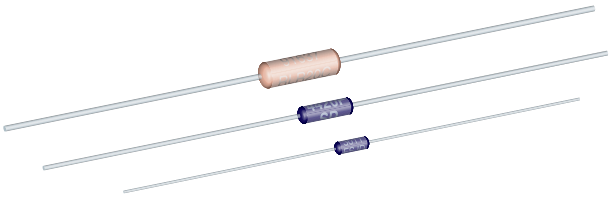
Metal Film Resistors, Axial, Industrial / High Reliability, Precision



FEATURES

- Same materials and construction as the non-hermetic MIL-PRF-55182 resistors
- 100 % stabilization and screening tests. Undergoes group A testing to MIL-PRF-55182 (thermal shock, 1 h overload, short time overload, DC resistance) prior to shipping.
- Very low noise (-40 dB)
- Controlled temperature coefficient
- Epoxy coating provides superior moisture protection
- Standard lead is solderable and weldable
- Traceability of materials and processing
- Vishay Dale has complete capability to develop specific reliability programs designed to customer requirements
- Material categorization: for definitions of compliance please see www.vishay.com/doc?99912

Pb-free

e3

RoHS COMPLIANT

STANDARD ELECTRICAL SPECIFICATIONS

GLOBAL MODEL	POWER RATING $P_{70\,°C}$ W	POWER RATING $P_{125\,°C}$ W	MAXIMUM WORKING VOLTAGE (1) V	RESISTANCE RANGE Ω	TOLERANCE (2) ± %	TEMPERATURE COEFFICIENT ± ppm/°C
ERC50..500	0.10	0.05	200	10 to 796K	0.1, 0.5, 1	25, 50, 100
ERC55..500	0.125	0.10	200	10 to 2M	0.1, 0.5, 1	25, 50, 100
ERC55..600	0.25	0.125	250	10 to 3.01M	0.1, 0.5, 1	25, 50, 100
ERC65..500	0.50	0.25	300	10 to 3.01M	0.1, 0.5, 1	25, 50, 100
ERC70..500	0.75	0.50	350	10 to 3.01M	0.1, 0.5, 1	25, 50, 100

Notes

(1) Continuous working voltage shall be $\sqrt{P \times R}$ or maximum working voltage, whichever is less.

(2) Tolerance of ± 0.1 % is available only in 50 ppm and 25 ppm temperature coefficients.

TECHNICAL SPECIFICATIONS

PARAMETER	UNIT	CONDITION
Voltage Coefficient, Max.	ppm/V	5/V when measured between 10 % and full rated voltage
Dielectric Strength	V_{AC}	ERC50-500, ERC55-500 and ERC55-600 = 450; ERC65-500 and ERC70-500 = 900
Insulations Resistance	Ω	≥ 10^{11} dry; ≥ 10^{9} after moisture test
Operating Temperature Range	°C	-65 to +175
Terminal Strength	lb	2 lb pull test on ERC50-500, ERC55-500, ERC55-600 and ERC65-500; 4.5 lb pull test on ERC70-500
Solderability		Continuous satisfactory coverage when tested in accordance with MIL-STD-202, method 208
Weight	g	ERC50-500 = 0.11; ERC55-500 = 0.35; ERC55-600 = 0.35; ERC65-500 = 0.84; ERC70-500 = 1.06

For technical questions, contact: ff2aresistors@vishay.com

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GLOBAL PART NUMBER INFORMATION

New Global Part Numbering: ERC553K0100FHEA500 (preferred part numbering format)

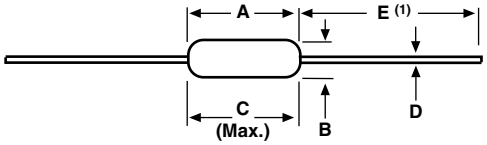
E	R	C	5	5	3	K	0	1	0	0	F	H	E	A	5	0	0

GLOBAL MODEL	RESISTANCE VALUE	TOLERANCE CODE	TEMPERATURE COEFFICIENT	PACKAGING	SPECIAL
ERC50 **ERC55** **ERC65** **ERC70**	**R** = Ω **K** = kΩ **M** = MΩ **10R000** = 10 Ω **21K500** = 21.5 kΩ **3M0100** = 3.01 MΩ	**B** = ± 0.1 % **D** = ± 0.5 % **F** = ± 1 %	**E** = ± 25 ppm **H** = ± 50 ppm **K** = ± 100 ppm	**EK** = lead (Pb)-free, bulk **EA** = lead (Pb)-free, T/R (full) **EB** = lead (Pb)-free, T/R (1000 pieces)	(dash number) **500** = industrial (all sizes) **600** = industrial (55 only)

Note

- For additional information on packaging, refer to the Through Hole Resistor Packaging document (www.vishay.com/doc?31544).

DIMENSIONS in inches (millimeters)



Note

(1) Lead length for product in bulk pack. For product supplied in Tape and Reel, the actual lead length would be based on the body size, tape spacing and lead trim.

