



MILITARY FILM LEADED RESISTORS

Resistive Products



An Overview of Vishay Military Film Leaded Resistors



KEY BENEFITS

- A wide range of power ratings (0.05 W to 2 W)
- A wide resistance range (1 Ω to 22 M Ω)
- Low/high temperature performance (- 65 $^{\circ}\text{C}$ to + 175 $^{\circ}\text{C}$)
- Tight tolerances (down to 0.1 %)
- Constructed using Metal Film resistive elements
- Very low noise: - 40 dB
- MIL-PRF-39017, MIL-PRF-55182, MIL-PRF-22684 and MIL-R-10509 qualified

RESOURCES

- For technical questions on Dale Metal Film products, contact ff2aresistors@vishay.com
- For technical questions on BCC Metal Film products, contact leadedresistors@vishay.com

Resistors - Wide Range of Power Ratings

One of the World's Largest Manufacturers of
Discrete Semiconductors and Passive Components



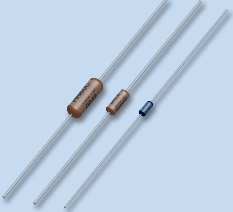

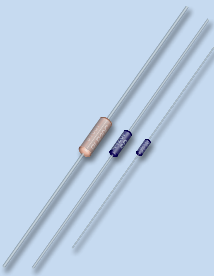



MILITARY FILM LEADED RESISTORS

Resistive Products



Resistors - Wide Range of Power Ratings

Model	Product	Wattage Rating	Resistance Range	Tolerance	Part Number Definition
Non-Established Reliability					
 <p>MIL-R-10509</p>	RN50C / RN50E (CMF-50)	0.05	10 Ω – 100 KΩ	0.1 %, 0.25 %, 0.5 %, 1 %	<u>RN</u> <u>60</u> <u>D</u> <u>3483</u> <u>F</u> 1 2 3 4 5 1. Detail specification number 2. Size 3. Temperature coefficient (E = ± 25 ppm/°C, C = ± 50 ppm/°C, *D = + 200 ppm/°C – 500 ppm/°C) 4. Resistance value 5. Tolerance (B = 0.1 %, C = 0.25 %, D = 0.5 %, F = 1 %)
	RN55C / RN55E (CMF-55)	0.10	49.9 Ω – 100 KΩ		
	RN55D (CMF-55)	0.125	10 Ω – 301 KΩ		
	RN60C / RN60E (CMF-60)	0.125	49.9 Ω – 499 KΩ		
	RN60D (CMF-60)	0.25	10 Ω – 1 MΩ		
	RN65C / RN65E (CMF-65)	0.25	49.9 Ω – 1 MΩ		
	RN65D (CMF-65)	0.50	10 Ω – 2 MΩ		
	RN70C / RN70E (CMF-70)	0.50	24.9 Ω – 1 MΩ		
RN70D (CMF-70)	0.75	10 Ω – 2.49 MΩ			
 <p>MIL-PRF-22684</p>	RL07 (CMF-07)	0.25	51 Ω – 150 KΩ	2 %, 5 %	<u>RL</u> <u>07</u> <u>S</u> <u>471</u> <u>J</u> 1 2 3 4 5 1. Detail specification number 2. Size 3. Lead (S = solderable) 4. Resistance value 5. Tolerance (G = 2 %, J = 5 %)
	RL20 (CMF-20)	0.50	4.3 Ω – 470 KΩ		
Established Reliability					
 <p>MIL-PRF-39017</p>	RLR05 (ERL-05)	0.125	4.7 Ω – 1 MΩ	1 %, 2 %	<u>RLR</u> <u>07</u> <u>C</u> <u>3001</u> <u>F</u> <u>R</u> 1 2 3 4 5 6 1. Detail specification number 2. Size 3. Lead material (C = solderable/weldable) 4. Resistance value 5. Tolerance (F = 1 %, G = 2 %) 6. Failure rate level (reference current MIL-PRF-39017 QPL List)
	RLR07 (ERL-07)	0.25	1 Ω – 10 MΩ		
	RLR20 (ERL-20)	0.5	4.3 Ω – 3.01 MΩ		
	RLR32 (ERL-32)	1	1 Ω – 2.7 MΩ		
 <p>MIL-PRF-55182 (Non-Hermetically Sealed)</p>	RNC50 / RNR50 (ERC-50)	0.05 / 0.1	10 Ω – 796 KΩ	0.1 %, 0.5 %, 1 %	<u>RNC</u> <u>55</u> <u>H</u> <u>2152</u> <u>F</u> <u>R</u> 1 2 3 4 5 6 1. Detail specification number RNC = solderable/weldable leads RNR = solderable only leads 2. Size 3. Temperature coefficient (J = ± 25 ppm/°C, H = ± 50 ppm/°C, K = ± 100 ppm/°C) 4. Resistance value 5. Tolerance (B = 0.1 %, D = 0.5 %, F = 1 %) 6. Failure rate level (reference current MIL-PRF-55182 QPL List)
	RNC55 / RNR55 (ERC-55)	0.1 / 0.125	10 Ω – 2 MΩ		
	RNC60 / RNR60 (ERC-55-200)	0.125 / 0.25	10 Ω – 3.01 MΩ		
	RNC65 / RNR65 (ERC-65)	0.25 / 0.5	10 Ω – 3.01 MΩ		
	RNC70 / RNR70 (ERC-70)	0.5 / 0.75	10 Ω – 3.01 MΩ		

