

## Vitreous Resistors with Corrugated Ribbon



### FEATURES

- All welded construction
- High power rating up to 1000 W
- Corrugated ribbon construction aids rapid cooling
- Complete vitreous coating for perfect humidity protection
- Adjustable design available = “E”
- Compliant to RoHS directive 2002/95/EC



**RoHS**  
COMPLIANT  
**GREEN**  
(5-2009)\*\*

### STANDARD ELECTRICAL SPECIFICATIONS

MODEL	POWER RATING $P_{40\text{ }^\circ\text{C}}$		RESISTANCE RANGE (1)			TOLERANCE
	WM 50 WM 110	WM 10	TCR + 650 ... + 750 ppm/K WM 10	TCR - 10 ... - 80 ppm/K WM 50	TCR + 100 ... + 180 ppm/K WM 110	
GBS 20/100 GBS 20/100 E	80 W 50 W	50 W	0.13 $\Omega$ to 0.51 $\Omega$	0.56 $\Omega$ to 2.2 $\Omega$	1.3 $\Omega$ to 6.2 $\Omega$	$\pm 10\%$ , $\pm 5\%$
GBS 20/165 GBS 20/165 E	160 W 100 W	100 W	0.27 $\Omega$ to 1.0 $\Omega$	1.1 $\Omega$ to 4.7 $\Omega$	2.4 $\Omega$ to 12 $\Omega$	$\pm 10\%$ , $\pm 5\%$
GBS 20/265 GBS 20/265 E	300 W 180 W	180 W	0.47 $\Omega$ to 1.8 $\Omega$	2.0 $\Omega$ to 7.5 $\Omega$	4.3 $\Omega$ to 22 $\Omega$	$\pm 10\%$ , $\pm 5\%$
GBS 30/100 GBS 30/100 E	150 W 90 W	90 W	0.10 $\Omega$ to 0.43 $\Omega$	0.47 $\Omega$ to 3.3 $\Omega$	1.0 $\Omega$ to 8.2 $\Omega$	$\pm 10\%$ , $\pm 5\%$
GBS 30/133 GBS 30/133 E	200 W 120 W	120 W	0.15 $\Omega$ to 0.62 $\Omega$	0.68 $\Omega$ to 5.1 $\Omega$	1.5 $\Omega$ to 12 $\Omega$	$\pm 10\%$ , $\pm 5\%$
GBS 30/165 GBS 30/165 E	250 W 150 W	150 W	0.20 $\Omega$ to 0.91 $\Omega$	1.0 $\Omega$ to 6.8 $\Omega$	2.0 $\Omega$ to 16 $\Omega$	$\pm 10\%$ , $\pm 5\%$
GBS 30/215 GBS 30/215 E	300 W 200 W	200 W	0.27 $\Omega$ to 1.1 $\Omega$	1.2 $\Omega$ to 9.1 $\Omega$	2.7 $\Omega$ to 24 $\Omega$	$\pm 10\%$ , $\pm 5\%$
GBS 30/265 GBS 30/265 E	375 W 250 W	250 W	0.30 $\Omega$ to 1.3 $\Omega$	1.5 $\Omega$ to 11 $\Omega$	3.9 $\Omega$ to 27 $\Omega$	$\pm 10\%$ , $\pm 5\%$
GBS 30/330 GBS 30/330 E	450 W 350 W	350 W	0.39 $\Omega$ to 1.8 $\Omega$	2.0 $\Omega$ to 15 $\Omega$	5.1 $\Omega$ to 36 $\Omega$	$\pm 10\%$ , $\pm 5\%$
GBS 45/370 GBS 45/370 E	750 W 550 W	550 W	0.75 $\Omega$ to 3.0 $\Omega$	3.3 $\Omega$ to 24 $\Omega$	8.2 $\Omega$ to 56 $\Omega$	$\pm 10\%$ , $\pm 5\%$
GBS 60/370 GBS 60/370 E	1000 W 700 W	700 W	0.91 $\Omega$ to 3.9 $\Omega$	4.3 $\Omega$ to 33 $\Omega$	10 $\Omega$ to 75 $\Omega$	$\pm 10\%$ , $\pm 5\%$

