



- Power Rating 5 to 300Watts
- All Welded Construction
- Resistances from 0.005 to 250kOhms
- Tolerance to $\pm 0.01\%$
- High Overload and Pulse Handling
- Low TCR: $\pm 20\text{ppm/K}$ Standard
- Four Terminal Versions Available



RoHS*
COMPLIANT

SPECIFICATIONS

Type	MIL-R-39009 MIL-R-18546 Style	Power Rating (W @ 25°C)			Resistance Range ¹
		Commercial	MIL	Free Air	
UAL-5	RER-60 / RE-60	7.5 ^a	5 ^a	4.5	0.01 to 22K
UAL-10	RER-65 / RE-65	12.5 ^a	10 ^a	7.5	0.01 to 47K
UAL-25	RER-70 / RE-70	25 ^b	20 ^b	12	0.01 to 90K
UAL-50	RER-75 / RE-75	50 ^c	30 ^c	20	0.01 to 250K
UAL-100	RER-77 / RE-77	100 ^d	75 ^d	40	0.01 to 50K
UAL-180	-	180 ^d	-	-	0.01 to 50K
UAL-250	RER-80 / RE-80	250 ^d	120 ^d	100	0.01 to 50K
UAL-300	-	300 ^e	-	75	0.005 to 100K

¹ For non-inductive windings, divide maximum resistance by 2

^a Heatsink Required : 0.040 [1.0] Alum. Plate, 129 in² [832 cm²] or equiv.

^b Heatsink Required : 0.040 [1.0] Alum. Plate, 167 in² [1077 cm²] or equiv.

^c Heatsink Required : 0.059 [1.5] Alum. Plate, 291 in² [1877 cm²] or equiv.

^d Heatsink Required : 0.125 [3.2] Alum. Plate, 294 in² [1896 cm²] or equiv.

^e Heatsink Required : 0.125 [3.2] Alum. Plate, 895 in² [5780 cm²] or equiv.

Ordering Information

For Non-Inductive Windings / insert the letter "N" (i.e. UALN-25)

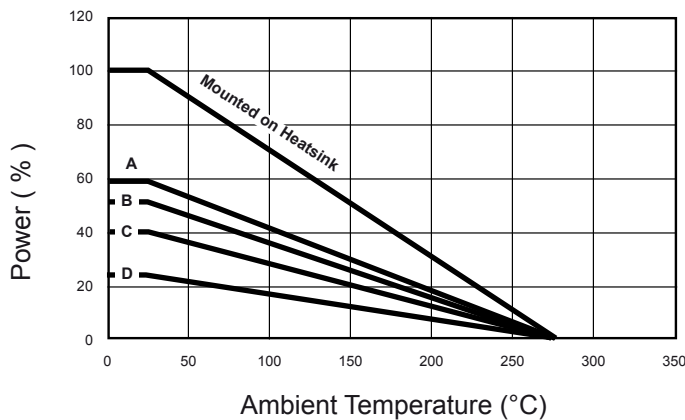
Part Number - Resistance - Tolerance - TCR (If not standard)

Example: UAL-25 10 Ohm 1%

SPECIFICATIONS (continued)

Specification	Value
Tolerances	±0.01% to ±10% (1% Standard)
Temperature Coefficient	>10Ω : ±20ppm/K 1Ω to 10Ω : ±50ppm/K <1Ω : Call Factory
Temperature Range	-55°C to +275°C
Dielectric Strength	1500 VAC
Constuction	Centerless ground ceramic core Tinned copper or copperweld leads High-temperature epoxy molding Compound Anodized aluminum housing All welded terminations
Environmental Performance (MIL-STD 202)	ΔR
Dielectric	±0.2% + 0.05Ω
Load Life	±1% + 0.05Ω
Storage	±0.2% + 0.05Ω
Moisture Resistance	±0.2% + 0.05Ω
Thermal Shock	±0.2% + 0.05Ω
5X Overload (5s)	±0.2% + 0.05Ω
Shock	±0.1% + 0.05Ω
Vibration	±0.1% + 0.05Ω

