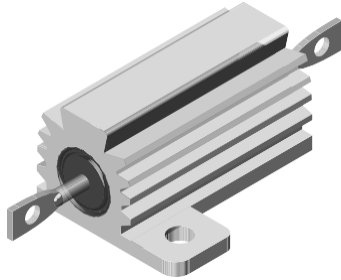


## Wirewound Resistors, Military, MIL-PRF-18546 Qualified, Type RE, Aluminum Housed, Chassis Mount


**FEATURES**

- Molded construction for total environmental protection
- Complete welded construction
- Qualified to MIL-PRF-18546
- Available in non-inductive styles (type N) with Ayrton-Perry winding for lowest reactive components
- Mounts on chassis to utilize heat-sink effect
- Excellent stability in operation (< 1 % change in resistance)

STANDARD ELECTRICAL SPECIFICATIONS					
MILITARY MODEL	VISHAY REFERENCE MODEL	POWER RATING $P_{25^\circ\text{C}}$ W	RESISTANCE RANGE $\Lambda$	TOLERANCE $\pm\%$	WEIGHT (typical) g
RE60G	RH005	5	0.10 to 3.32K	1	3
RE60N	NH005	5	1.0 to 1.65K	1	3.3
RE65G	RH010	10	0.10 to 5.62K	1	6
RE65N	NH010	10	1.0 to 2.8K	1	8.8
RE70G	RH025	20	0.10 to 12.1K	1	13
RE70N	NH025	20	1.0 to 6.04K	1	16.5
RE75G	RH050	30	0.10 to 39.2K	1	28
RE75N	NH050	30	1.0 to 19.6K	1	35
RE77G	RH100	75	0.05 to 29.4K	1	350
RE77N	NH100	75	1.0 to 14.7K	1	385
RE80G	RH250	120	0.10 to 35.7K	1	630
RE80N	NH250	120	1.0 to 17.4K	1	690

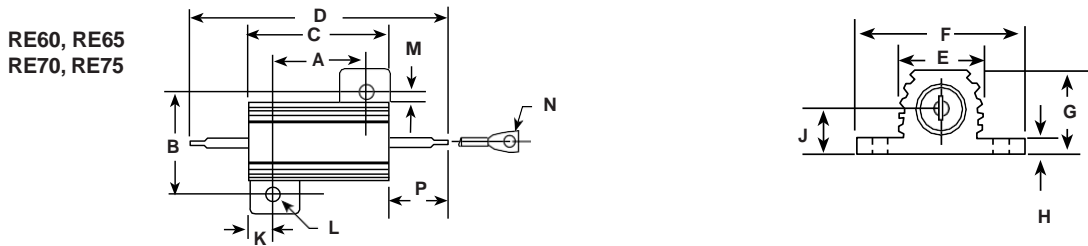
TECHNICAL SPECIFICATIONS		
PARAMETER	UNIT	RE RESISTOR CHARACTERISTICS
Temperature Coefficient	ppm/°C	$\pm 20$ for 10 $\Lambda$ and above; $\pm 50$ for 1 $\Lambda$ to 9.9 $\Lambda$ ; $\pm 100$ for 0.1 $\Lambda$ to 0.99 $\Lambda$
Maximum Working Voltage	V	$(P \times R)^{1/2}$
Insulation Resistance	$\Lambda$	10 000 M $\Lambda$ minimum dry, 1000 M $\Lambda$ minimum after moisture test
Solderability	-	MIL-PRF-18546 type - meets requirements of ANSI J-STD-002
Operating Temperature Range	°C	-55 to +250

MILITARY PART NUMBER INFORMATION			
Military Part Numbering example: RE77N1302J01			
R	E	7	7
N	1	3	0
2	J	0	1
<b>MIL TYPE</b> RE60 RE65 RE70 RE75 RE77 RE80	<b>CHARACTERISTIC</b> G = inductive N = non-inductive	<b>RESISTANCE VALUE</b> 3 digit significant figure, followed by a multiplier  49R9 = 49.9 $\Lambda$ 1000 = 100 $\Lambda$ 1001 = 1000 $\Lambda$ 1302 = 13 000 $\Lambda$	<b>PACKAGING CODE</b> C02 = card pack (RE60 to RE75) J01 = skin pack

