Vitreous Wirewound Resistors with Ferrules

FEATURES

- Caps made from drawn brass, nickel plated (GZK style)
- Machined caps with inner thread available (GDK style: M4 is standard, other threads on request)
- Easy to change when mounted with spring clips
- Complete vitreous coating for perfect humidity protection
- TCR 100 ... 180 ppm/K - WM 110 (Class 3)
- Non inductive version = “Ni”
- Compliant to RoHS directive 2002/95/EC

Pb-free RoHS COMPLIANT GREEN (5-2008)**

STANDARD ELECTRICAL SPECIFICATIONS

MODEL	POWER RATING $P_{40\ °C}$	LIMITING VOLTAGE	RESISTANCE RANGE (1)	TOLERANCE
GWK 10	10 W	280 V	1.8 Ω to 16 kΩ	± 10 %
			6.8 Ω to 16 kΩ	± 5 %
			270 Ω to 16 kΩ	± 2 %
GWK 10 Ni	7 W		2.4 Ω to 1 kΩ	± 10 %
			15 Ω to 1 kΩ	± 5 %
GWK 20	20 W	400 V	2.2 Ω to 27 kΩ	± 10 %
			12 Ω to 27 kΩ	± 5 %
			360 Ω to 27.8 kΩ	± 2 %
GWK 20 Ni	13 W		4.7 Ω to 1.8 kΩ	± 10 %
			20 Ω to 1.8 kΩ	± 5 %
GWK 40	30 W	580 V	3.3 Ω to 43 kΩ	± 10 %
			12 Ω to 43 kΩ	± 5 %
			470 Ω to 43 kΩ	± 2 %
GWK 40 Ni	20 W		6.8 Ω to 2.7 kΩ	± 10 %
			20 Ω to 2.7 kΩ	± 5 %
GWK 60	40 W	850 V	6.2 Ω to 82 kΩ	± 10 %, ± 5 %
			47 Ω to 82 kΩ	± 2 %
GWK 60 Ni	25 W		13 Ω to 5.1 kΩ	± 10 %, ± 5 %
GWK 100	80 W	1200 V	8.2 Ω to 82 kΩ	± 10 %, ± 5 %
			47 Ω to 82 kΩ	± 2 %
GWK 100 Ni	50 W		27 Ω to 10 kΩ	± 10 %, ± 5 %
GWK 150	100 W	1600 V	12 Ω to 110 kΩ	± 10 %, ± 5 %
			30 Ω to 110 kΩ	± 2 %
GWK 150 Ni	60 W		36 Ω to 15 kΩ	± 10 %, ± 5 %
GWK 200	160 W	2300 V	20 Ω to 180 kΩ	± 10 %, ± 5 %, ± 2 %
GWK 200 Ni	100 W		56 Ω to 22 kΩ	± 10 %, ± 5 %
GWK 300	260 W	4000 V	36 Ω to 330 kΩ	± 10 %, ± 5 %, ± 2 %
GWK 300 Ni	180 W		100 Ω to 43 kΩ	± 10 %, ± 5 %

Notes

(1) Resistance value to be selected for ± 10 % tolerance from E12 and for ± 5 % and ± 2 % 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: GWK100J1000KLX000

G	W	K	1	0	0	J	1	0	0	0	K	L	X	0	0	0

MODEL	VARIANT/ TERMINAL	VALUE	TOLERANCE CODE	PACKAGING CODE	SPECIAL
GWK010 = GWK 10 **GWK020** = GWK 20 **GWK040** = GWK 40 **GWK060** = GWK 60 **GWK100** = GWK 100 **GWK150** = GWK 150 **GWK200** = GWK 200 **GWK220** = GWK 220 **GWK300** = GWK 300	**I** = GZK **J** = GDK (also known as GDR and M4) **Z** = Value overflow (BV) (**Note:** Ni is also known as SWI)	**3 digit value** **1 digit multiplier** MULTIPLIER **8** = $*10^{-2}$ **9** = $*10^{-1}$ **0** = $*10^{0}$ **1** = $*10^{1}$ **2** = $*10^{2}$ **3** = $*10^{3}$	**G** = ± 2.0 % **J** = ± 5.0 % **K** = ± 10.0 %	**LX** = Loose pack, 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: GWK100 GDK 100R 10 % LX