VISHAY DALE MODEL	A	B	C (MAX.)	D	E
ERC50-500	0.150 ± 0.020 (3.81 ± 0.51)	0.070 ± 0.010 (1.78 ± 0.25)	0.187 (4.75)	0.016 ± 0.002 (0.41 ± 0.05)	1.25 ± 0.266 (31.75 ± 6.76)
ERC55-500	0.250 + 0.031 - 0.046 (6.35 + 0.79 - 1.17)	0.094 ± 0.012 (2.39 ± 0.30)	0.300 (7.62)	0.025 ± 0.002 (0.64 ± 0.05)	1.50 ± 0.125 (38.1 ± 3.18)
ERC55-600	0.280 ± 0.020 (7.11 ± 0.51)	0.097 ± 0.012 (2.46 ± 0.30)	0.350 (8.89)	0.025 ± 0.002 (0.64 ± 0.05)	1.50 ± 0.125 (38.1 ± 3.18)
ERC65-500	0.562 ± 0.031 (14.27 ± 0.79)	0.180 ± 0.015 (4.57 ± 0.38)	0.687 (17.45)	0.025 ± 0.002 (0.64 ± 0.05)	1.50 ± 0.125 (38.1 ± 3.18)
ERC70-500	0.562 ± 0.031 (14.27 ± 0.79)	0.180 ± 0.015 (4.57 ± 0.38)	0.687 (17.45)	0.032 ± 0.002 (0.81 ± 0.05)	1.50 ± 0.125 (38.1 ± 3.18)

MATERIAL SPECIFICATIONS

Element	Vacuum-deposited nickel-chrome alloy
Core	Fire-cleaned high purity ceramic
Encapsulation	Specially formulated epoxy compound
Termination	Standard lead material is solder-coated copper. Solderable and weldable per MIL-STD-1276, type C

POWER RATING

Power ratings are based on the following two conditions:
1. ± 2.0 % maximum ΔR in 10 000 h load life
2. +175 °C maximum operating temperature

APPLICABLE MIL-SPECIFICATIONS

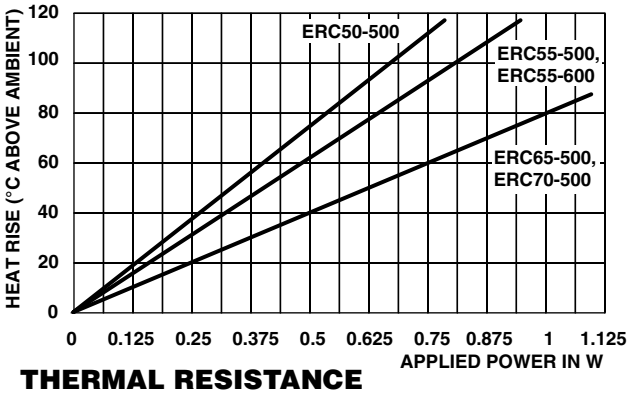
MIL-PRF-55182:

With the exception of the MIL spec's 3 % lead (Pb) requirement, the industrial ERC series would meet the electrical, environmental and dimensional requirements of MIL-PRF-55182.

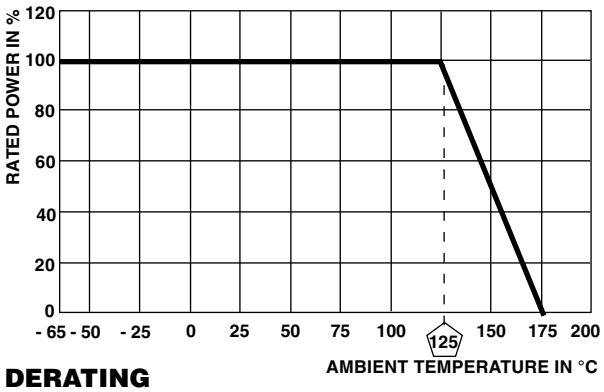
For technical questions, contact: ff2aresistors@vishay.com

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Vishay Dale ERC resistors have an operating temperature range of -65 °C to +175 °C. They must be derated according to the following curve:



THERMAL RESISTANCE



DERATING

MARKING

Partial model (for 50 size): C = ERC

Tolerance (for 50 size): B = 0.1 %, D = 0.5 %, F = 1 %

Temperature coefficient: T1 = 100 ppm, T2 = 50 ppm, T9 = 25 ppm

ERC50-500: (4 lines)

C500	Partial model and dash number
33K2	Value
FT1	Tolerance and TC
1548	4-digit date code

ERC55-500, ERC55-600: (4 lines)

55-500	Size and dash number
1.21M	Value
0.5 % T9	Tolerance and TC
1532	4-digit date code

ERC65-500, ERC70-500: (5 lines)

ERC65	Full model and size
-500	Dash number
7.68K	Value
1 % T2	Tolerance and TC
1516	4-digit date code

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