

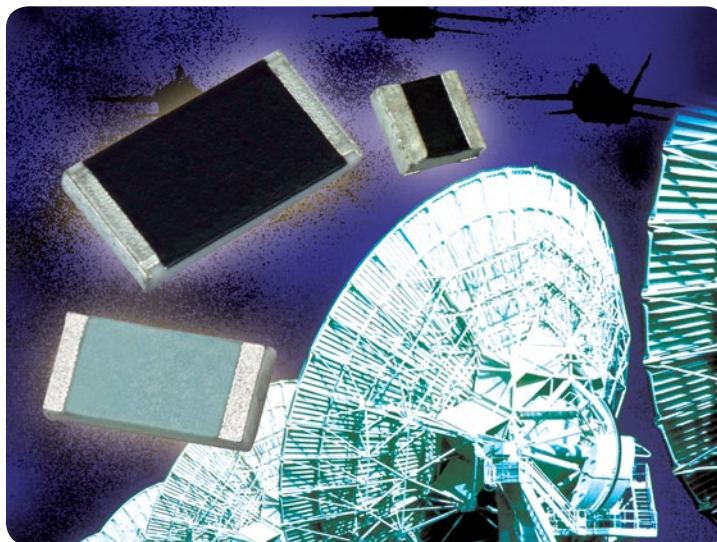


MILITARY FILM SMD RESISTORS

Resistive Products



An Overview of Military Film Surface-Mount Resistors



FEATURES

- A wide range of power ratings (0.04 W to 1 W)
- A wide resistance range (1 Ω to 22 M Ω)
- Low/high temperature performance (- 65 $^{\circ}\text{C}$ to + 150 $^{\circ}\text{C}$)
- Highly-stable Thick Film and Thin Film construction
- Very low noise
- Resistors – MIL-PRF-55342 qualified
- Jumpers - MIL-PRF-32159 qualified
- 100 % screen tested per group A

RESOURCES

- For technical questions on Dale Thick Film products contact ff2aresistors@vishay.com
- For technical questions on VTF Thin Film products contact thinfilm@vishay.com

Resistors - Wide Range of Power Ratings

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



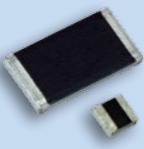


MILITARY FILM SMD RESISTORS

Resistive Products



Resistors - Wide Range of Power Ratings

Military Specification	Model	Wattage Rating (W)	Characteristic	Resistance Range (Ω)	Tolerance	Part Number Definition
Established Reliability						
MIL-PRF-55342 [Thick Film] 	RM0502: /01 (RCWPM-0502)	0.05	M	1 to 9.1	± 2 to ± 10	M55342 M 02 B 10E0 R 1 2 3 4 5 6 1: M55342 MIL. spec. no. indicating MIL-PRF-55342 D55342 for RM1206 2: M Characteristic M = ± 300 ppm/°C L = ± 200 ppm/°C K = ± 100 ppm/°C 3: 02 MIL. Spec. sheet number 4: B Termination material B = Pre-tinned nickel barrier, wraparound 5: 10E0 Resistance and Tolerance 6: R Failure rate level (reference current MIL-PRF-55342 QPL list)
			K, L, M	10 to 22 M	± 1 to ± 10	
	RM0505: /02 (RCWPM-550)	0.125	M	1 to 9.1	± 2 to ± 10	
			K, L, M	10 to 22 M	± 1 to ± 10	
	RM1005: /03 (RCWPM-5100)	0.20	M	1 to 5.6	± 2 to ± 10	
			K, L, M	5.62 to 22 M	± 1 to ± 10	
	RM1505: /04 (RCWPM-5150)	0.15	M	1 to 5.6	± 2 to ± 10	
			K, L, M	5.62 to 22 M	± 1 to ± 10	
	RM2208: /05 (RCWPM-7225)	0.225	M	1 to 5.6	± 2 to ± 10	
			K, L, M	5.62 to 22 M	± 1 to ± 10	
	RM0705: /06 (RCWPM-575)	0.15	M	1 to 5.6	± 2 to ± 10	
			K, L, M	5.62 to 22 M	± 1 to ± 10	
	RM1206: /07 (RCWPM-1206)	0.25	M	1 to 5.6	± 2 to ± 10	
K, L, M			5.62 to 22 M	± 1 to ± 10		
RM2010: /08 (RCWPM-2010)	0.80	M	1 to 5.6	± 2 to ± 10		
		K, L, M	5.62 to 22 M	± 1 to ± 10		
RM2512: /09 (RCWPM-2512)	1.0	M	1 to 5.6	± 2 to ± 5		
		K, L, M	5.62 to 22 M	± 1 to ± 5		
RM1010: /10 (RCWPM-1100)	0.50	M	1 to 5.6	± 2 to ± 10		
		K, L, M	5.62 to 22 M	± 1 to ± 10		
RM0402: /11 (RCWPM-0402)	0.05	M	1 to 9.1	± 2 to ± 10		
		K, L, M	10 to 22 M	± 1 to ± 10		
RM0603: /12 (RCWPM-0603)	0.10	M	1 to 5.6	± 2 to ± 10		
		K, L, M	5.62 to 22 M	± 1 to ± 10		
RM0302: /13 (RCWPM-0302)	0.04	M	1 to 9.1	± 2 to ± 10		
		K, L, M	10 to 22 M	± 1 to ± 10		

