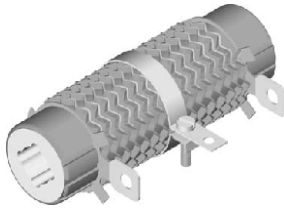


## Cemented Resistors with Corrugated Ribbon



### FEATURES

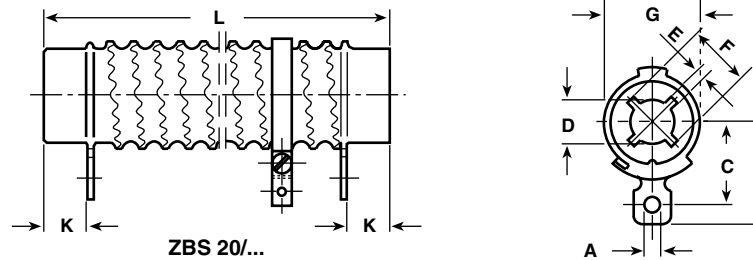
- All welded construction
- Power rating up to 500 Watt
- Corrugated ribbon construction aids rapid cooling
- Available in adjustable design = "E"

STANDARD ELECTRICAL SPECIFICATIONS					
MODEL	POWER RATING $P_{40\text{ }^\circ\text{C}}$ W	RESISTANCE RANGE $\pm 10\% \pm 5\%$			WEIGHT (grams)
		TCR + 650 ... + 750 ppm/K WM10	TCR - 10 ... - 80 ppm/K WM50	TCR + 100 ... + 180 ppm/K WM110	
ZBS 20/100 ZBS 20/100 E	50	R13 - R51	R56 - 2R2	1R3 - 6R2	100
ZBS 20/165 ZBS 20/165 E	100	R27 - 1R0	1R1 - 4R7	2R4 - 12R	150
ZBS 20/265 ZBS 20/265 E	150	R47 - 1R8	2R0 - 7R5	4R3 - 22R	250
ZBS 30/100 ZBS 30/100 E	75	R10 - R43	R47 - 3R3	1R0 - 8R2	200
ZBS 30/133 ZBS 30/133 E	110	R15 - R62	R68 - 5R1	1R5 - 12R	250
ZBS 30/165 ZBS 30/165 E	150	R20 - R91	1R0 - 6R8	2R0 - 16R	300
ZBS 30/215 ZBS 30/215 E	200	R27 - 1R1	1R2 - 9R1	2R7 - 24R	400
ZBS 30/265 ZBS 30/265 E	250	R30 - 1R3	1R5 - 11R	3R9 - 27R	500
ZBS 30/330 ZBS 30/330 E	300	R39 - 1R8	2R0 - 15R	5R1 - 36R	600
ZBS 45/370 ZBS 45/370 E	375	R75 - 3R0	3R3 - 24R	8R2 - 56R	1000
ZBS 60/370 ZBS 60/370 E	500	R91 - 3R9	4R3 - 33R	10R - 75R	1200

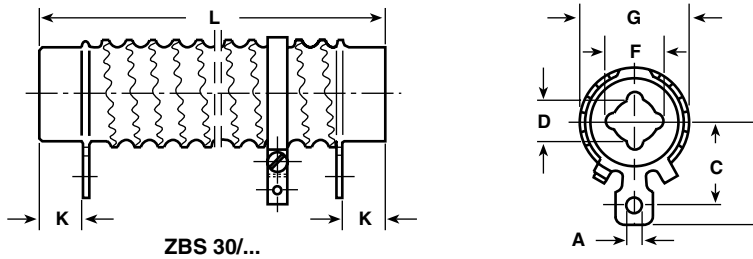
GLOBAL PART NUMBER INFORMATION																	
New Global Part Numbering: ZBS202S01100KLX000 (preferred part number format)																	
Z	B	S	2	0	2	S	0	1	1	0	0	K	L	X	0	0	0
MODEL	SIZE	SPECIAL CHARACTER	TCR/MATERIAL		VALUE	TOLERANCE	PACKING	SPECIAL									
ZBS	202S =20/100 204L =20/165 207D =20/265 302S =30/100 303P =30/133 304L =30/165 305Z =30/215 307D =30/265 308D =30/303 3096 =30/330 45AA =45/370 60AA =60/370	0 = neutral 1 = E Z = value overflow (BV)	1 = - 10 ... - 80 ppm/K WM50 Class 1 3 = 100 ... 180 ppm/K WM110 Class 3 4 = 650 ... 750 ppm/K WM10 Class 1 0 = SWI		2 digit value 1 digit multiplier Multiplier: 8 = $\times 10^{-2}$ 9 = $\times 10^{-1}$ 0 = $\times 10^0$	J = $\pm 5.0\%$ K = $\pm 10.0\%$	(see Packing table)	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									
Historical Part Number example: ZBS 20/100 50 10R 10% (will continue to be accepted)																	
ZBS 20/100		50		10R		10%											
HISTORICAL MODEL		TCR/MATERIAL		VALUE		TOLERANCE											

