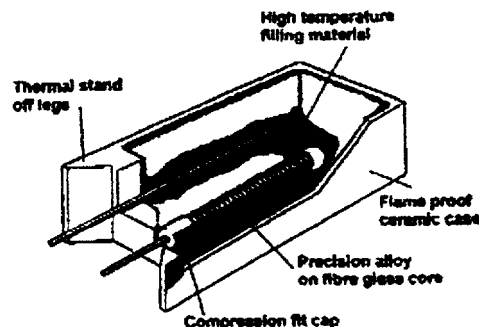


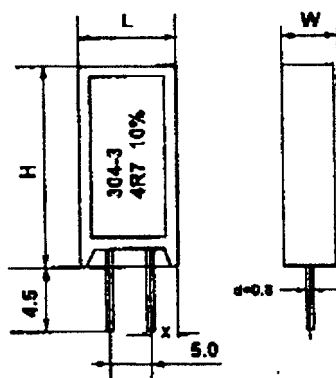
344-096 to 344-310

**VERTICAL POWER
WIRE WOUND RESISTOR****SERIES KWV**

- ☐ USES SMALL AREA OF PCB
- ☐ FLAME PROOF
- ☐ GOOD PULSE DUTY

**Specifications****CONSTRUCTION**

These resistors are constructed by winding special precision alloy wire continuously and uniformly on to fibreglass. The element is then cut to length and the cap and wire are attached by compression fitting. The resulting element is then potted in high temperature working "cement" which provides mechanical and environmental protection as well as increasing the thermal capacity to permit higher power dissipation. The vertical format allows high density packing on printed circuit boards. Wire pitch centres are standardised on 5 mm (± 0.5)



but are not necessarily symmetrical since the resistor element is placed as near as possible to the centre of the case to improve heat dissipation (see table)

PERFORMANCE**ELECTRICAL**

Standard tolerance	E24	5%(J)
or	E12	10%(K)
Temperature coefficient (ppm/°C depends on resistance value)	-80 to 500	
Continuous working voltage	$\sqrt{P \cdot R}$	
Insulation Resistance	$> 10^4 M\Omega$	
Insulation Volts	2000 V _{RMS}	

ENVIRONMENTAL

Temperature range	-55 °C to 275 °C
Load life drift	$< \pm 3\%$ (avg.)
Short time overload	$< 1\% \pm 0R05$
Temperature cycling	5%
Thermal Shock 25 °C to +125 °C	$< 1\% \pm 0R05$
Damp Heat steady state (40 °C 95% RH)	$< \pm 2\%$
Climatic Category	55/200/56

MECHANICAL

Terminal strength	40N
Leads	Solder plated copper, cropped to length ready for direct insertion to printed circuit board
Solderability (solder globule test)	< 2.5 secs
Marking	Alpha-numeric, type number, resistance value and tolerance.

☒ **Applications**

Power supplies and power applications requiring rugged small resistors, which are completely encapsulated in a flame proof casing. The construction is such that the resistor uses the minimum amount of PCB area whilst still being no higher than a typical smoothing electrolytic capacitor

The wire wound element gives the best performance under transient surge conditions and the high overload pulses frequently encountered during the switch-on period of equipment.

Other resistance values outside the stated range can be made to special order.

☒ **Packing data**

In order to minimise damage in transit the resistors are packed in full boxes in the following quantities and will be supplied in multiples thereof:

302-3	260 pcs
304-3	180 pcs
306-3	180 pcs
308-3	165 pcs
310-3	125 pcs

☒ **Ordering data**

Specify part number, resistance value and tolerance

Example:
304-3 18R 5%

VTM-CN RULZ-3 VTM KWV 02/10/98

Dimensions in mm						
Type	P ₂₅ watts	Range	L ^{±1}	H ^{±1}	W ^{±1}	X
302-3	2.0	0R01-910R	11.0	20.5	7.0	2.3
304-3	3.0	0R15-680R	12.0	25.0	8.0	2.3
306-3	5.0	0R022-880R	13.0	26.0	9.0	3.5
308-3	7.0	0R033-1K5	13.0	39.0	9.5	3.5
310-3	10.0	0R047-2K0	13.0	51.0	9.5	3.5

Power Wirewound Resistors

344096 → 344-310

vertical, glass fibre core, ceramic case

Technical specifications

Types		302	304	306	308
Styles		—	—	—	—
Dimensions	mm	see list, next page			
Rated power P_{70} (solder joint 110°C)	W	0,8	1,0	1,2	2,5
Resistance range (applic. E-series)	Ω	R10...1K2	R10...2K4	R10...9K1	R10...15K
Tolerances	%	E24 (5%), E12 (10%) $\pm 5, \pm 10$			
Temperature coefficient	$10^{-6}K^{-1}$	$-80 \dots +500$			
Max. cont. work. voltage	V_{RMS}	$\sqrt{P_{70} \cdot R}$ for all styles			
Thermal resistance	KW^{-1}	280°C/ P_{70} max			
Insulation voltage	V_{RMS}	2000			
Insulation resistance	Ω	$> 10^4 M$			
Climatic category	—	55/200/56			
Temperature range	°C	$-55 \dots 275$			
Derating	—	linear from 70°C to 275°C (OW)			
Failure rate (total failure, 9s max., 60% conf. lev.)	$10^{-9}h^{-1}$	appr. 100, depends on value			
Load life (P_{70} , 70°C, 1000 hrs)	%	+ 3,0 average			
Damp heat, steady state (40°C, 93% r.h., 56 d)	%	$\pm 2,0$			
Climatic sequence (IEC 115 - 1/23)	%	$\pm 2,0$			
Terminal strength-	%	$\pm 1,0$			
Terminal tensile strength	N	50			
Resistance to sold. heat (260°C, 10 s, 3 mm)	%	$\pm 0,2$ typ.			
Solderability	s	2,5 Flowtime, Solderglobule test, IEC 68-2-20T			

Ordering-number

e.g. 304-3, 3R3, 5%, V0

Packaging-units: bulk

240 pcs

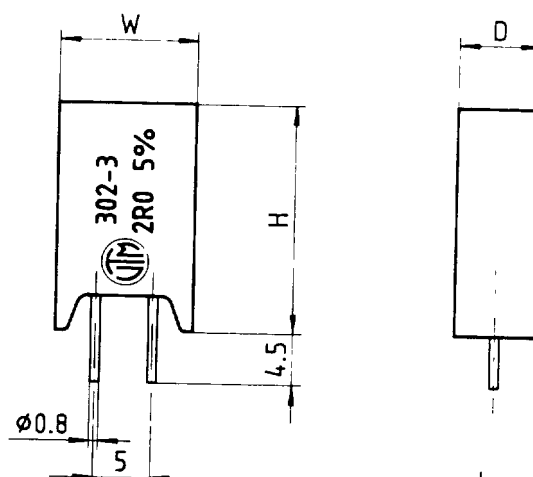
200 pcs

180 pcs

120 pcs

(V0)

Dimensions:



	302	304	306	308
W [mm]	12	12	12	12
H [mm]	20	25	30	37
D [mm]	7	7	8	9

Marking:

Printed in clear

Temperature rise:
(solder joint)

