



Thick Film Chip Resistors, Military/Established Reliability MIL-PRF-55342 Qualified, Type RM


**HALOGEN
FREE**

MECHANICAL SPECIFICATIONS

Resistive element	Ruthenium oxide
Encapsulation	Epoxy
Substrate	96 % alumina
Termination	Solder-coated nickel barrier
Solder finish	Tin/lead solder alloy

FEATURES

- Fully conforms to the requirements of MIL-PRF-55342
- Established reliability - verified failure rate; M, P, R, U, S, V, and T levels
- Construction is sulfur impervious against a high sulfur environment (ASTM B 809-95 test method)
- 100 % group A screening per MIL-PRF-55342
- Termination style B - tin/lead wraparound over nickel barrier
- Operating temperature range is - 55 °C to + 150 °C
- For MIL-PRF-32159 zero ohm jumpers, see Vishay Dale's RCWPM Jumper (Military M32159) datasheet (www.vishay.com/doc?31028)
- Material categorization: For definitions of compliance please see www.vishay.com/doc?99912

STANDARD ELECTRICAL SPECIFICATIONS

VISHAY DALE MODEL	MIL-PRF-55342 STYLE	MIL SPEC. SHEET	TERM.	CASE SIZE	POWER RATING $P_{70^{\circ}\text{C}}$ W	MAX. WORKING VOLTAGE ⁽¹⁾ V	RESISTANCE RANGE Ω	TOLERANCE $\pm \%$	TEMPERATURE COEFFICIENT ⁽²⁾ $\pm \text{ppm}/^{\circ}\text{C}$
RCWPM-0502	RM0502	01	B	0502	0.05	40	1 to 9.1 10 to 22M	2, 5, 10 1, 2, 5, 10	300 100, 200, 300
RCWPM-550	RM0505	02	B	0505	0.125	40	1 to 9.1 10 to 22M	2, 5, 10 1, 2, 5, 10	300 100, 200, 300
RCWPM-5100	RM1005	03	B	1005	0.20	75	1 to 5.6 5.62 to 22M	2, 5, 10 1, 2, 5, 10	300 100, 200, 300
RCWPM-5150	RM1505	04	B	1505	0.15	125	1 to 5.6 5.62 to 22M	2, 5, 10 1, 2, 5, 10	300 100, 200, 300
RCWPM-7225	RM2208	05	B	2208	0.225	175	1 to 5.6 5.62 to 22M	2, 5, 10 1, 2, 5, 10	300 100, 200, 300
RCWPM-575	RM0705	06	B	0705 ⁽³⁾	0.15	50	1 to 5.6 5.62 to 22M	2, 5, 10 1, 2, 5, 10	300 100, 200, 300
RCWPM-1206	RM1206	07	B	1206	0.25	100	1 to 5.6 5.62 to 22M	2, 5, 10 1, 2, 5, 10	300 100, 200, 300
RCWPM-2010	RM2010	08	B	2010	0.80	150	1 to 5.6 5.62 to 22M	2, 5, 10 1, 2, 5, 10	300 100, 200, 300
RCWPM-2512	RM2512	09	B	2512	1.0	200	1 to 5.6 5.62 to 22M	2, 5, 10 1, 2, 5, 10	300 100, 200, 300
RCWPM-1100	RM1010	10	B	1010	0.50	75	1 to 5.6 5.62 to 22M	2, 5, 10 1, 2, 5, 10	300 100, 200, 300
RCWPM-0402	RM0402	11	B	0402	0.05	30	1 to 9.1 10 to 22M	2, 5, 10 1, 2, 5, 10	300 100, 200, 300
RCWPM-0603	RM0603	12	B	0603	0.10	50	1 to 5.6 5.62 to 22M	2, 5, 10 1, 2, 5, 10	300 100, 200, 300
RCWPM-0302	RM0302	13	B	0302	0.04	15	1 to 9.1 10 to 22M	2, 5, 10 1, 2, 5, 10	300 100, 200, 300

Notes

- DSCC has created a series of drawings to support the need for 0201-sized product. Vishay Dale is listed as a resource on this drawing as follows:

DSCC DRAWING NUMBER	VISHAY DALE MODEL	TERM.	POWER RATING $P_{70^{\circ}\text{C}}$ W	RES. RANGE Ω	RES. TOL. $\pm \%$	TEMP. COEF. $\pm \text{ppm}/^{\circ}\text{C}$	MAX. WORKING VOLTAGE ⁽¹⁾ V
07009	RCWP-0201	B	0.05	10 to 46.4 47 to 1M	1, 5	200 100	30

This drawing can be viewed at: www.landandmaritime.dla.mil/Programs/MilSpec/ListDwgs.aspx?DocType=DSCCdwg.

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

⁽²⁾ Characteristics: K = $\pm 100 \text{ ppm}/^{\circ}\text{C}$; L = $\pm 200 \text{ ppm}/^{\circ}\text{C}$; M = $\pm 300 \text{ ppm}/^{\circ}\text{C}$.

