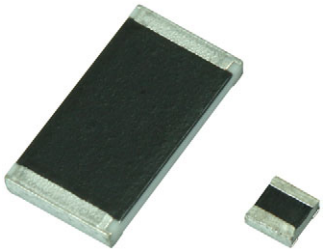
Thick Film Chip Resistors, Zero Ohm Jumper, Military / High Reliability MIL-PRF-32159 Qualified, Type RCZ



FEATURES

HALOGEN FREE

- Fully conforms to the requirements of MIL-PRF-32159
- High reliability - product levels M (military grade) and T (space level)
- 100 % group A screening per MIL-PRF-32159
- Termination style B - tin / lead wraparound over nickel barrier
- Operating temperature range is -65 °C to +150 °C
- For MIL-PRF-55342 chip resistors, see Vishay Dale's RCWPM (Military M/D55342) datasheet (www.vishay.com/doc?31010)
- Material categorization: for definitions of compliance please see www.vishay.com/doc?99912

STANDARD ELECTRICAL SPECIFICATIONS

VISHAY DALE MODEL	MIL-PRF-32159 STYLE	MIL SPEC. SHEET	TERM.	CASE SIZE	POWER RATING $P_{70\,°C}$ W	CURRENT RATING A	MAXIMUM RESISTANCE Ω
RCWPM-0502-99, RCWPM-0502-5	RCZ0502	01	B	0502	0.05	1.3	30m
RCWPM-550-99, RCWPM-550-5	RCZ0505	02	B	0505	0.100	2.2	20m
RCWPM-5100-99, RCWPM-5100-5	RCZ1005	03	B	1005	0.20	2.8	25m
RCWPM-5150-99, RCWPM-5150-5	RCZ1505	04	B	1505	0.15	2.1	35m
RCWPM-7225-99, RCWPM-7225-5	RCZ2208	05	B	2208	0.225	2.5	35m
RCWPM-575-99, RCWPM-575-5	RCZ0705	06	B	0705 (1)	0.15	2.7	20m
RCWPM-1206-99, RCWPM-1206-5	RCZ1206	07	B	1206	0.25	3.2	25m
RCWPM-2010-99, RCWPM-2010-5	RCZ2010	08	B	2010	0.80	5.7	25m
RCWPM-2512-99, RCWPM-2512-5	RCZ2512	09	B	2512	1.0	6.3	25m
RCWPM-1100-99, RCWPM-1100-5	RCZ1010	10	B	1010	0.50	5.0	20m
RCWPM-0402-99, RCWPM-0402-5	RCZ0402	11	B	0402	0.04	1.2	30m
RCWPM-0603-99, RCWPM-0603-5	RCZ0603	12	B	0603	0.07	1.5	30m
RCWPM-0302-99, RCWPM-0302-5	RCZ0302	13	B	0302	0.035	1.1	30m

Notes

- DSCC has created a series of drawings to support the need for zero ohm jumper product. Vishay Dale is listed as a resource on these drawings as follows:

DSCC DRAWING NUMBER	VISHAY DALE MODEL	TERM.	MAXIMUM RESISTANCE mΩ	MAX. CURRENT RATING A	MAXIMUM WORKING VOLTAGE V
03011	RCWPM0201..99	B	50	0.25	15
03012	RCWPM0302..99	B	20	1.1	15
03014	RCWPM0402..99	B	25	1.2	30
88032	RCWPM0502..99	B	20	1.3	40
03013	RCWPM0603..99	B	25	1.5	50
03002	RCWPM0550..99	B	25	2.2	40
90048	RCWPM0575..99	B	20	2.7	50
90049	RCWPM5100..99	B	30	2.8	75
94011	RCWPM1206..99	B	20	3.2	100
90092	RCWPM5150..99	B	40	2.1	125
87011	RCWPM1100..99	B	20	5.0	75
90047	RCWPM7225..99	B	40	2.5	175
03015	RCWPM2010..99	B	40	5.7	150
03016	RCWPM2512..99	B	40	6.3	200

These drawings can be viewed at: www.landandmaritime.dla.mil/Programs/MilSpec/ListDwgs.aspx?DocTYPE=DSCCdwg