GWK100	GDK	100R	10 %	LX
MODEL (1)	VARIANT/ TERMINAL (1)	VALUE (1)	TOLERANCE CODE (1)	PACKAGING DESCRIPTION (2)

Notes
(1) See “Part Number” above
(2) See “Packaging Code” above

DIMENSIONS in millimeters [inches]

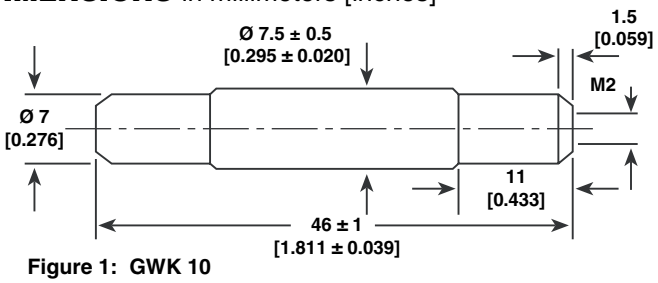


Figure 1: GWK 10

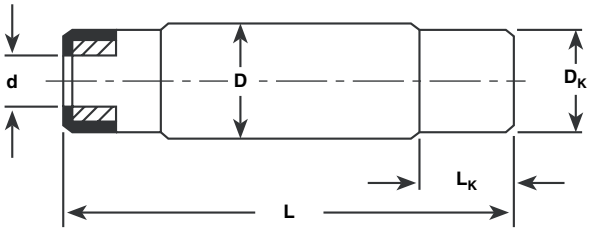
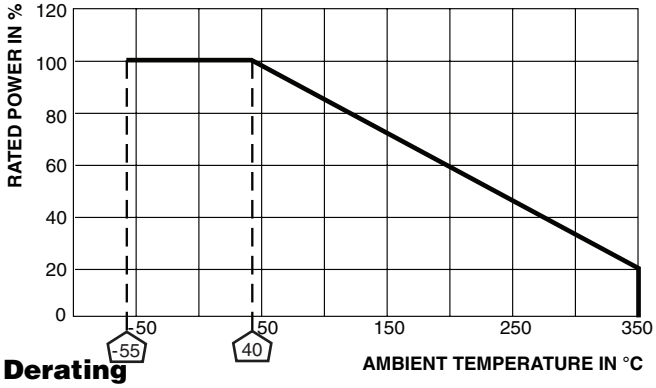


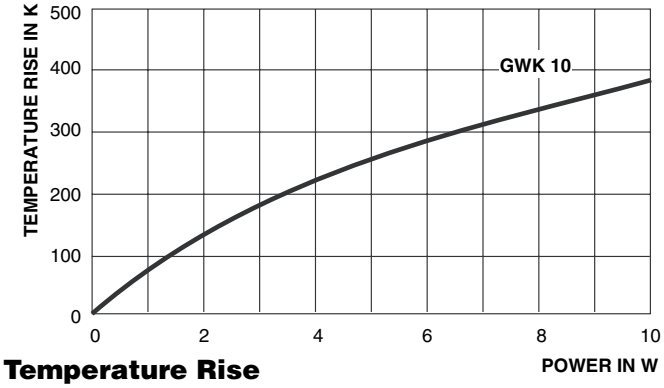
Figure 2: GWK 20...GWK 300

MODEL	DIMENSIONS in millimeters [inches]			
	GWK 10 GWK 10 Ni	**GWK 20 GWK 20 Ni**	**GWK 40 GWK 40 Ni**	**GWK 60 GWK 60 Ni**
D	See Drawing Figure 1	12.3 ± 0.8 [0.484 ± 0.031]	15.3 ± 0.8 [0.602 ± 0.031]	15.3 ± 0.8 [0.602 ± 0.031]
L		51 ± 1.3 [2.008 ± 0.051]	61 ± 1.5 [2.402 ± 0.059]	81 ± 2 [3.189 ± 0.079]
D_K		11 [0.433]	14 [0.551]	14 [0.551]
L_K		10 [0.394]	13 [0.512]	13 [0.512]
d		4.5 [0.177]	5.5 [0.217]	5.5 [0.217]