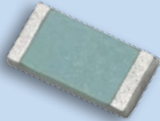


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Resistors - Wide Range of Power Ratings

Military Specification	Model	Wattage Rating (W)	Characteristic	Resistance Range (Ω)	Tolerance	Part Number Definition
Established Reliability						
MIL-PRF-55342 [Thin Film] 	RM0502: /01 (M55342/01)	0.05	E	49.9 to 150 k	± 0.1 to ± 5	M55342 E 06 B 10B0 R 1 2 3 4 5 6 1: M55342 MIL. spec. no. indicating MIL-PRF-55342 D55342 for RM1206 2: E Characteristic M = ± 300 ppm/°C L = ± 200 ppm/°C K = ± 100 ppm/°C H = ± 50 ppm/°C E = ± 25 ppm/°C 3: 06 MIL. Spec. sheet number 4: B Termination material B = Pre-tinned nickel barrier, wraparound 5: 10B0 Resistance and Tolerance 6: R Failure rate level (reference current MIL-PRF-55342 QPL list)
			H, K, L, M	20 to 150 k	± 0.1 to ± 5	
	RM0505: /02 (M55342/02)	0.125	E	49.9 to 301 k	± 0.1 to ± 5	
			H, K, L, M	20 to 301 k	± 0.1 to ± 5	
	RM1005: /03 (M55342/03)	0.20	E	49.9 to 649 k	± 0.1 to ± 5	
			H, K, L, M	10 to 649 k	± 0.1 to ± 5	
	RM1505: /04 (M55342/04)	0.15	E	49.9 to 1.69 M	± 0.1 to ± 5	
			H, K, L, M	10 to 1.69 M	± 0.1 to ± 5	
	RM2208: /05 (M55342/05)	0.225	E	49.9 to 3.16 M	± 0.1 to ± 5	
			H, K, L, M	10 to 3.16M	± 0.1 to ± 5	
	RM0705: /06 (M55342/06)	0.15	E	49.9 to 475 k	± 0.1 to ± 5	
			H, K, L, M	10 to 475 k	± 0.1 to ± 5	
RM1206: /07 (D55342/07)	0.25	E	49.9 to 1.5 M	± 0.1 to ± 5		
		H, K, L, M	10 to 1.5 M	± 0.1 to ± 5		
RM2010: /08 (M55342/08)	0.80	E	49.9 to 4.02 M	± 0.1 to ± 5		
		H, K, L, M	10 to 4.02 M	± 0.1 to ± 5		
RM2512: /09 (M55342/09)	1.0	E	49.9 to 6.19 M	± 0.1 to ± 5		
		H, K, L, M	10 to 6.19 M	± 0.1 to ± 5		
RM1010: /10 (M55342/10)	0.50	E, H, K, L, M	49.9 to 1 M	± 0.1 to ± 5		
RM0402: /11 (M55342/11)	0.05	E	49.9 to 100 k	± 0.1 to ± 5		
		H, K, L, M	20 to 100 k	± 0.1 to ± 5		
RM0603: /12 (M55342/12)	0.10	E	49.9 to 258 k	± 0.1 to ± 0.5		
		E	49.9 to 261 k	± 1 to ± 5		
		H, K, L, M	10 to 258 k	± 0.1 to ± 0.5		
		H, K, L, M	10 to 261 k	± 1 to ± 5		



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Resistance Tolerance and Multipliers