For extended values and sizes, consult DSCC drawings 98020, 99011, 98021, 98022 and 97004.

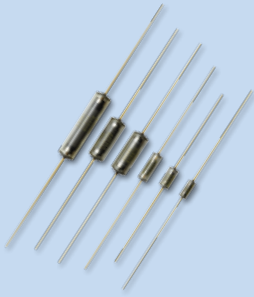
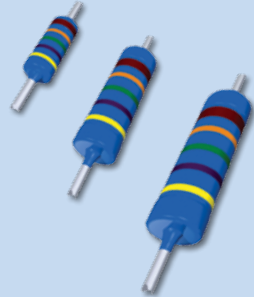


MILITARY FILM LEADED RESISTORS

Resistive Products



Resistors - Wide Range of Power Ratings

Model	Product	Wattage Rating	Resistance Range	Tolerance	Part Number Definition
Established Reliability (cont.)					
MIL-PRF-55182 (cont.) (Hermetically Sealed) 	RNR55 / RNN55 (HDN-55)	0.1 / 0.125	10 Ω – 1.21 MΩ	0.1 %, 0.5 %, 1 %	<u>RNR</u> <u>55</u> <u>C</u> <u>2152</u> <u>B</u> <u>R</u> 1 2 3 4 5 6 1. Detail specification number RNR = solderable only leads RNN = weldable only leads 2. Size 3. Temperature coefficient (E = ± 25 ppm/°C, C = ± 50 ppm/°C) 4. Resistance value 5. Tolerance (B = 0.1 %, D = 0.5 %, F = 1 %) 6. Failure rate level (reference current MIL-PRF-55182 QPL List)
	RNR57 / RNN57 (HDN-57)	0.125 / 0.25	49.9 Ω – 200 KΩ		
	RNR60 / RNN60 (HDN-60)	0.125 / 0.25	10 Ω – 2.49 MΩ		
	RNR65 / RNN65 (HDN-65)	0.25 / 0.5	24.9 Ω – 4.99 MΩ		
	RNR70 / RNN70 (HDN-70)	0.5 / 0.75	24.9 Ω – 4.99 MΩ		
	RNR75 / RNN75 (HDN-75)	1 / 2	49.9 Ω – 1.21 MΩ		
	Established Reliability				
EN140401-806 	MBA/SMA 0204 VG06	0.4	1 Ω – 5.11 MΩ	0.1 %, 1 %	<u>EN140401-806</u> <u>EZ</u> <u>A</u> <u>C</u> <u>287K</u> <u>F</u> <u>E7</u> 1 2 3 4 5 6 7 1. Detail specification number 2. Assessment level 3. Size (A = 0204) 4. Temperature coefficient (C = ± 50 ppm/K, E = ± 15 ppm/K) 5. Resistance value 6. Tolerance (B = ± 0.1 %, F = ± 1 %) 7. Failure rate level according to EN 60115-1, Table ZB.1
