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 ppm/K to 180 ppm/K - WM 110 (Class 3)
- Non inductive version = “Ni”
- Material categorization: For definitions of compliance please see www.vishay.com/doc?99912

RoHS COMPLIANT HALOGEN FREE

STANDARD ELECTRICAL SPECIFICATIONS

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

Notes

- For available “Mounting Accessories for Resistors”, please see: www.vishay.com/doc?21015

(1) Resistance value to be selected for ± 10 % tolerance from E12 and for ± 5 % and ± 2 % from E24

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)	**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	**000** = Standard **3 digit code** = Special or NI version (1)

Product Description: GWK100 GDK 100R 10 % LX

GWK100	GDK	100R	10 %	LX
MODEL (2)	VARIANT/ TERMINAL (2)	VALUE (2)	TOLERANCE CODE (2)	PACKAGING DESCRIPTION (3)

Notes

(1) For special variants, special winding, or NI version, please contact: ww1resistors@vishay.com
(2) See “Part Number” above
(3) See “Packaging Code” above

DIMENSIONS in millimeters [inches]

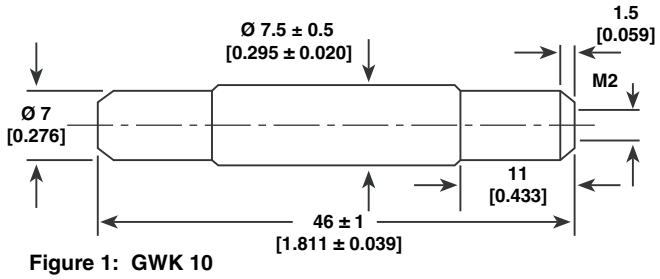


Figure 1: GWK 10

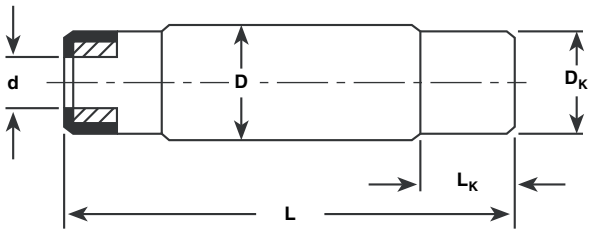
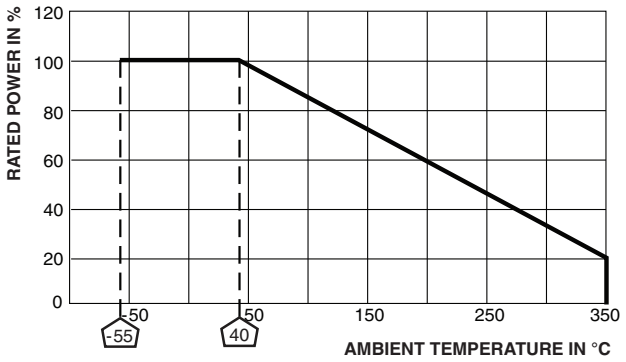


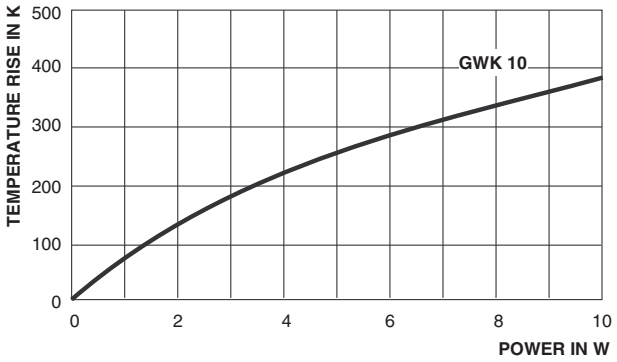
Figure 2: GWK 20...GWK 300

MODEL	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	**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



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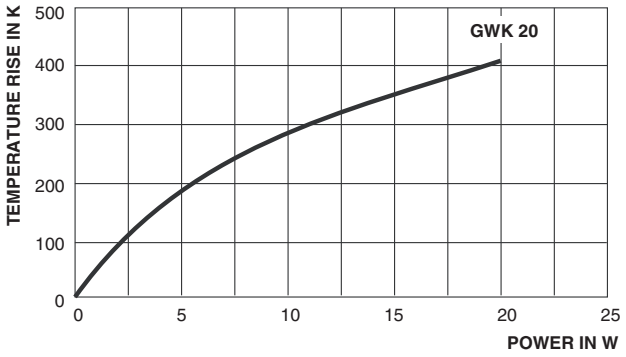

