0.591]	5.2 [0.205]	51.5 [2.028]	45.5 [1.791]	45 [1.772]	67 ± 1 [2.638 ± 0.039]	1200



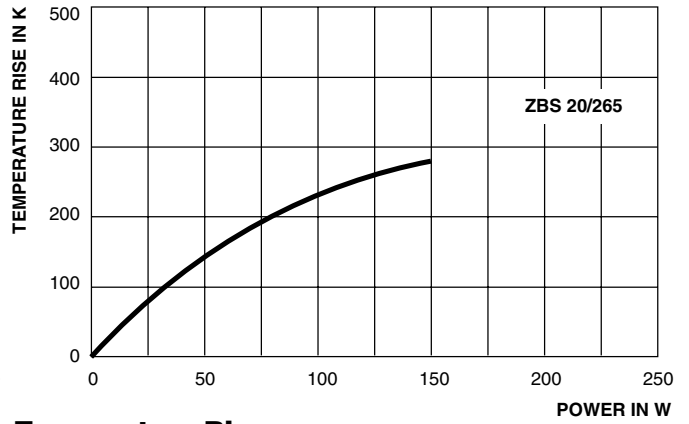
Derating



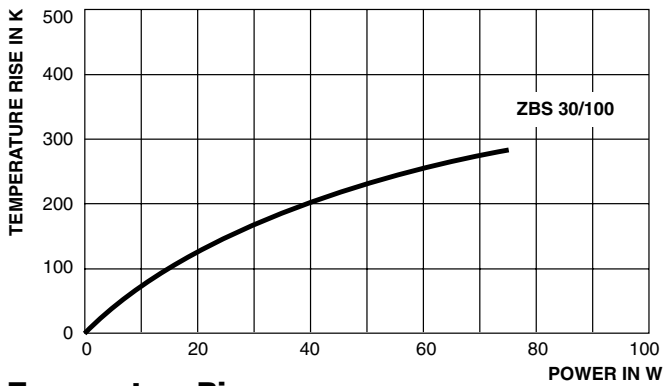
Temperature Rise



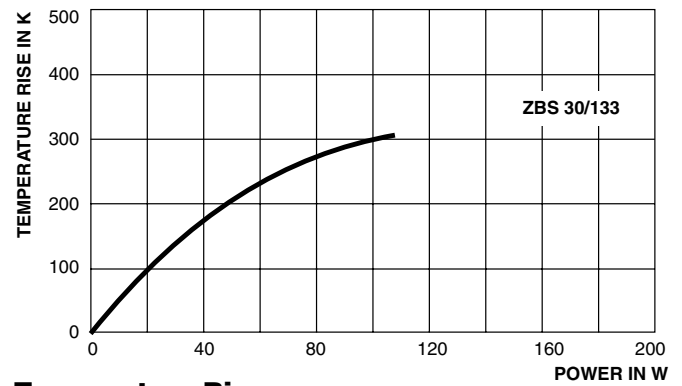
Temperature Rise



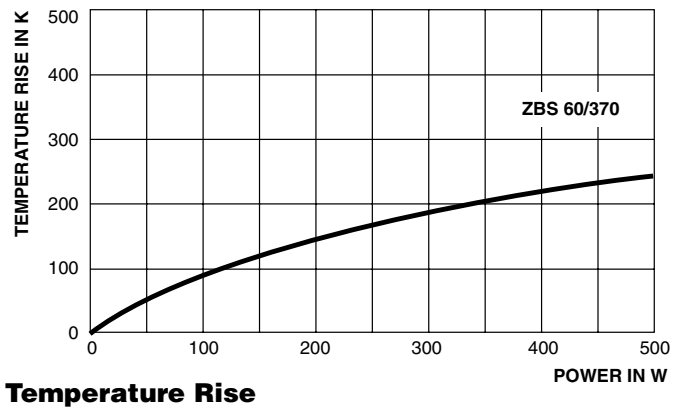