### 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](http://www.vishay.com/ppg?21015)

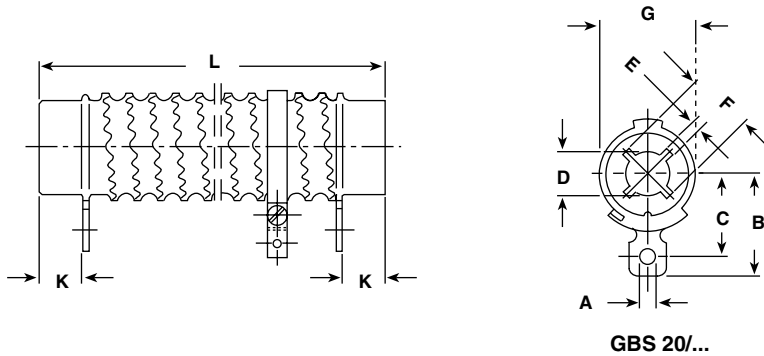
\*\* Please see document “Vishay Material Category Policy”: [www.vishay.com/doc?99902](http://www.vishay.com/doc?99902)

PART NUMBER AND PRODUCT DESCRIPTION						
Part Number: GBS60AA03750KLX000						
<div style="display: flex; justify-content: space-around; text-align: center;"> <span>G</span><span>B</span><span>S</span><span>6</span><span>0</span><span>A</span><span>A</span><span>0</span><span>3</span><span>7</span><span>5</span><span>0</span><span>K</span><span>L</span><span>X</span><span>0</span><span>0</span><span>0</span> </div>						
MODEL	VARIANT/ TERMINAL	TCR/MATERIAL	VALUE	TOLERANCE CODE	PACKAGING CODE	SPECIAL
<b>GBS202S</b> = GBS 20/100 <b>GBS204L</b> = GBS 20/165 <b>GBS207D</b> = GBS 20/265 <b>GBS302S</b> = GBS 30/100 <b>GBS303P</b> = GBS 30/133 <b>GBS304L</b> = GBS 30/165 <b>GBS305Z</b> = GBS 30/215 <b>GBS307D</b> = GBS 30/265 <b>GBS3096</b> = GBS 30/330 <b>GBS45AA</b> = GBS 45/370 <b>GBS60AA</b> = GBS 60/370	<b>0</b> = Neutral <b>1</b> = E <b>Z</b> = Value overflow (BV)	<b>1</b> = - 10 ... - 80 ppm/K WM 50 Class 1 <b>3</b> = 100 ... 180 ppm/K WM 110 Class 3 <b>4</b> = 650 ... 750 ppm/K WM 10 <b>5</b> = SWI	<b>2 digit value</b> <b>1 digit multiplier</b> <b>MULTIPLIER</b> <b>8</b> = *10 <sup>-2</sup> <b>9</b> = *10 <sup>-1</sup> <b>0</b> = *10 <sup>0</sup>	<b>J</b> = ± 5.0 % <b>K</b> = ± 10.0 %	<b>LX</b> = Loose pack, without quantity <b>ZX</b> = 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. <b>000</b> = Standard
Product Description: GBS60/370 110 75R 10 % LX						
GBS60/370	110	75R	10 %	LX		
MODEL (1)	TCR/MATERIAL (1)	VALUE (1)	TOLERANCE CODE (1)	PACKAGING DESCRIPTION (2)		

**Notes**

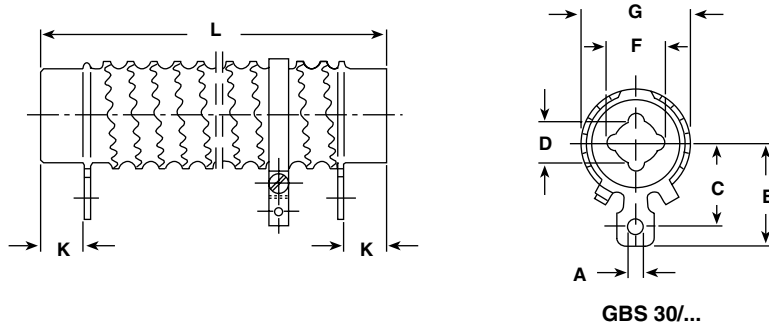
- (1) See "Part Number" above
- (2) See "Packaging Code" above