⁽³⁾ MIL case size 0705 and EIA case size 0805 are dimensionally the same.



GLOBAL PART NUMBER INFORMATION

New Global Part Numbering: M55342M02B10E0RWB (preferred part number format)

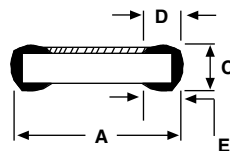
M	5	5	3	4	2	M	0	2	B	1	0	E	0	R	W	B	
MIL STYLE	CHARACTERISTICS		SPEC. SHEET		TERMINATION STYLE		VALUE AND TOLERANCE		FAILURE RATE		PACKAGING ⁽¹⁾			SPECIAL			
D55342 applies to Style 07 (RM1206) only.	K = 100 ppm L = 200 ppm M = 300 ppm		(see Standard Electrical Specifications table)		B = Pre-tinned nickel barrier, wraparound		(see Tolerance and Multipliers table)		C = Non-ER M = 1.0 %/1000 h P = 0.1 %/1000 h R = 0.01 %/1000 h U = 0.01 %/1000 h ⁽²⁾ S = 0.001 %/1000 h V = 0.001 %/1000 h ⁽²⁾ T = Space level		TP = Tin/lead, T/R (full) TN = Tin/lead, T/R (full), w/ESD UL = Tin/lead, T/R single lot date code S3 = Tin/lead, T/R (1000 pieces) SV = Tin/lead, T/R (1000 pieces), w/ESD WB = Tin/lead, waffle tray WA = Tin/lead, waffle tray, w/ESD WL = Tin/lead, waffle tray, single lot date code S2 = Tin/lead, T/R (500 pieces) SU = Tin/lead, T/R (500 pieces), w/ESD S6 = Tin/lead, T/R (300 pieces) ST = Tin/lead, T/R (300 pieces), w/ESD			Blank = Standard (Dash number) (Up to 1 digits) S = Space level w/option 1 part marking (-97) ⁽³⁾ T = Space level (-98) 2 = Option 1 part marking (-20) ⁽³⁾ 3 = Options 2 and 3 part marking (-30) ⁽³⁾			
Historical Part Numbering: M55342M02B10E0R (will continue to be accepted)																	
M55342	M		02		B		10E0		R			WB					
MIL STYLE	CHARACTERISTICS		SPEC. SHEET		TERMINATION STYLE		VALUE AND TOLERANCE		FAILURE RATE			PACKAGING CODE					

Notes

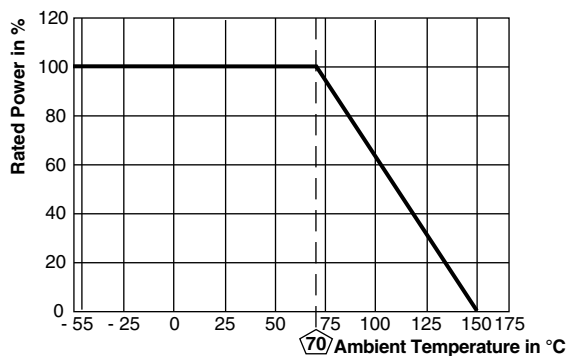
- For additional information on packaging, refer to the Surface Mount Resistor Packaging document (www.vishay.com/doc?31543).
- (1) Products with space level failure rates are only offered in packaging codes with ESD overpack and labeling. For all other failure rates, the ESD pack codes are an optional type of packaging.
- (2) Failure rates U and V require group A and B inspection ran on each production lot.
- (3) MIL spec option 1, 2, and 3 part marking is not offered for the slash sheet 01, 02, 11, and 13 sizes.

RESISTANCE TOLERANCE AND MULTIPLIERS

TOLERANCE				MULTIPLIER	VALUE RANGE (Ω)
$\pm 1\%$	$\pm 2\%$	$\pm 5\%$	$\pm 10\%$		
D	G	J	M	1	1 to 9xx
E	H	K	N	1000	1K to 9xxK
F	T	L	P	1 000 000	1M to 22M
Examples:					
		11D3 = 11.3 $\Omega \pm 1\%$		15J0 = 15 $\Omega \pm 5\%$	
		10E0 = 10 k $\Omega \pm 1\%$		10K0 = 10 k $\Omega \pm 5\%$	
		332D = 332 $\Omega \pm 1\%$		560K = 560 k $\Omega \pm 5\%$	
		2F21 = 2.21 M $\Omega \pm 1\%$		8L20 = 8.2 M $\Omega \pm 5\%$	
		51G0 = 51 $\Omega \pm 2\%$		10M0 = 10 $\Omega \pm 10\%$	
		10H0 = 10 k $\Omega \pm 2\%$		10N0 = 10 k $\Omega \pm 10\%$	
		33H0 = 33 k $\Omega \pm 2\%$		2P70 = 2.7 M $\Omega \pm 10\%$	
		22T0 = 22 M $\Omega \pm 2\%$		8P20 = 8.2 M $\Omega \pm 10\%$	

