

PWRS - Series

Precision Wire - Wound Resistors

FEATURES

- Resistance from 0,01Ω
- Temperature Coefficients to ±2 to ±6000ppm/°C
- Resistance Tolerances to ±0,005%
- Power Rating to 0,5Watts
- Low Inductive Design
- 10 Days Quick Production Service
- RoHS - compliant



RATED VALUES (IEC 60115-1)

Resistance Range	Ω	0,01Ω to 1MΩ
Resistance Tolerance	%	Depending on Type/Power Rating 0,005% to 1,0%
Temperature Coefficient	ppm/°C	±10 > 100Ω; ±20 to 10Ω - 100Ω; ±30 from 1Ω - 9,9Ω; ±90 < 1Ω
Operating Voltage (U _{max})	V	$\sqrt{P \times R}$
Insulation Resistance (R _{ins})	Ω	1G
Operating Temperature Range (T)	°C	55°C bis 125°C

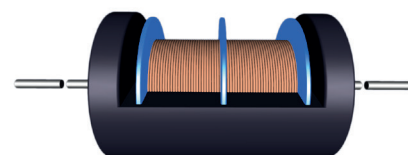
Type	U _{max} (V)	Power (W)	Tolerance- /Resistance Range			
			±0,1% / Ω	±0,05% / Ω	±0,01% / Ω	±0,005% / Ω
PWRS01	150	0,125	1 - 500K	10 - 500K	50 - 500K	1K - 500K
PWRS02	150	0,250	1 - 750K	10 - 750K	50 - 750K	1K - 750K
PWRS03	150	0,300	1 - 500K	10 - 500K	50 - 500K	1K - 500K
PWRS04	150	0,500	1 - 1M	10 - 1M	50 - 1M	1K - 1M

- If the best possible long-term stability is to be achieved (change in value relative to the nominal values at delivery), it must be ensured that the resistor is operated at an ambient temperature of 25°C max. To keep the self-heating (surface temperature) below 70°C, the power should be selected accordingly. In addition, the long-term stability can be optimized by artificial aging (Option HS).

CONSTRUCTION

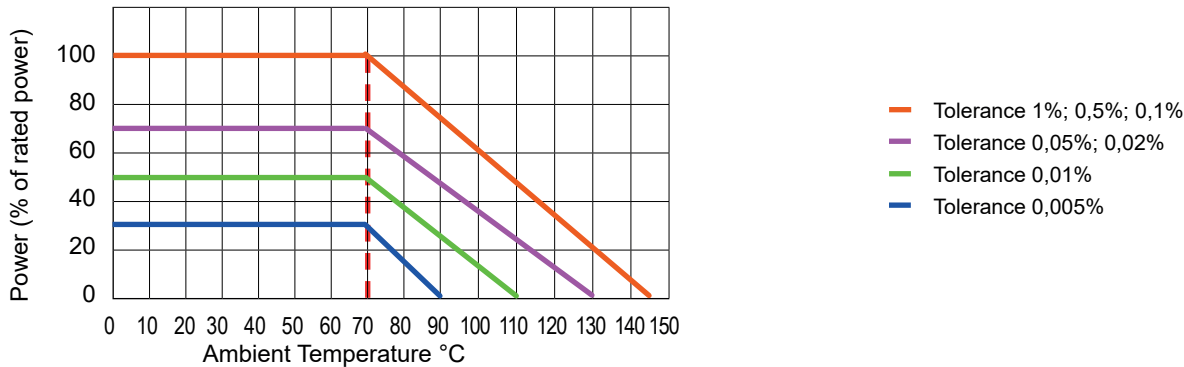
Resistance Material	Wire, Special Alloy
Winding	Wire Windings on Ceramics
Coating	Epoxy Moulding
Lead Wires	Tin Plated Copper Wire
Marking	Lacquer, solvent-resistant

MULTI CHAMBER WINDINGS



Ayrton - Perry Winding
(Standard)