Power Derating Curve



Free-air Derating

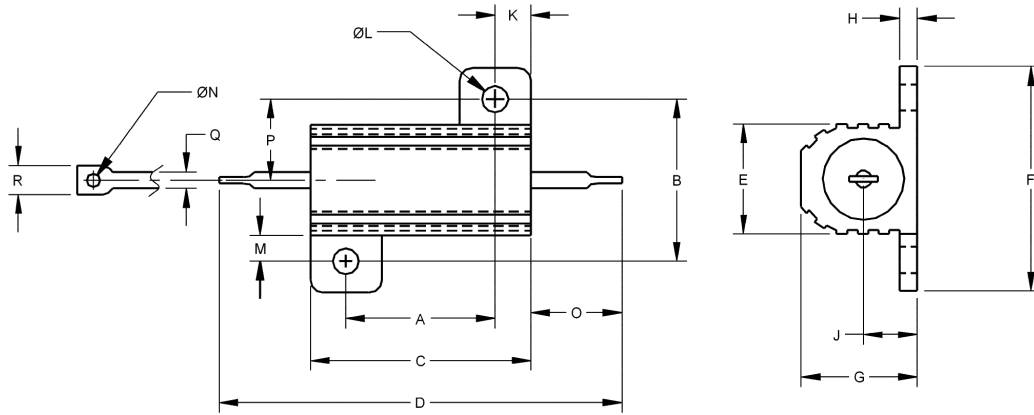
A : UAL-5, UAL-10

B : UAL-25

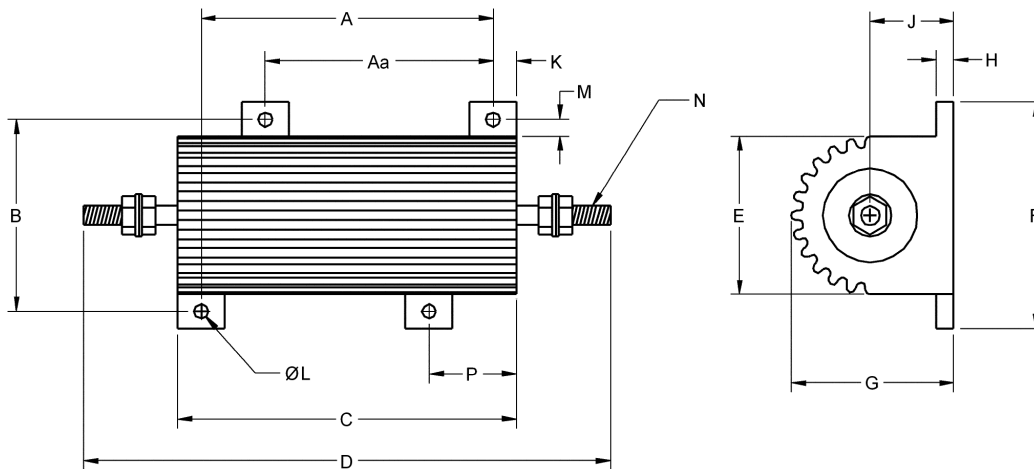
C : UAL-50, UAL-100, UAL-250

D : UAL-300

Dimensions

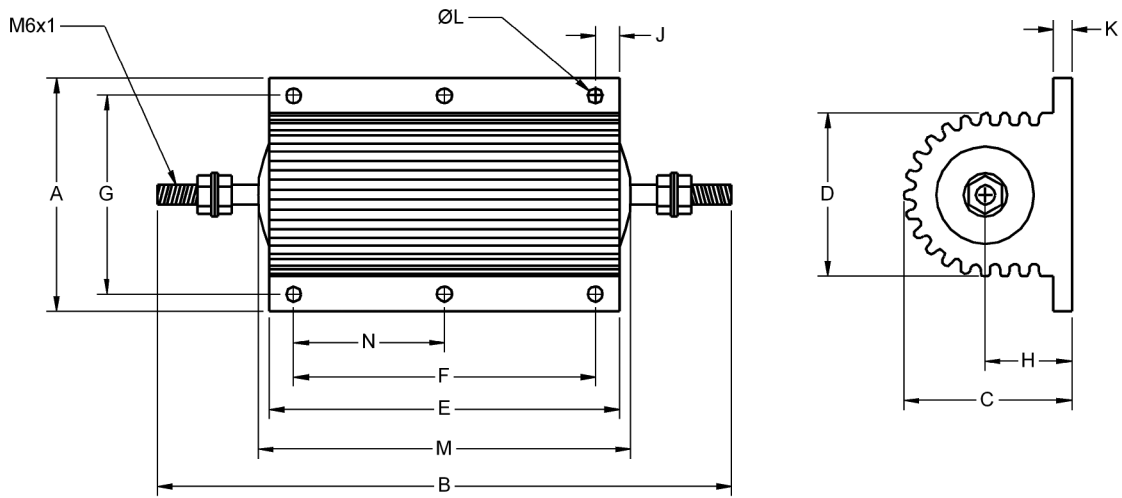


Type	A	B	C	D	E	F	G	H	J	K	L	M	N	O	P	Q	R
	±0.005 [±0.13]	±0.005 [±0.13]	±0.031 [±0.8]	±0.062 [±1.6]	±0.015 [±0.4]	±0.015 [±0.4]	±0.015 [±0.4]	±0.010 [±0.25]	±0.010 [±0.25]	±0.010 [±0.25]	±0.005 [±0.13]	±0.015 [±0.4]	±0.005 [±0.13]	±0.062 [±1.6]	±0.031 [±0.8]	±0.002 [±0.05]	±0.031 [±0.8]
UAL-5	0.444 [11.3]	0.490 [12.4]	0.600 [15.2]	1.125 [28.5]	0.334 [8.5]	0.646 [16.4]	0.320 [8.1]	0.065 [1.7]	0.140 [3.6]	0.078 [2.0]	0.093 [2.4]	0.078 [2.0]	0.050 [1.3]	0.266 [6.8]	0.245 [6.2]	0.051 [1.30]	0.085 [2.2]