**Note**

- Only tolerance available for RE type is  $\pm 1\%$

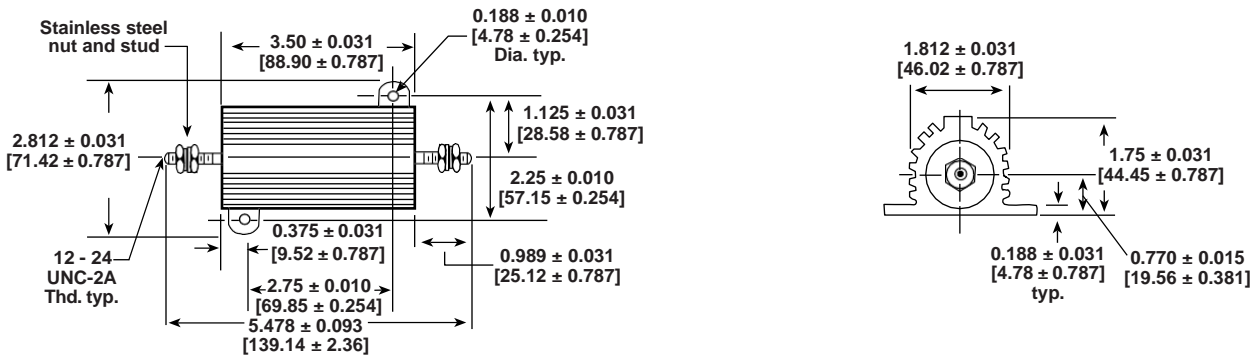
**DIMENSIONS** in inches [millimeters]



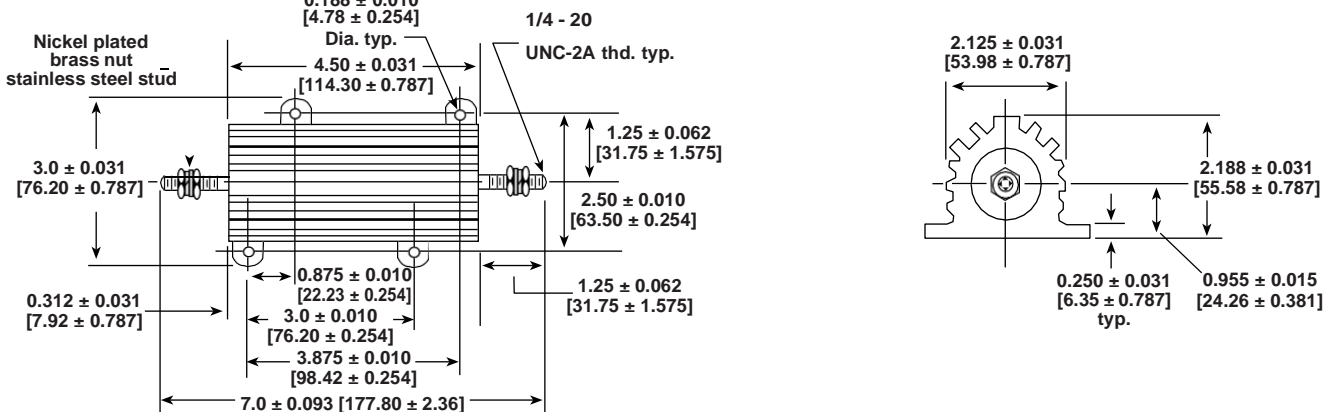
MILITARY MODEL	DIMENSIONS in inches [millimeters]													
	A	B	C	D	E	F	G	H	J	K	L	M	N	P
RE60	0.444	0.490	0.600	1.125	0.334	0.646	0.320	0.065	0.133	0.078	0.093	0.078	0.050	0.266
	± 0.005	± 0.005	± 0.030	± 0.062	± 0.015	± 0.015	± 0.015	± 0.010	± 0.010	± 0.010	± 0.005	± 0.015	± 0.005	± 0.062
	[11.28]	[12.45]	[15.24]	[28.58]	[8.48]	[16.41]	[8.13]	[1.65]	[3.38]	[1.98]	[2.36]	[1.98]	[1.27]	[6.76]
RE65	0.562	0.625	0.750	1.375	0.420	0.800	0.390	0.075	0.165	0.093	0.094	0.102	0.085	0.312
	± 0.005	± 0.005	± 0.031	± 0.062	± 0.015	± 0.015	± 0.015	± 0.010	± 0.010	± 0.010	± 0.005	± 0.015	± 0.005	± 0.062
	[14.27]	[15.88]	[19.05]	[34.93]	[10.67]	[20.32]	[9.91]	[1.91]	[4.19]	[2.36]	[2.39]	[2.59]	[2.16]	[7.92]
RE70	0.719	0.781	1.062	1.938	0.550	1.080	0.546	0.075	0.231	0.172	0.125	0.115	0.085	0.438
	± 0.005	± 0.005	± 0.031	± 0.062	± 0.015	± 0.015	± 0.015	± 0.010	± 0.010	± 0.010	± 0.005	± 0.015	± 0.005	± 0.062
	[18.26]	[19.84]	[26.97]	[49.23]	[13.97]	[27.43]	[13.87]	[1.91]	[5.87]	[4.37]	[3.18]	[2.92]	[2.16]	[11.13]
RE75	1.562	0.844	1.968	2.781	0.630	1.140	0.610	0.088	0.260	0.196	0.125	0.107	0.085	0.438
	± 0.005	± 0.005	± 0.031	± 0.062	± 0.015	± 0.015	± 0.015	± 0.010	± 0.010	± 0.010	± 0.005	± 0.015	± 0.005	± 0.062
	[39.67]	[21.44]	[49.99]	[70.64]	[16.00]	[28.96]	[15.49]	[2.24]	[6.60]	[4.98]	[3.18]	[2.72]	[2.16]	[11.13]