**DIMENSIONS**

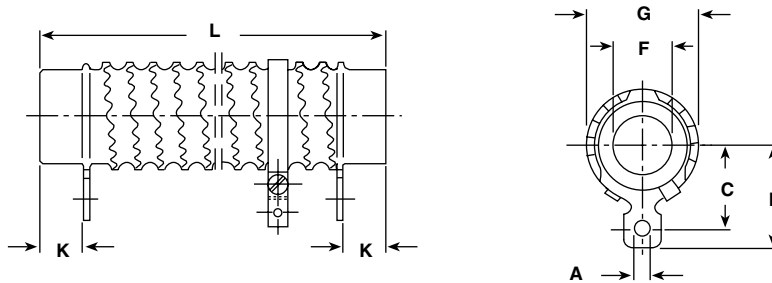


MODEL	DIMENSIONS in millimeters [inches]									
	L	K	A	B	C	D	E	F	G	MASS (g)
<b>GBS 20/100</b> <b>GBS 20/100 E</b>	100 ± 2.5 [3.937 ± 0.098]	15 [0.591]	4.2 [0.165]	26.5 [1.043]	22 [0.866]	10 [0.394]	1.5 [0.059]	14 [0.551]	24 [0.945]	100
<b>GBS 20/165</b> <b>GBS 20/165 E</b>	165 ± 4 [6.496 ± 0.157]	15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

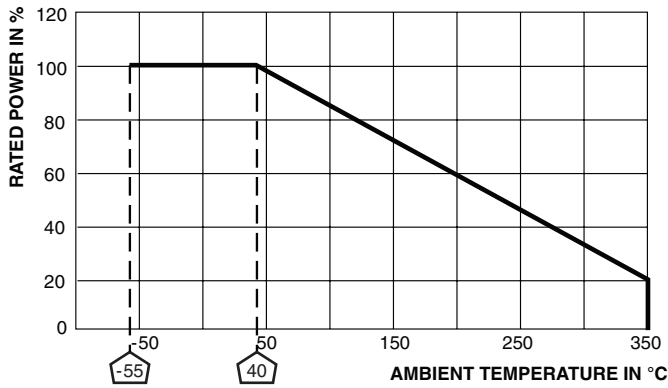
**DIMENSIONS** (continued)



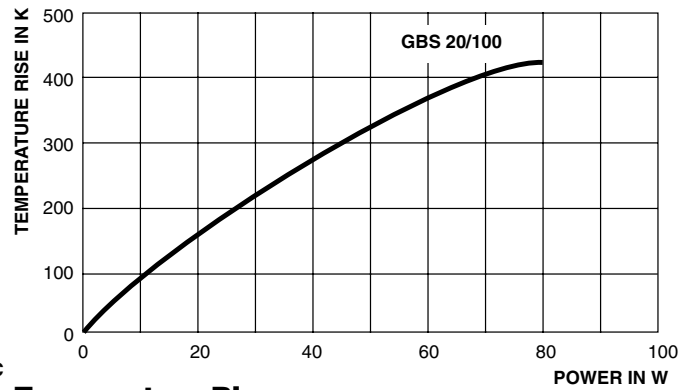
MODEL	DIMENSIONS in millimeters [inches]								
	L	K	A	B	C	D	F	G	MASS (g)
GBS 30/100 GBS 30/100 E	100 ± 2.5 [3.937 ± 0.098]	15 [0.591]	5.2 [0.205]	34 [1.339]	28 [1.102]	14 [0.551]	18.5 [0.728]	37 ± 1 [1.457 ± 0.039]	200
GBS 30/133 GBS 30/133 E	133 ± 3.3 [5.236 ± 0.130]	15 [0.591]	5.2 [0.205]	34 [1.339]	28 [1.102]	14 [0.551]	18.5 [0.728]	37 ± 1 [1.457 ± 0.039]	250
GBS 30/165 GBS 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
GBS 30/215 GBS 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
GBS 30/265 GBS 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
GBS 30/330 GBS 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