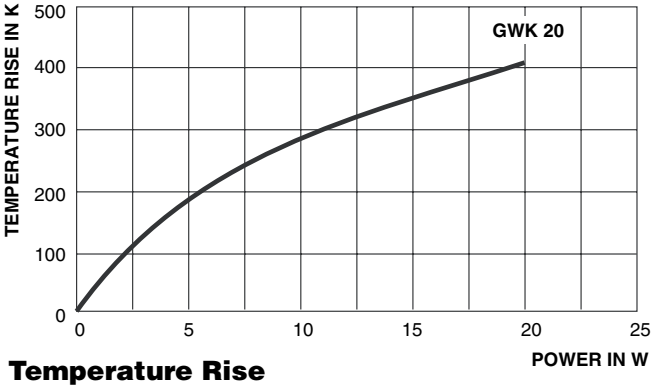
MODEL	DIMENSIONS in millimeters [inches]			
	GWK 100 GWK 100 Ni	**GWK 150 GWK 150 Ni**	**GWK 200 GWK 200 Ni**	**GWK 300 GWK 300 Ni**
D	22 ± 1 [0.866 ± 0.039]	22 ± 1 [0.866 ± 0.039]	22 ± 1 [0.866 ± 0.039]	22 ± 1 [0.866 ± 0.039]
L	101 ± 2.5 [3.976 ± 0.098]	121 ± 3 [4.764 ± 0.118]	166.5 ± 4.2 [6.555 ± 0.165]	266.5 ± 6.7 [10.492 ± 0.264]
D_K	21 [0.827]	21 [0.827]	21 [0.827]	21 [0.827]
L_K	16 [0.63]	16 [0.63]	16 [0.63]	16 [0.63]
d	10 [0.394]	10 [0.394]	10 [0.394]	10 [0.394]