PACKING TABLE		
SAP	DESCRIPTION	TYPE
LX	Loose pack, without quantity	all
ZX	Special pack (with BV #), without quantity <b>Note:</b> LX = B29 on Dale legacy ZX = S51 on Dale legacy	all

**DIMENSIONS**

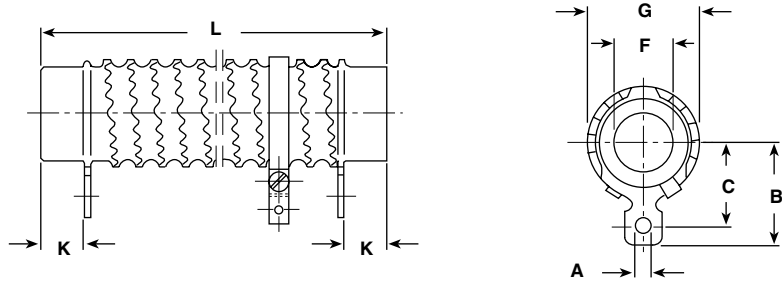


MODEL	DIMENSIONS in millimeters [inches]								
	L	K	A	B	C	D	E	F	G
ZBS 20/100	100 ± 2.5	15	4.2	26.5	22	10	1.5	14	24
ZBS 20/100 E	[3.937 ± 0.098]	[0.591]	[0.165]	[1.043]	[0.866]	[0.394]	[0.059]	[0.551]	[0.945]
ZBS 20/165	165 ± 4	15	4.2	26.5	22	10	1.5	14	24
ZBS 20/165 E	[6.496 ± 0.157]	[0.591]	[0.165]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



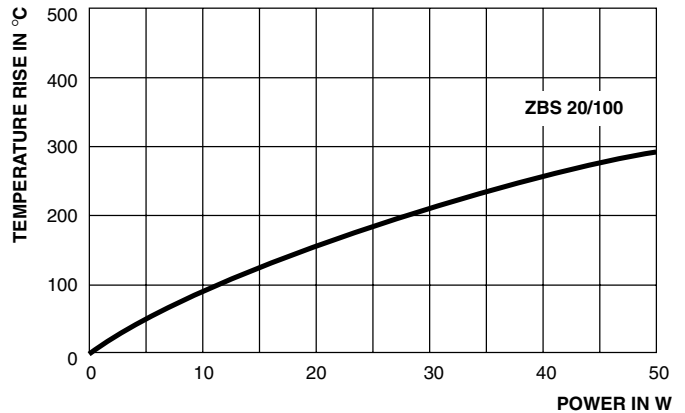
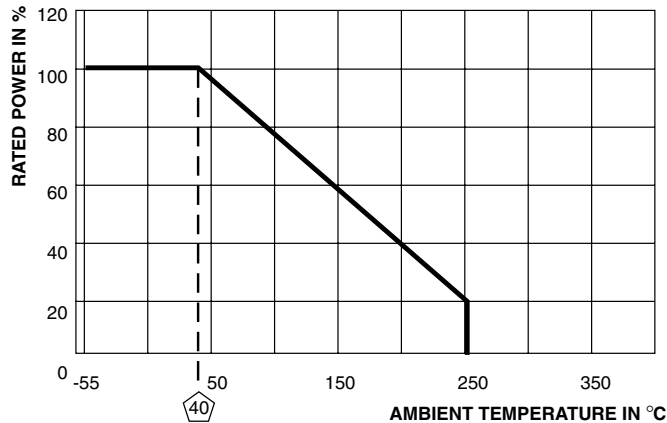
MODEL	DIMENSIONS in millimeters [inches]							
	L	K	A	B	C	D	F	G
ZBS 30/100	100 ± 2.5	15	5.2	34	28	14	18.5	37 ± 1
ZBS 30/100 E	[3.937 ± 0.098]	[0.591]	[0.205]	[1.339]	[1.102]	[0.551]	[0.728]	[1.457 ± 0.039]
ZBS 30/133	133 ± 3.3	15	5.2	34	28	14	18.5	37 ± 1
ZBS 30/133 E	[5.236 ± 0.130]	[0.591]	[0.205]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