Tolerance							Multiplier	Value Range
± 0.1 %	± 0.25 %	± 0.5 %	± 1 %	± 2 %	± 5 %	± 10 %		
A	R	W	D	G	J	M	1	1 Ω - 9xx Ω
B	U	Y	E	H	K	N	1000	1 kΩ - 9xx kΩ
C	V	Z	F	T	L	P	1 000 000	1 MΩ - 9xx MΩ

Examples

54A2 = 54.2 Ω ± 0.1 % 20B0 = 20 kΩ ± 0.1 % 965A = 965 Ω ± 0.1 % 2C03 = 2.03 MΩ ± 0.1 % 21R5 = 21.5 Ω ± 0.25 % 6U98 = 6.98 kΩ ± 0.25 % 169R = 169 Ω ± 0.25 % 1V10 = 1.1 MΩ ± 0.25 % 88W7 = 88.7 Ω ± 0.5 % 102Y = 102 kΩ ± 0.5 %	40Y2 = 40.2 kΩ ± 0.5 % 1Z30 = 1.3 MΩ ± 0.5 % 11D3 = 11.3 Ω ± 1 % 10E0 = 10 kΩ ± 1 % 332D = 332 Ω ± 1 % 2F21 = 2.21 MΩ ± 1 % 51G0 = 51 Ω ± 2 % 10H0 = 10 kΩ ± 2 % 33H0 = 33 kΩ ± 2 % 2T20 = 2.2 MΩ ± 2 %	15J0 = 15 Ω ± 5 % 10K0 = 10 kΩ ± 5 % 560K = 560 kΩ ± 5 % 8L20 = 8.2 MΩ ± 5 % 10M0 = 10 Ω ± 10 % 10N0 = 10 kΩ ± 10 % 2P70 = 2.7 MΩ ± 10 % 8P20 = 8.2 MΩ ± 10 %
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Military Zero Ohm Jumper Drawings	Vishay Dale Model	Vishay Thin Film Model	Maximum Resistance (mΩ)	Part Number Definition
87011	RCWP-1100-99	M-1010X	20	94011-B 1 2 1: 94011 MIL. drawing no. 2: B Termination material B = Pre-tinned nickel barrier, wraparound
88032	RCWP-0502-99		20	
90047	RCWP-7225-99	M-2208X	40	
90048	RCWP-575-99	M-0805X	20	
90049	RCWP-5100-99	M-1005X	30	
90092	RCWP-5150-99	M-1505X	40	
94011	RCWP-1206-99	M-1206X	20	
03002	RCWP-550-99	M-0505X	25	
03011	RCWP-0201-99		50	
03012	RCWP-0302-99		20	
03013	RCWP-0603-99	M-0603X	25	
03014	RCWP-0402-99	M-0402X	25	
03015	RCWP-2010-99	M-2010X	40	
03016	RCWP-2512-99	M-2512X	40	

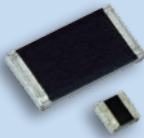


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Military Specification	Model	Wattage Rating (W)	Current Rating	Maximum Resistance (mΩ)	Part Number Definition
Established Reliability					
MIL-PRF-32159 	RCZ0502: /01 (RCWPM-0502-99)	0.05	1.3	30	M32159 B 06 M 1 2 3 4
	RCZ0505: /02 (RCWPM-550-99)	0.1	2.2	20	1: M32159 MIL. spec. no. indicating MIL-PRF-32159
	RCZ1005: /03 (RCWPM-5100-99)	0.2	2.8	25	2: B Termination material B = Pre-tinned nickel barrier, wraparound
	RCZ1505: /04 (RCWPM-5150-99)	0.15	2.1	35	3: 06 MIL. spec. sheet number
	RCZ2208: /05 (RCWPM-7225-99)	0.225	2.5	35	4: M Failure rate level (reference current MIL-PRF-32159 QPL list)
	RCZ0705: /06 (RCWPM-575-99)	0.15	2.7	20	
	RCZ1206: /07 (RCWPM-1206-99)	0.25	3.2	25	
	RCZ2010: /08 (RCWPM-2010-99)	0.8	5.7	25	
	RCZ2512: /09 (RCWPM-2512-99)	1	6.3	25	
	RCZ1010: /10 (RCWPM-1100-99)	0.5	5.0	20	
	RCZ0402: /11 (RCWPM-0402-99)	0.04	1.2	30	
	RCZ0603: /12 (RCWPM-0603-99)	0.07	1.5	30	
	RCZ0302: /13 (RCWPM-0302-99)	0.035	1.1	30	

Note: DSCC also offers a series of drawings for zero ohm chips.



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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