UAL-10	0.562 [14.3]	0.625 [15.9]	0.750 [19.1]	1.375 [35.0]	0.430 [10.9]	0.800 [20.3]	0.400 [10.2]	0.075 [1.9]	0.190 [4.8]	0.093 [2.4]	0.093 [2.4]	0.102 [2.6]	0.086 [2.2]	0.312 [7.9]	0.312 [7.9]	0.081 [2.06]	0.140 [3.6]
UAL-25	0.719 [18.3]	0.781 [19.8]	1.062 [27.0]	1.938 [49.2]	0.530 [13.5]	1.080 [27.4]	0.560 [14.2]	0.085 [2.2]	0.260 [6.6]	0.172 [4.4]	0.125 [3.2]	0.125 [3.2]	0.086 [2.2]	0.438 [11.1]	0.391 [9.9]	0.081 [2.06]	0.140 [3.6]
UAL-50	1.563 [39.7]	0.844 [21.4]	1.968 [50.0]	2.781 [70.6]	0.615 [15.6]	1.140 [29.0]	0.615 [15.6]	0.085 [2.2]	0.300 [7.6]	0.196 [5.0]	0.125 [3.2]	0.125 [3.2]	0.086 [2.2]	0.438 [11.1]	0.422 [10.7]	0.081 [2.06]	0.140 [3.6]