**DIMENSIONS (CONTINUED)**



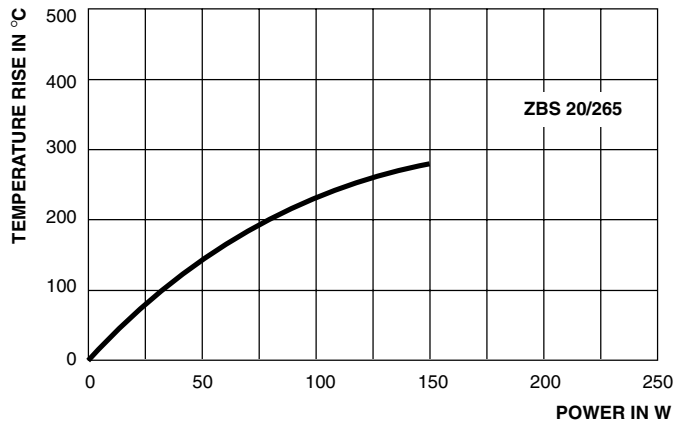
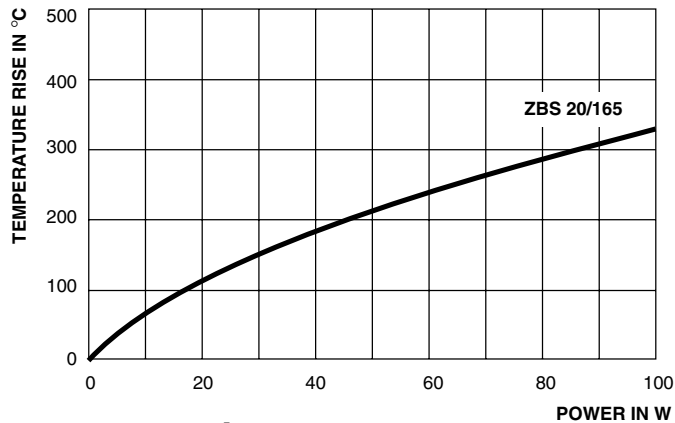
ZBS 45/370, ZBS 60/370