POWER DERATING CURVE



PERFORMANCE

IEC 60115-1	Test	Conditions of Test	Specification ΔR
4.23	Moisture Resistance	+85°C, 85% R.H., Rated Voltage, 1000h	$\pm(0,25\% R + 0,05\Omega)$
4.19	Thermal Shock	-55°C 15 Minutes, +150°C 15 Minutes, 5 Cycles	$\pm(0,1\% R + 0,01\Omega)$
4.6	Dielectric Strength	U_{ins} 500V for OAS010/015/020; other 1000V for 1 Minute	10G Ω
4.13	Short Time Overload	5x Rated Voltage U_{max} , 5s	$\pm(0,1\% R + 0,01\Omega)$
4.25	Endurance	+70°C, U_{max} 1,5h „ON“ and 0,5h „OFF“, 2000h	$\pm(0,25\% R + 0,05\Omega)$
4.22	Vibration	Frequency 10Hz to 500Hz, in x,y,z Direction	$\pm(0,1\% R + 0,01\Omega)$
4.16	Shock	5 Impulses at 100g for 5ms	$\pm(0,1\% R + 0,01\Omega)$
4.18	Soldering Resistance	260°C, max. 5s	$\pm(0,1\% R + 0,01\Omega)$

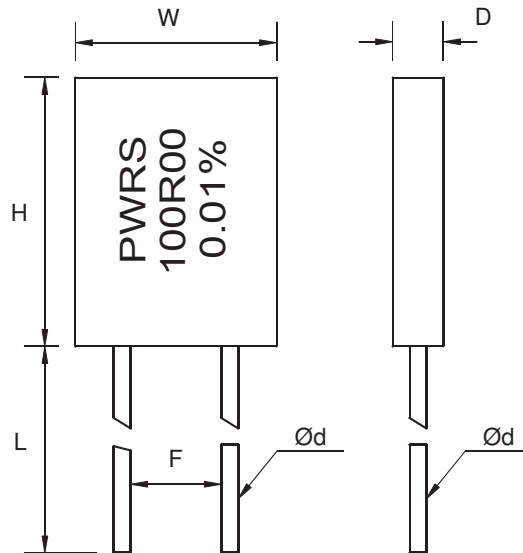
Measuring distance 9,5 mm from the end of the body.

- Note: Resistors in the narrower precision range (resistance tolerance <0.1% in combination with resistance values $\leq 1\Omega$) should be soldered in the hand soldering procedure by trained personnel, otherwise a change in value of the nominal specifications may result.

OPTIONS

Resistance Values < 1 Ω	Depending on Availability of Resistance Wires
Optimised Long Term Stability (HS)	Maximum age-related change of the resistance value < $\pm 20\text{ppm}/^\circ\text{C}$
Special Temperature Coefficients	$\pm 5\text{ppm}/^\circ\text{C}$ to $\pm 6000\text{ppm}/^\circ\text{C}$, on request
Special Connecting Wires	Example: for contact welding, on request
Resistor - (Matched) Sets	Selection of resistors according to temperature coefficient and tolerance

DIMENSIONS



	H	D	F	L	d
PWRS01	5,1 ±0,65	3,3 ±0,15	2,54 ±0,4	40 ±1,5	0,409 ±0,05
PWRS02	7,9 ±0,65	6,4 ±0,15	3,81 ±0,4	40 ±1,5	0,643 ±0,05
PWRS03	7,9 ±0,65	6,4 ±0,15	5,08 ±0,4	40 ±1,5	0,643 ±0,05
PWRS04	12,7 ±0,65	6,4 ±0,15	3,81 ±0,4	40 ±1,5	0,643 ±0,05

All Dimension in mm

ORDERING INFORMATION

PWRS01 100R00 0,01% TK20 (PWRS01 100Ω; ±0,01%; ±20ppm/°C)

Type	Special	Resistance Value	Tolerance	Temperature Coefficient	Power	Options	Packaging
PWRS01	- XXX	0R1000 100R00 10K000 1M0000	0,005% 0,01% 0,02% 0,05% 0,1% 0,25% 0,5% 1,0%	TK10 TK20 TK50 TK90 (TK5 on request)	-	- HS	-

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