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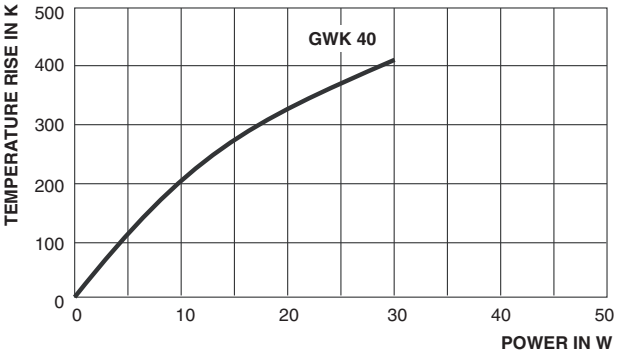

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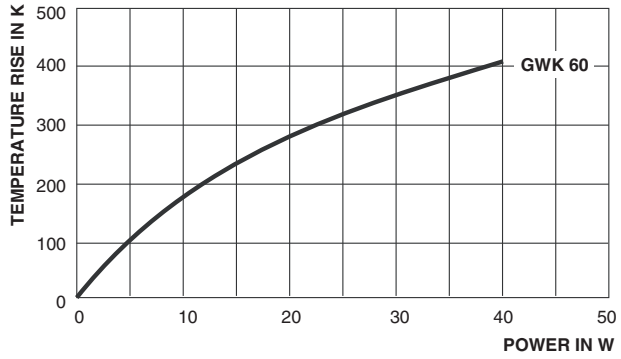

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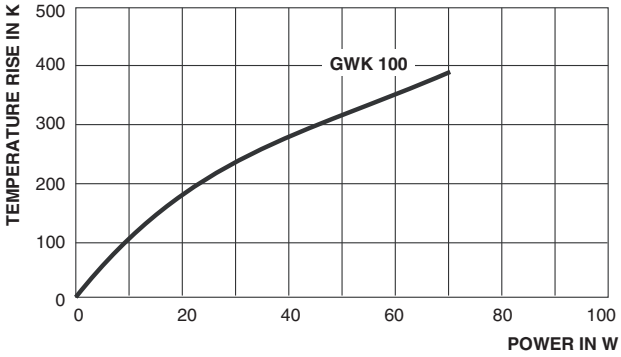

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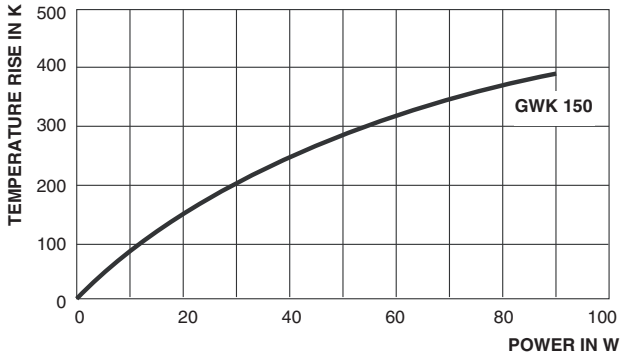

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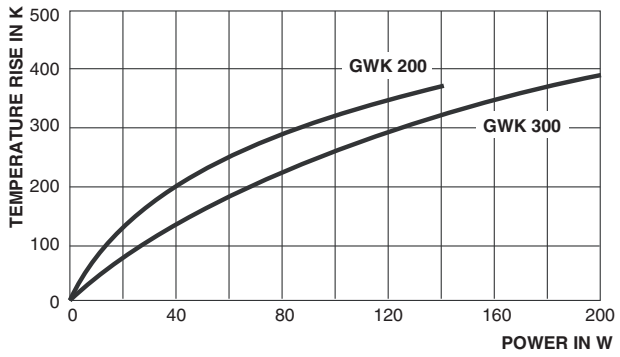

PULSE HANDLING FOR SHORT PULSES (less than 100 ms)

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	27.0K	1.15E - 04	43.0K	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	2.40K	1.15E - 04	36.0K	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	16.0K	1.69E - 04	24.0K	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	11.0K	2.82E - 04	18.0K	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	11.0K	4.42E - 04	22.0K	1.20E - 03	22.0K	1.20E - 03	30.0K	1.20E - 03	47.0K	1.20E - 03	82.0K
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	62.0K
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	39.0K
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	12.0K
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 + 00	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 + 00	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 + 00	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 + 00	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 + 00	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 + 01	27	1.15E + 01	51
		1.56E + 01	2.2	1.42E + 01	3.3	7.86E + 00	9.1					1.89E + 01	20	1.86E + 01	36
						1.29E + 01	6.2								

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