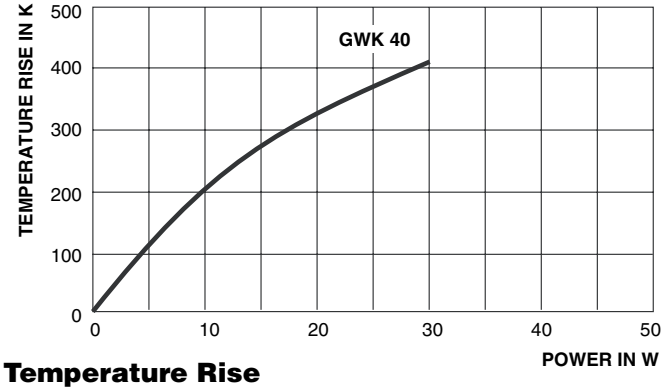
Derating



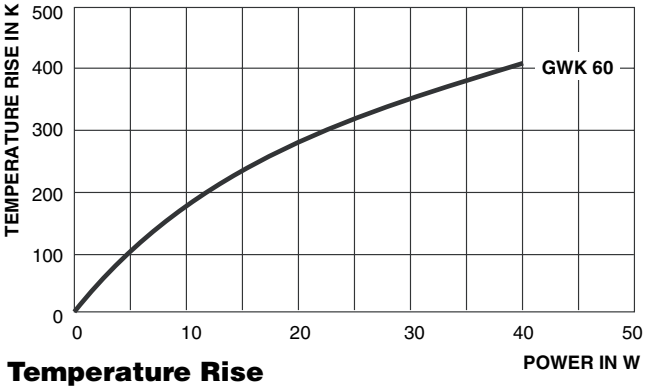
Temperature Rise



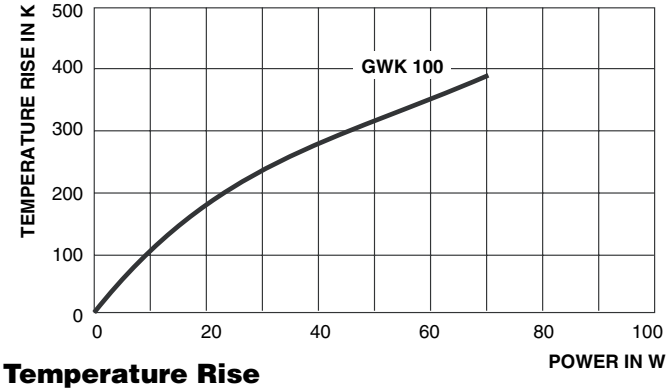
Temperature Rise



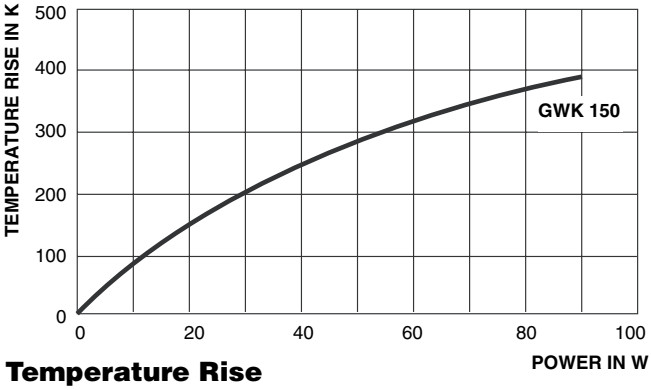
Temperature Rise



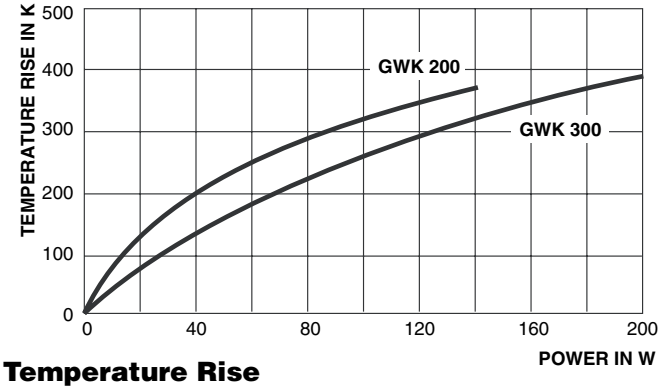
Temperature Rise



Temperature Rise



Temperature Rise



Temperature Rise

PULSE HANDLING FOR SHORT PULSES (less than 100 ms)

For single pulsed up to 100 ms duration time the following energy resistance chart can be used to calculate the energy a resistor can handle. Look to the resistance value or the next higher value of the model you need and follow this row to the energy per ohm column to the left. The energy per ohm value multiplied by the resistance value is the energy the resistor can handle for 100 ms. This energy divided by 0.1 ms is the power the resistor can handle for 100 ms. For the power the resistor can handle for 10 ms needed divide the energy by 0.01. The maximum pulse power is limited at 625 x rated power.

Do not use this chart for GWK...Ni styles. For more information and assistance please contact factory.