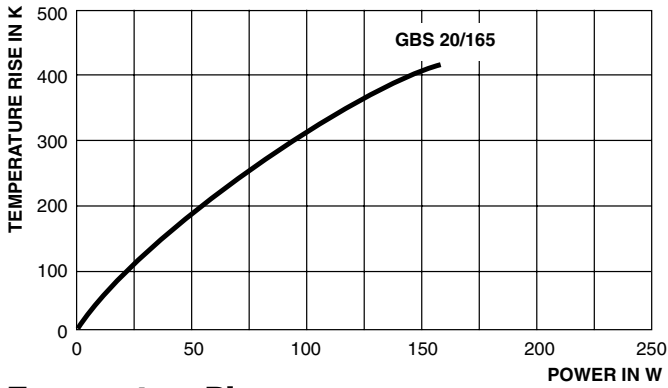
MODEL	DIMENSIONS in millimeters [inches]							
	L	K	A	B	C	F	G	MASS (g)
GBS 45/370 GBS 45/370 E	370 ± 9 [14.567 ± 0.354]	15 [0.591]	5.2 [0.205]	42.5 [1.673]	37 [1.457]	30 [1.181]	52 ± 1 [2.047 ± 0.039]	1000
GBS 60/370 GBS 60/370 E	370 ± 9 [14.567 ± 0.354]	15 [0.591]	5.2 [0.205]	51.5 [2.028]	45.5 [1.791]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



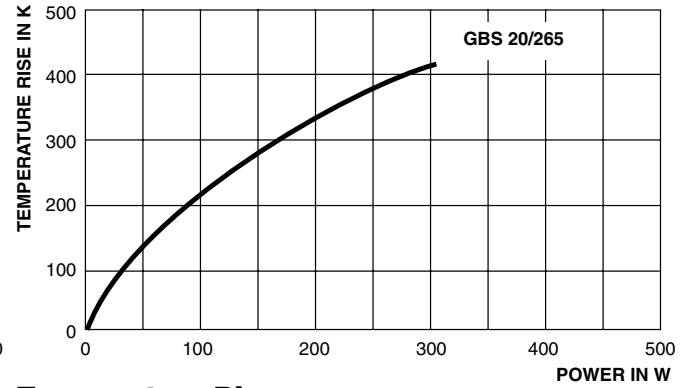
**Derating**



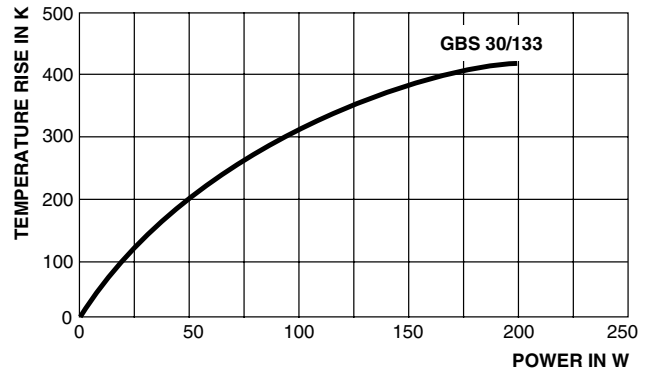
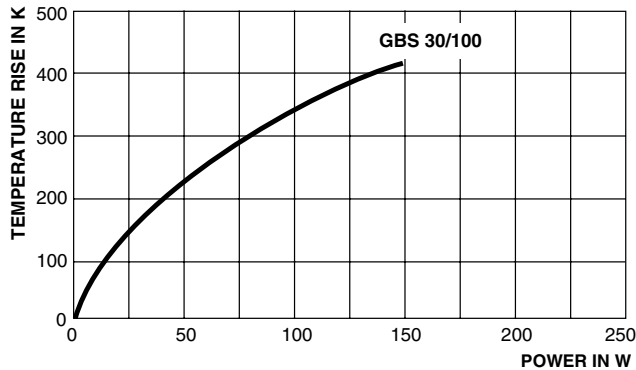
**Temperature Rise**