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



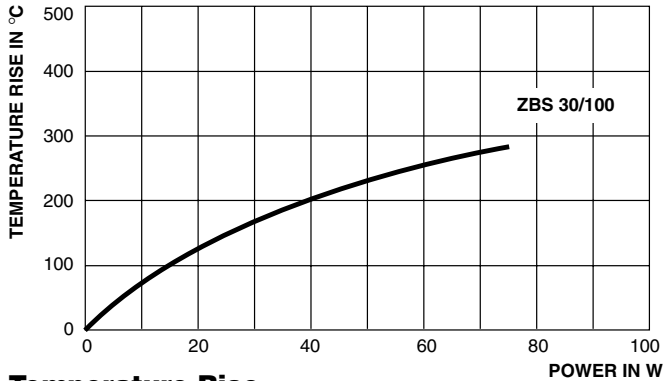
**Derating**

**Temperature Rise**

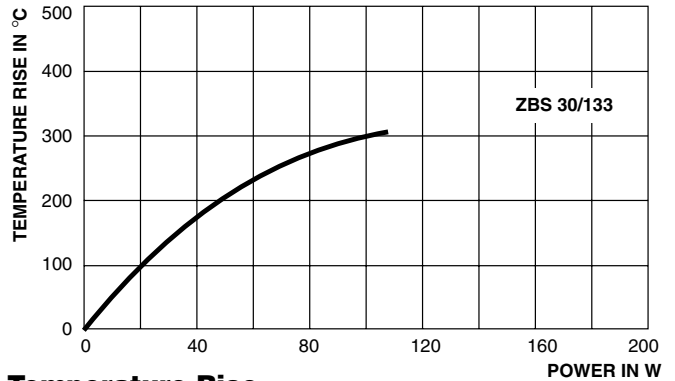


**Temperature Rise**

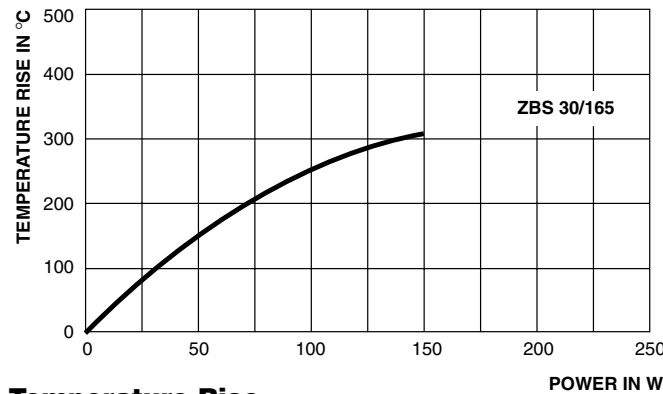
**Temperature Rise**



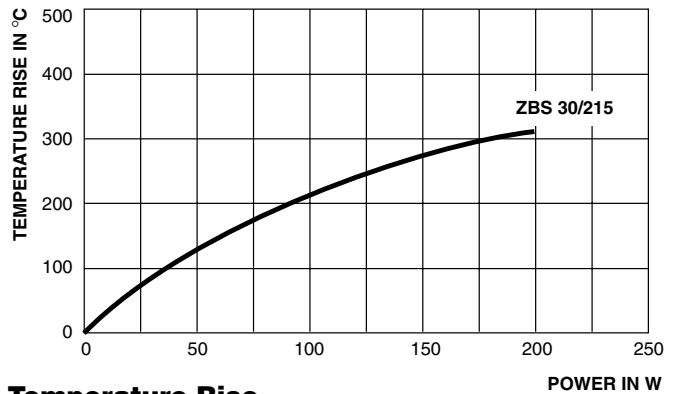
Temperature Rise



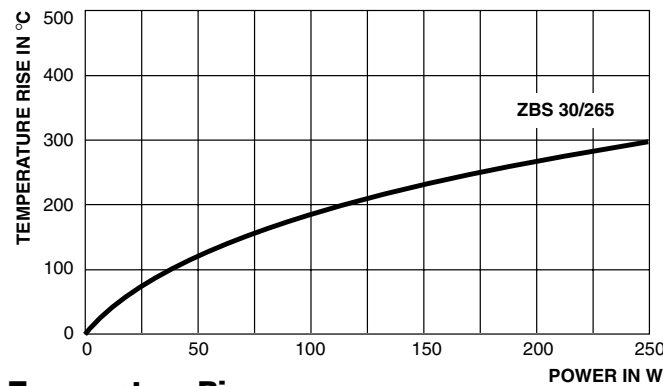
Temperature Rise



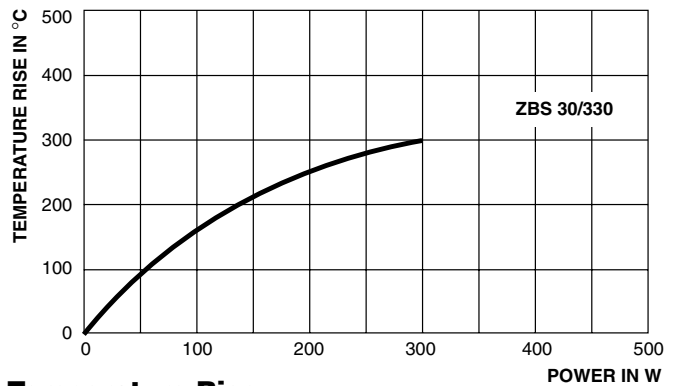
Temperature Rise



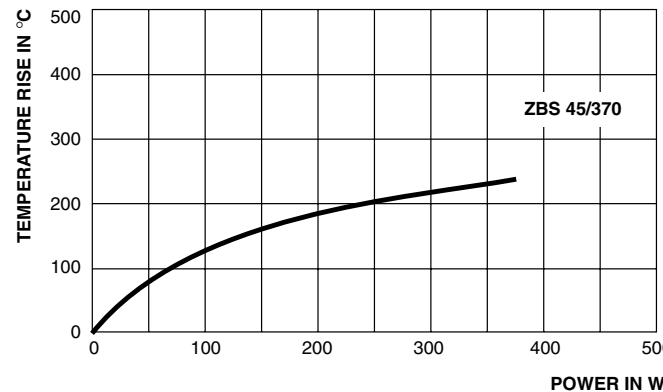
Temperature Rise



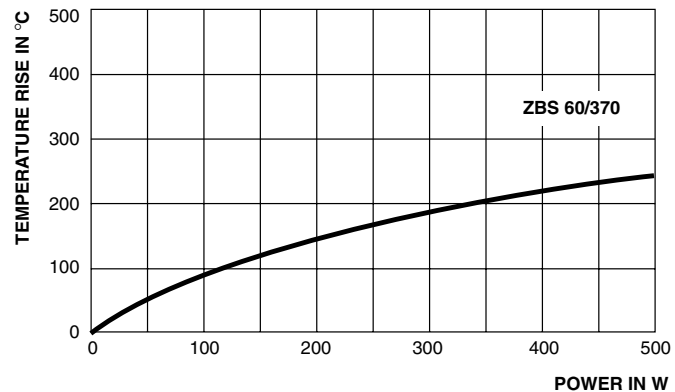
Temperature Rise



Temperature Rise



Temperature Rise



Temperature Rise



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