ENERGY RESISTANCE CHART

GWK10		GWK 20		GWK 40		GWK 60		GWK 100		GWK 150		GWK 200		GWK 300	
ENERGY/Ω [Ws/Ω]	R [Ω]	ENERGY/Ω [Ws/Ω]	R [Ω]	ENERGY/Ω [Ws/Ω]	R [Ω]	ENERGY/Ω [Ws/Ω]	R [Ω]	ENERGY/Ω [Ws/Ω]	R [Ω]	ENERGY/Ω [Ws/Ω]	R [Ω]	ENERGY/Ω [Ws/Ω]	R [Ω]	ENERGY/Ω [Ws/Ω]	R [Ω]
1.17E - 04	16.0K	1.15E - 04	27.0	1.15E - 04	43.0	1.15E - 04	82.0K	2.80E - 04	82.0K	2.80E - 04	110K	2.80E - 04	180K	2.79E - 04	330K
1.17E - 04	13.0K	1.16E - 04	2.40	1.15E - 04	36.0	1.15E - 04	68.0K	2.80E - 04	62.0K	2.80E - 04	82.0K	2.80E - 04	130K	2.80E - 04	240K
1.72E - 04	9.1K	1.70E - 04	16.0	1.69E - 04	24.0	1.68E - 04	43.0K	4.41E - 04	43.0K	4.40E - 04	56.0K	4.40E - 04	91.0K	4.40E - 04	160K
2.88E - 04	6.2K	2.83E - 04	11.0	2.82E - 04	18.0	2.81E - 04	33.0K	7.52E - 04	30.0K	7.51E - 04	39.0K	7.51E - 04	62.0K	7.50E - 04	120K
4.53E - 04	4.3K	4.47E - 04	7.5K	4.45E - 04	11.0	4.42E - 04	22.0K	1.20E - 03	22.0K	1.20E - 03	30.0K	1.20E - 03	47.0K	1.20E - 03	82.0
7.72E - 04	3.0K	7.65E - 04	5.1K	7.58E - 04	8.2K	7.54E - 04	15.0K	1.84E - 03	15.0K	1.83E - 03	20.0K	1.83E - 03	33.0K	1.83E - 03	62.0
1.24E - 03	2.2K	1.23E - 03	3.9K	1.22E - 03	5.6K	1.21E - 03	11.0K	2.93E - 03	10.0K	2.93E - 03	15.0K	2.93E - 03	22.0K	2.92E - 03	39.0
1.91E - 03	1.5K	1.87E - 03	2.7K	1.86E - 03	3.9K	1.84E - 03	7.5K	4.53E - 03	3.0K	4.51E - 03	4.3K	4.49E - 03	6.8K	4.48E - 03	12.0
3.06E - 03	1.1K	3.00E - 03	1.8K	2.98E - 03	2.7K	2.95E - 03	5.1K	7.12E - 03	2.2K	7.09E - 03	3.0K	7.05E - 03	4.7K	7.04E - 03	9.1K
5.05E - 03	330	4.79E - 03	560	4.70E - 03	820	4.58E - 03	1.6K	1.14E - 02	1.6K	1.14E - 02	2.0K	1.13E - 02	3.3K	1.13E - 02	6.2K
8.11E - 03	220	7.61E - 03	390	7.44E - 03	560	7.20E - 03	1.1K	1.85E - 02	1.1K	1.84E - 02	1.5K	1.83E - 02	2.4K	1.83E - 02	4.3K
1.31E - 02	160	1.23E - 02	300	1.19E - 02	430	1.17E - 02	750	2.98E - 02	750	2.97E - 02	1.0K	2.94E - 02	1.6K	2.94E - 02	3.0K
2.06E - 02	110	2.01E - 02	200	1.94E - 02	300	1.89E - 02	560	4.81E - 02	560	4.78E - 02	750	4.75E - 02	1.2K	4.73E - 02	2.2K
3.56E - 02	75	3.24E - 02	150	3.16E - 02	200	3.04E - 02	390	1.14E - 01	390	1.14E - 01	560	7.23E - 02	1.0K	7.20E - 02	1.8K
5.77E - 02	56	5.30E - 02	100	5.10E - 02	150	4.93E - 02	270	1.79E - 01	300	1.78E - 01	390	1.13E - 01	910	1.13E - 01	1.6K
1.34E - 01	43	1.24E - 01	75	1.21E - 01	110	7.49E - 02	220	2.81E - 01	200	2.79E - 01	270	1.77E - 01	620	1.76E - 01	1.1K
2.14E - 01	30	1.98E - 01	51	1.90E - 01	75	1.17E - 01	200	4.81E - 01	150	4.79E - 01	180	2.77E - 01	430	2.76E - 01	750
3.47E - 01	20	3.14E - 01	36	3.00E - 01	56	1.83E - 01	150	7.75E - 01	100	7.69E - 01	130	4.75E - 01	300	4.72E - 01	560
5.96E - 01	15	5.48E - 01	24	5.22E - 01	36	2.88E - 01	100	1.19E + 00	68	1.17E + 00	100	7.62E - 01	220	7.57E - 01	390
9.93E - 01	10	8.86E - 01	18	8.41E - 01	27	4.96E - 01	68	1.87E + 00	51	1.85E + 00	68	1.17E +	150	1.16E + 00	270
1.54E + 00	7.5	1.38E + 00	13	1.29E + 00	20	7.98E - 01	51	2.92E + 00	36	2.89E + 00	47	1.83E +	110	1.81E + 00	200
2.52E + 00	5.1	2.21E + 00	9.1	2.05E + 00	15	1.23E + 00	36	4.61E + 00	27	4.56E + 00	36	2.85E +	82	2.82E + 00	150
4.00E + 00	3.9	3.48E + 00	6.8	3.26E + 00	10	1.93E + 00	27	7.46E + 00	18	7.36E + 00	24	4.50E +	56	4.45E + 00	100
6.58E + 00	2.7	5.64E + 00	4.7	5.26E + 00	6.8	3.05E + 00	18	1.21E + 01	12	1.19E + 01	18	7.24E +	39	7.16E + 00	68
1.12E + 01	1.8	9.11E + 00	3.6	8.50E + 00	5.1	4.84E + 00	13	1.97E ± 01	8.2	1.93E + 01	12	1.17E +	27	1.15E + 01	51
		1.56E + 01	2.2	1.42E + 01	3.3	7.86E + 00	9.1					1.89E +	20	1.86E + 01	36
						1.29E + 01	6.2								

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