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

For technical questions, contact: ff2aresistors@vishay.com

GLOBAL PART NUMBER INFORMATION

Part Number (MIL-PRF-32159): M32159B02MWB (preferred part number format)

M	3	2	1	5	9	B	0	2	M	W	B			

MIL STYLE	TERMINATION STYLE	SPEC SHEET	PRODUCT GRADE	PACKAGING [1]	SPECIAL
M32159	**B** = pre-tinned nickel barrier, wraparound	(see Standard Electrical Specifications table)	**C** = industry grade **M** = military grade **T** = space level	**TP** = tin / lead, T/R (full), plastic tape **TN** = tin / lead, T/R (full), w/ESD **S3** = tin / lead, T/R (1000 pieces) **SV** = tin / lead, T/R (1000 pieces), w/ESD **UL** = tin / lead, T/R, single lot date code **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 3 digits) **5** = space level **96** = part marked [2] **7** = space level w/part marking [2]

Part Number (DSCC Drawings): RCWPM5100WB99

R	C	W	P	M	5	1	0	0	W	B	9	9

GLOBAL MODEL	PACKAGING [3]	SPECIAL
RCWPM0201 **RCWPM0302** **RCWPM0402** **RCWPM0502** **RCWPM0550** **RCWPM0575** **RCWPM0603** **RCWPM1100** **RCWPM1206** **RCWPM2010** **RCWPM2512** **RCWPM5100** **RCWPM5150** **RCWPM7225**	**TP** = tin / lead, T/R (full), plastic tape **S3** = tin / lead, T/R (1000 pieces), plastic tape **UL** = tin / lead, T/R, single lot date code **WB** = tin / lead, waffle tray **WL** = tin / lead, waffle tray, single lot date code **S2** = tin / lead, T/R (500 pieces), plastic tape **S6** = tin / lead, T/R (300 pieces), plastic tape **UA** = tin / lead, T/R (full), paper tape **UD** = tin / lead T/R (1000 pieces), paper tape **UC** = tin / lead, T/R (500 pieces), paper tape **UB** = tin / lead, T/R (300 pieces), paper tape	**99** = 0 Ω jumper

Notes

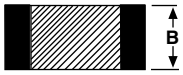
- For additional information on packaging, refer to the Surface Mount Resistor Packaging document (www.vishay.com/doc?31543)

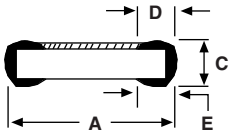
(1) Products with space level failure rates are only offered in packaging codes with ESD overpack and labeling. For all other failure rates, the ESD pack codes are an optional type of packaging

(2) Optional MIL spec part marking is not offered for the slash sheet 01, 02, 11, and 13 sizes

(3) Tape and reel packaging with plastic tape standard for all case sizes except 0201. For the 0201 case size, the product is only offered in tape and reel packaging with paper tape

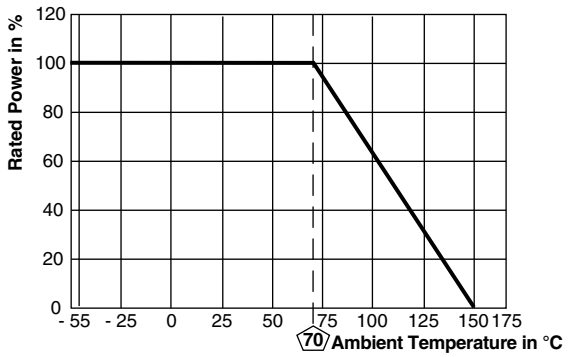
DIMENSIONS in inches (millimeters)





VISHAY DALE MODEL	MIL-PRF-32159 STYLE	MIL. SPEC. SHEET	A (LENGTH)	B (WIDTH)	C (HEIGHT)	D (TOP TERM)	E (BOTTOM TERM)
RCWPM-0502	RCZ0502	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	RCZ0505	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	RCZ1005	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	RCZ1505	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	RCZ2208	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	RCZ0705	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	RCZ1206	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	RCZ2010	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	RCZ2512	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	RCZ1010	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	RCZ0402	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	RCZ0603	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	RCZ0302	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)
RCWPM-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 2799A (formerly SH903)

MATERIAL SPECIFICATIONS

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

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