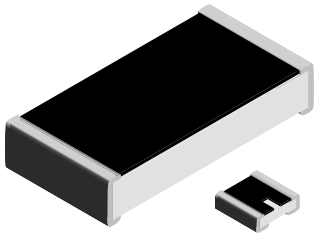
Thick Film Chip Resistors, Military/Established Reliability MIL-PRF-55342 Qualified, Type RM



FEATURES

HALOGEN FREE

- Fully conforms to the requirements of MIL-PRF-55342
- Established reliability - verified failure rate; M, P, R, S and T levels
- Operating temperature range is - 55 °C to + 150 °C
- 100 % group A screening per MIL-PRF-55342
- Termination style B - tin/lead wraparound over nickel barrier
- For MIL-PRF-32159 zero ohm jumpers, see Vishay Dale's RCWPM Jumper (Military M32159) datasheet
- Halogen-free according to IEC 61249-2-21 definition

MECHANICAL SPECIFICATIONS	
Resistive Element	Ruthenium oxide
Encapsulation	Epoxy
Substrate	96 % alumina
Termination	Solder-coated nickel barrier
Solder Finish	Tin/lead solder alloy

STANDARD ELECTRICAL SPECIFICATIONS

VISHAY DALE MODEL	MIL-PRF-55342 STYLE	MIL SPEC. SHEET	TERM.	POWER RATING $P_{70\ °C}$ W	MAX. WORKING VOLTAGE (1) V	TEMPERATURE COEFFICIENT (2) ± ppm/°C	TOLERANCE ± %	RESISTANCE RANGE Ω
RCWPM-0502	RM0502	01	B	0.05	40	300 100, 300	2, 5, 10 1, 2, 5, 10	1 to 9.1 10 to 22M
RCWPM-550	RM0505	02	B	0.125	40	300 100, 300	2, 5, 10 1, 2, 5, 10	1 to 9.1 10 to 22M
RCWPM-5100	RM1005	03	B	0.20	75	300 100, 300	2, 5, 10 1, 2, 5, 10	1 to 5.1 5.6 to 22M
RCWPM-5150	RM1505	04	B	0.15	125	300 100, 300	2, 5, 10 1, 2, 5, 10	1 to 5.1 5.6 to 22M
RCWPM-7225	RM2208	05	B	0.225	175	300 100, 300	2, 5, 10 1, 2, 5, 10	1 to 5.1 5.6 to 22M
RCWPM-575	RM0705	06	B	0.15	50	300 100, 300	2, 5, 10 1, 2, 5, 10	1 to 5.1 5.6 to 22M
RCWPM-1206	RM1206	07	B	0.25	100	300 100, 300	2, 5, 10 1, 2, 5, 10	1 to 5.1 5.6 to 22M
RCWPM-2010	RM2010	08	B	0.80	150	300 100, 300	2, 5, 10 1, 2, 5, 10	1 to 5.1 5.6 to 22M
RCWPM-2512	RM2512	09	B	1.0	200	300 100, 300	2, 5, 10 1, 2, 5, 10	1 to 5.1 5.6 to 22M
RCWPM-1100	RM1010	10	B	0.50	75	300 100, 300	2, 5, 10 1, 2, 5, 10	1 to 5.1 5.6 to 22M
RCWPM-0402	RM0402	11	B	0.05	30	300 100, 300	2, 5, 10 1, 2, 5, 10	1 to 9.1 10 to 22M
RCWPM-0603	RM0603	12	B	0.10	50	300 100, 300	2, 5, 10 1, 2, 5, 10	1 to 5.1 5.6 to 22M
RCWPM-0302	RM0302	13	B	0.04	15	300 100, 300	2, 5, 10 1, 2, 5, 10	1 to 9.1 10 to 22M

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 $P_{70\ °C}$ W	RES. RANGE Ω	RES. TOL. ± %	TEMP. COEF. ± ppm/°C	MAX. WORKING VOLTAGE (1) V
07009	RCWP-0201	B	0.05	47 to 1M 10 to 1M	± 1; ± 5	100 200	30

This drawing can be viewed at: www.dscc.dla.mil/Programs/MilSpec/listDwgs.asp?DocType=DSCCdwg

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

(2) Characteristics: K = ± 100 ppm/°C; M = ± 300 ppm/°C

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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. **M55342** applies to all other styles.	**K** = 100 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 **S** = 0.001 %/1000 h **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, tray **WA** = Tin/lead, tray, w/ESD **WL** = Tin/lead, 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) **T** = Space level (-98)

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

Note

(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.

RESISTANCE TOLERANCE AND MULTIPLIERS

TOLERANCE				MULTIPLIER	VALUE RANGE (Ω)
± 1 %	± 2 %	± 5 %	± 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 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 %
22T0 = 22 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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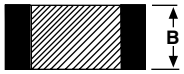
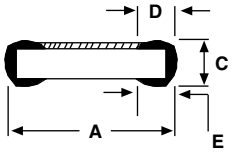
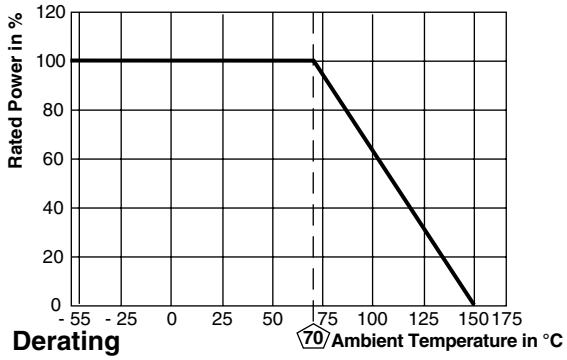
DIMENSIONS in inches (millimeters)





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 ± 0.006 (6.35 ± 0.15)	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



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