**DIMENSIONS** in inches [millimeters]

RE77



RE80





POWER RATING

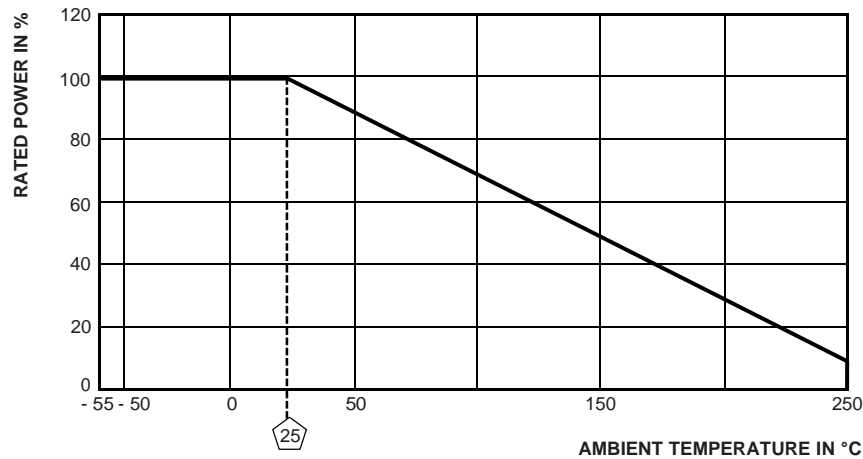
Vishay RE resistor wattage ratings are based on mounting to the following heat sink:

- RE60 and RE65: 4" x 6" x 2" x 0.040" thick aluminum chassis
- RE70 and RE75: 5" x 7" x 2" x 0.040" thick aluminum chassis
- RE77 and RE80: 7" x 9" x 2" x 0.060" thick aluminum chassis