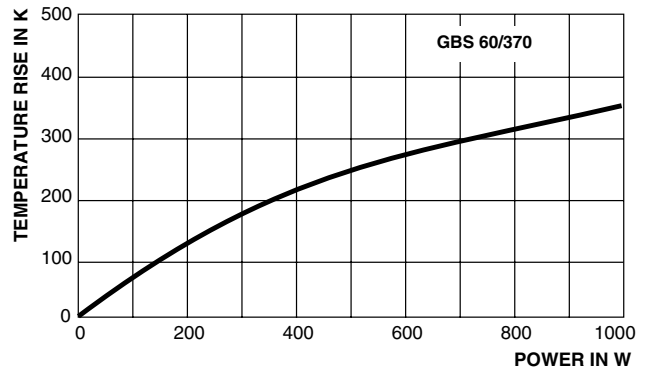
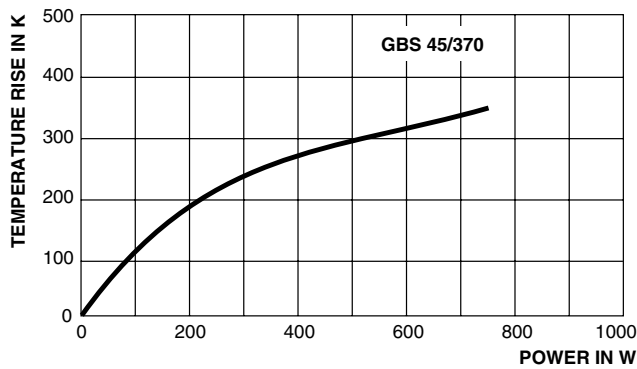
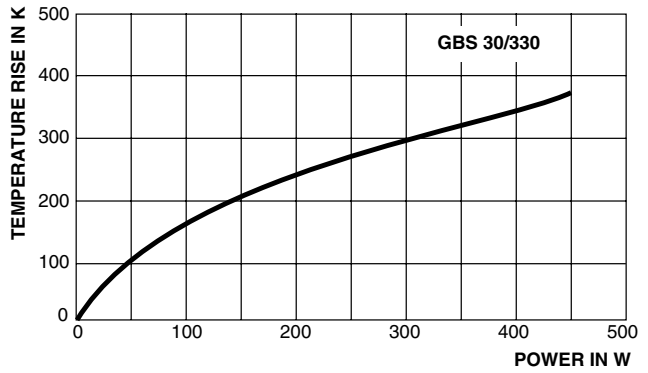
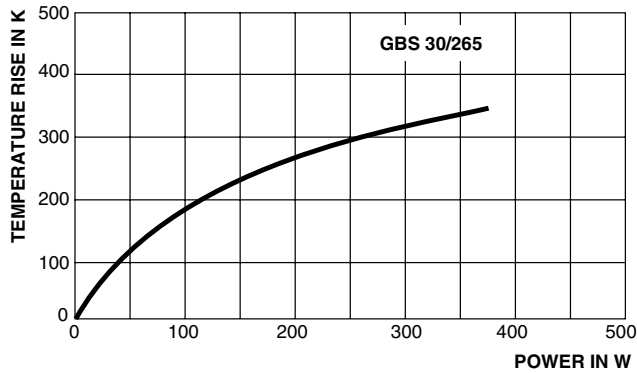
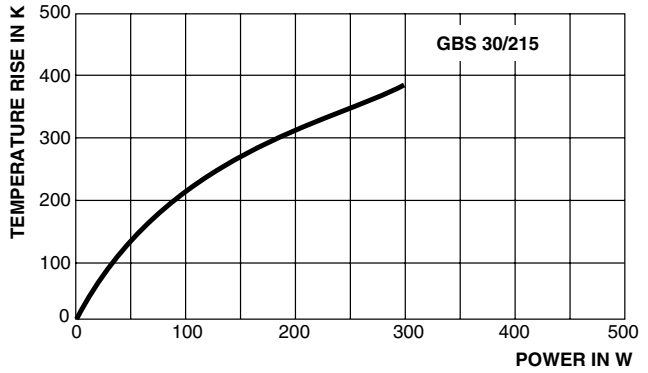
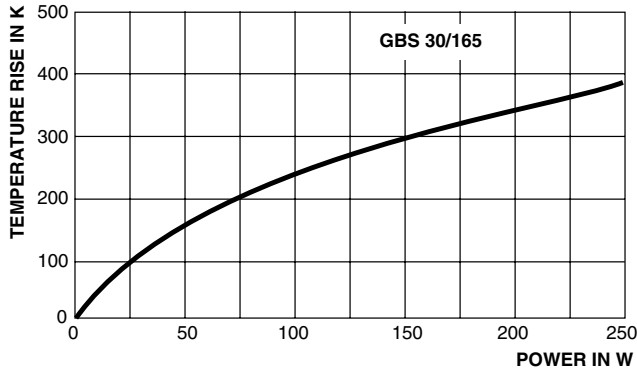


**Temperature Rise**



**Temperature Rise**







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