Type	A	Aa	B	C	D	E	F	G	H	J	K	L	M	N	P	Mtg. Screw
	±0.005 [±0.13]	±0.005 [±0.13]	±0.005 [±0.13]	±0.031 [±0.8]	±0.062 [±1.6]	±0.015 [±0.4]	±0.015 [±0.4]	±0.015 [±0.4]	±0.010 [±0.25]	±0.015 [±0.4]	±0.015 [±0.4]	±0.005 [±0.13]	±0.015 [±0.4]		±0.015 [±0.4]	
UAL-100	2.750 [69.9]	-	2.250 [57.2]	3.500 [88.9]	5.480 [139]	1.800 [45.7]	2.810 [71.4]	1.750 [44.5]	0.188 [4.8]	0.800 [20.3]	0.375 [9.5]	0.188 [4.8]	0.225 [5.7]	12-24	-	(2) #8
UAL-180	2.750 [69.9]	-	2.500 [63.5]	3.500 [88.9]	5.480 [139]	2.100 [55.3]	3.000 [76.2]	2.190 [55.6]	0.250 [6.4]	0.950 [24.1]	0.375 [9.5]	0.188 [4.8]	0.200 [5.1]	12-24	-	(2) #8
UAL-250	3.875 [98.4]	3.000 [76.2]	1.062 [27.0]	4.500 [114]	7.000 [178]	2.100 [55.3]	3.00 [76.2]	2.190 [55.6]	0.250 [6.4]	1.000 [25.4]	0.312 [7.9]	0.188 [4.8]	0.200 [5.1]	1/4-20	1.188 [30.7]	(4) #8

Dimensions (continued)



Type	A MAX	B MAX	C MAX	D MAX	E MAX	F ±0.010 [±0.3]	G ±0.010 [±0.3]	H MAX	J MAX	K MAX	L ±0.010 [±0.3]	M MAX	N ±0.010 [±0.3]
UAL-300	2.854 [72.5]	7.260 [184.4]	1.646 [41.8]	1.791 [45.5]	5.028 [127.7]	4.094 [104.0]	2.323 [59.0]	0.807 [20.5]	0.488 [12.4]	0.217 [5.5]	0.260 [6.6]	5.567 [141.4]	2.047 [52.0]

Disclaimer

ALL PRODUCTS, PRODUCT SPECIFICATIONS AND DATA ARE SUBJECT TO CHANGE WITHOUT NOTICE.

Vishay Precision Group, Inc., its affiliates, agents, and employees, and all persons acting on its or their behalf (collectively, "Vishay Precision Group"), disclaim any and all liability for any errors, inaccuracies or incompleteness contained herein or in any other disclosure relating to any product.

The product specifications do not expand or otherwise modify Vishay Precision Group's terms and conditions of purchase, including but not limited to, the warranty expressed therein.

Vishay Precision Group makes no warranty, representation or guarantee other than as set forth in the terms and conditions of purchase. **To the maximum extent permitted by applicable law, Vishay Precision Group disclaims (i) any and all liability arising out of the application or use of any product, (ii) any and all liability, including without limitation special, consequential or incidental damages, and (iii) any and all implied warranties, including warranties of fitness for particular purpose, non-infringement and merchantability.**

Information provided in datasheets and/or specifications may vary from actual results in different applications and performance may vary over time. Statements regarding the suitability of products for certain types of applications are based on Vishay Precision Group's knowledge of typical requirements that are often placed on Vishay Precision Group products. It is the customer's responsibility to validate that a particular product with the properties described in the product specification is suitable for use in a particular application.

No license, express, implied, or otherwise, to any intellectual property rights is granted by this document, or by any conduct of Vishay Precision Group.

The products shown herein are not designed for use in life-saving or life-sustaining applications unless otherwise expressly indicated. Customers using or selling Vishay Precision Group products not expressly indicated for use in such applications do so entirely at their own risk and agree to fully indemnify Vishay Precision Group for any damages arising or resulting from such use or sale. Please contact authorized Vishay Precision Group personnel to obtain written terms and conditions regarding products designed for such applications.

Product names and markings noted herein may be trademarks of their respective owners.