FREE AIR POWER RATING						
MILITARY MODEL	RE60	RE65	RE70	RE75	RE77	RE80
W at 25 °C	3	6	8	10	30	75

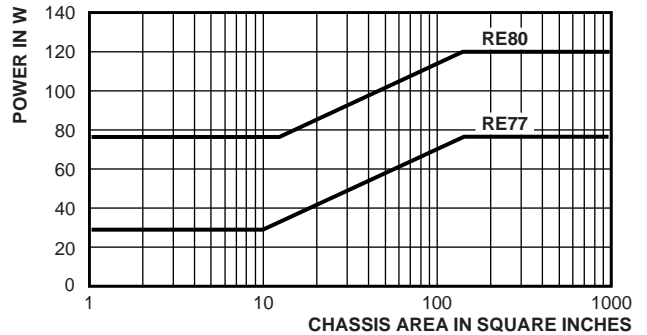
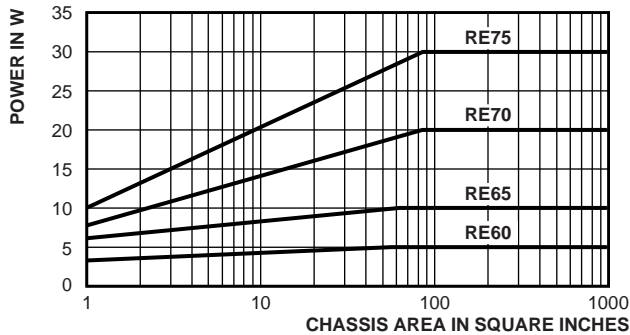
AMBIENT TEMPERATURE DERATING

Derating is required for ambient temperatures above 25 °C when mounted to specified heat sink, see the following graph.



REDUCED HEAT SINK DERATING

Derating is also required when recommended heat sink area is reduced.





MATERIAL SPECIFICATIONS

Element: copper-nickel alloy or nickel-chrome alloy, depending on resistance value

Core: ceramic, steatite or alumina, depending on physical size

Encapsulant: silicone molded construction

Housing: aluminum with hard anodic coating

End Caps: stainless steel

Standard Terminals: For RE77 and RE80 terminals are threaded stainless steel. All others are 60/40 tin/lead (Sn/Pb) w/nickel underplate on copper clad steel core terminal.

Part Marking: Dale, model, wattage, value, tolerance, date code

NON-INDUCTIVE (TYPE N)

Models of equivalent physical and electrical specifications are available with non-inductive (Ayrton-Perry) winding. They are identified by substituting the letter N for G in the model number (RE60N, for example).

PERFORMANCE		
TEST	CONDITIONS OF TEST	TEST LIMITS
Thermal Shock	Rated power applied until thermally stable, then a minimum of 15 min at -55 °C	± (0.5 % + 0.05 Δ) ΔR
Short Time Overload	5 x rated power for 5 s	± (0.5 % + 0.05 Δ) ΔR
Dielectric Withstanding Voltage	1000 V <sub>RMS</sub> for RE60, RE65 and RE70; 2000 V <sub>RMS</sub> for RE75; 4500 V <sub>RMS</sub> for RE77 and RE80; duration 1 min	± (0.2 % + 0.05 Δ) ΔR
Temperature	250 °C for 2 h	± (0.5 % + 0.05 Δ) ΔR
Moisture Resistance	MIL-STD-202 method 106, 7b not applicable	± (1.0 % + 0.05 Δ) ΔR
Shock, Specified Pulse	MIL-STD-202 method 213, 100 g's for 6 ms, 10 shocks	± (0.2 % + 0.05 Δ) ΔR
Vibration, High Frequency	Frequency varied 10 Hz to 2000 Hz, 20 g peak, 2 directions 6 h each	± (0.2 % + 0.05 Δ) ΔR
Load Life	1000 h at rated power, +25 °C, 1.5 h "ON", 0.5 h "OFF"	± (1.0 % + 0.05 Δ) ΔR
Terminal Strength	30 s, 5 pound pull test for RE60 and RE65, 10 pound pull test for other sizes; torque test - 24 pound inch for RE77 and 32 pound inch for RE80	± (0.2 % + 0.05 Δ) ΔR



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