	MBB/SMA 0207 VG06	0.6	1 Ω – 10 MΩ	0.1 %, 1 %	<u>EN140401-806</u> <u>EZ</u> <u>B</u> <u>C</u> <u>287K</u> <u>F</u> <u>E7</u> 1 2 3 4 5 6 7 1. Detail specification number 2. Assessment level 3. Size (B = 0207) 4. Temperature coefficient (C = ± 50 ppm/K, E = ± 15 ppm/K) 5. Resistance value 6. Tolerance (B = ± 0.1 %, F = 1 %) 7. Failure rate level according to EN 60115-1, Table ZB.1
	MBE/SMA 0414 VG06	1.0	1 Ω – 21.5 MΩ	0.1 %, 1 %	<u>EN140401-806</u> <u>EZ</u> <u>E</u> <u>C</u> <u>287K</u> <u>F</u> <u>E7</u> 1 2 3 4 5 6 7 1. Detail specification number 2. Assessment level 3. Size (E = 0414) 4. Temperature coefficient (C = ± 50 ppm/K, E = ± 15 ppm/K) 5. Resistance value 6. Tolerance (B = ± 0.1 %, F = ± 1 %) 7. Failure rate level according to EN 60115-1, Table ZB.1



MILITARY FILM LEADED RESISTORS

Resistive Products



Resistors - Wide Range of Power Ratings

WORLDWIDE SALES CONTACTS

THE AMERICAS

UNITED STATES

VISHAY AMERICAS
ONE GREENWICH PLACE
SHELTON, CT 06484
UNITED STATES
PH: +1-402-563-6866
FAX: +1-402-563-6296

ASIA

SINGAPORE

VISHAY INTERTECHNOLOGY ASIA PTE LTD.
37A TAMPINES STREET 92 #07-00
SINGAPORE 528886
PH: +65-6788-6668
FAX: +65-6788-0988

P.R. CHINA

VISHAY CHINA CO., LTD.
15D, SUN TONG INFOPORT PLAZA
55 HUAI HAI WEST ROAD
SHANGHAI 200030
P.R. CHINA
PH: +86-21-5258 5000
FAX: +86-21-5258 7979

JAPAN

VISHAY JAPAN CO., LTD.
SHIBUYA PRESTIGE BLDG. 4F
3-12-22, SHIBUYA
SHIBUYA-KU
TOKYO 150-0002
JAPAN
PH: +81-3-5466-7150
FAX: +81-3-5466-7160

EUROPE

GERMANY

VISHAY ELECTRONIC GMBH
DR.-FELIX-ZANDMAN-PLATZ 1
95100 SELB
GERMANY
PH: +49-9287-71-0
FAX: +49-9287-70435

FRANCE

VISHAY S.A.
199, BD DE LA MADELEINE
06003 NICE, CEDEX 1
FRANCE
PH: +33-4-9337-2727
FAX: +33-4-9337-2726

UNITED KINGDOM

VISHAY LTD.
SUITE 6C, TOWER HOUSE
ST. CATHERINE'S COURT
SUNDERLAND ENTERPRISE PARK
SUNDERLAND SR5 3XJ
UNITED KINGDOM
PH: +44-191-516-8584
FAX: +44-191-549-9556