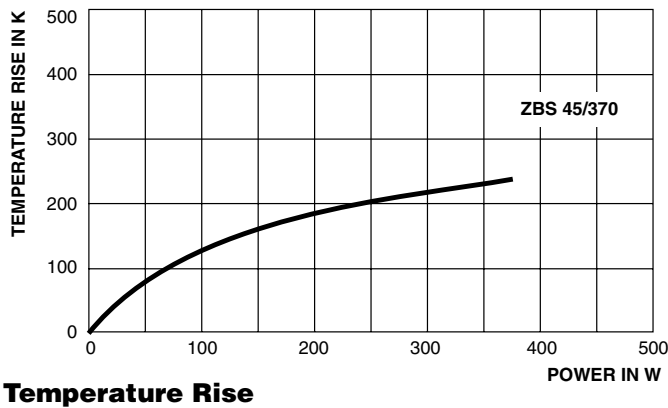
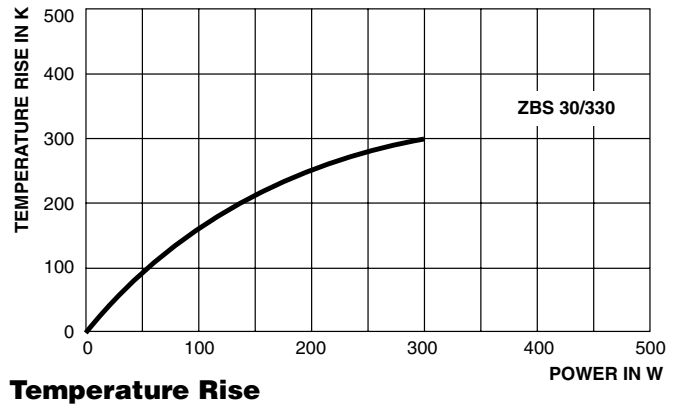
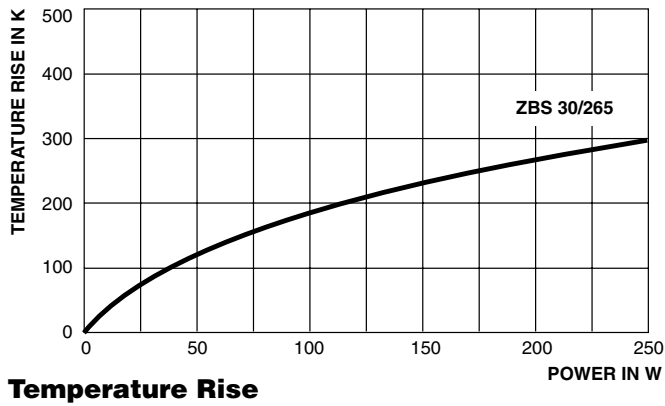
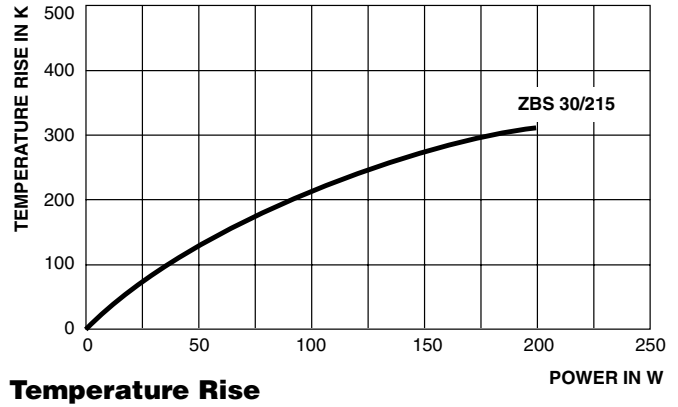
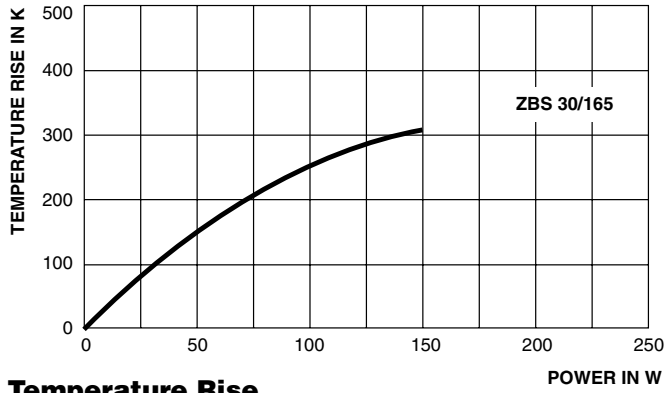
Temperature Rise



Temperature Rise



Temperature Rise





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