**DIMENSIONS** in inches (millimeters)

VISHAY DALE MODEL	MIL-PRF-55342 STYLE	MIL SPEC. SHEET	A (LENGTH)	B (WIDTH)	C (HEIGHT)	D (TOP TERM)	E (BOTTOM TERM)
RCWPM-0502	RM0502	01	0.055 ± 0.005 (1.40 ± 0.13)	0.023 ± 0.003 (0.58 ± 0.08)	0.015 ± 0.003 (0.38 ± 0.08)	0.010 ± 0.005 (0.25 ± 0.13)	0.015 ± 0.005 (0.38 ± 0.13)
RCWPM-550	RM0505	02	0.055 ± 0.005 (1.40 ± 0.13)	0.050 ± 0.005 (1.27 ± 0.13)	0.020 ± 0.005 (0.51 ± 0.13)	0.010 ± 0.005 (0.25 ± 0.13)	0.015 ± 0.005 (0.38 ± 0.13)
RCWPM-5100	RM1005	03	0.105 ± 0.005 (2.67 ± 0.13)	0.050 ± 0.005 (1.27 ± 0.13)	0.020 ± 0.005 (0.51 ± 0.13)	0.015 ± 0.005 (0.38 ± 0.13)	0.015 ± 0.005 (0.38 ± 0.13)
RCWPM-5150	RM1505	04	0.155 ± 0.005 (3.94 ± 0.13)	0.050 ± 0.005 (1.27 ± 0.13)	0.020 ± 0.005 (0.51 ± 0.13)	0.015 ± 0.005 (0.38 ± 0.13)	0.015 ± 0.005 (0.38 ± 0.13)
RCWPM-7225	RM2208	05	0.230 ± 0.005 (5.84 ± 0.13)	0.075 ± 0.005 (1.91 ± 0.13)	0.020 ± 0.005 (0.51 ± 0.13)	0.020 ± 0.005 (0.51 ± 0.13)	0.020 ± 0.005 (0.51 ± 0.13)
RCWPM-575	RM0705	06	0.080 ± 0.005 (2.03 ± 0.13)	0.050 ± 0.005 (1.27 ± 0.13)	0.020 ± 0.005 (0.51 ± 0.13)	0.016 ± 0.008 (0.41 ± 0.20)	0.015 ± 0.005 (0.38 ± 0.13)
RCWPM-1206	RM1206	07	0.125 ± 0.005 (3.18 ± 0.13)	0.063 ± 0.005 (1.60 ± 0.13)	0.020 ± 0.005 (0.51 ± 0.13)	0.015 ± 0.005 (0.38 ± 0.13)	0.015 ± 0.005 (0.38 ± 0.13)
RCWPM-2010	RM2010	08	0.197 ± 0.006 (5.00 ± 0.15)	0.098 ± 0.005 (2.49 ± 0.13)	0.020 ± 0.005 (0.51 ± 0.13)	0.020 ± 0.005 (0.51 ± 0.13)	0.020 ± 0.005 (0.51 ± 0.13)
RCWPM-2512	RM2512	09	0.250 ± 0.005 (6.35 ± 0.13)	0.124 ± 0.005 (3.15 ± 0.13)	0.020 ± 0.005 (0.51 ± 0.13)	0.020 ± 0.005 (0.51 ± 0.13)	0.020 ± 0.005 (0.51 ± 0.13)
RCWPM-1100	RM1010	10	0.105 ± 0.005 (2.67 ± 0.13)	0.100 ± 0.005 (2.54 ± 0.13)	0.020 ± 0.005 (0.51 ± 0.13)	0.015 ± 0.005 (0.38 ± 0.13)	0.015 ± 0.005 (0.38 ± 0.13)
RCWPM-0402	RM0402	11	0.039 ± 0.003 (0.99 ± 0.08)	0.020 ± 0.003 (0.51 ± 0.08)	0.013 ± 0.003 (0.33 ± 0.08)	0.010 ± 0.005 (0.25 ± 0.13)	0.010 ± 0.005 (0.25 ± 0.13)
RCWPM-0603	RM0603	12	0.063 ± 0.005 (1.60 ± 0.13)	0.032 ± 0.005 (0.81 ± 0.13)	0.018 ± 0.005 (0.46 ± 0.13)	0.012 ± 0.005 (0.30 ± 0.13)	0.015 ± 0.005 (0.38 ± 0.13)
RCWPM-0302	RM0302	13	0.034 ± 0.004 (0.86 ± 0.10)	0.021 ± 0.003 (0.53 ± 0.08)	0.013 ± 0.003 (0.33 ± 0.08)	0.007 ± 0.005 (0.18 ± 0.13)	0.008 ± 0.005 (0.20 ± 0.13)
RCWP-0201			0.024 ± 0.002 (0.61 ± 0.05)	0.012 ± 0.002 (0.30 ± 0.05)	0.009 ± 0.002 (0.23 ± 0.05)	0.006 ± 0.003 (0.15 ± 0.08)	0.006 ± 0.002 - 0.004 (0.15 ± 0.05 - 0.10)

DERATING CURVE**CAGE CODE: 91637 and SH903**



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