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RCWL

Thick Film Surface Mount Chip Resistors, Wraparound, Low Value (0.1 Ω to 0.91 Ω)



FEATURES

- Low resistance values (0.1 Ω to 0.91 Ω)
- · Suitable for current sensing and shunts
- Metal glaze on high quality ceramic
- Protective overglaze
- · Solder contacts on Ni barrier layer
- Compliant to RoHS Directive 2002/95/EC
- Halogen-free according to IEC 61249-2-21 definition

Note

Pb containing terminations are not RoHS compliant, exemptions may apply

STANDARD E	ECTRICAL	SPECIFICATIO	NS				
GLOBAL MODEL	CASE SIZE	POWER RATING P _{70 °C} W	TEMPERATURE COEFFICIENT ± ppm/°C	RESISTANCE RANGE Ω	TOLERANCE ± %	E-SERIES	
RCWL0402	0402	0.063	600	0.22 to 0.43	5	24	
	0402	0.003	400	0.47 to 0.91	5	24	
	0602	0.1	400	0.10 to 0.43	E	0.4	
RCWL0603	0603	0.1	200	0.47 to 0.91	5	24	
RCWL0805	0805	0.125	300	0.10 to 0.43	5	24	
RCWL0805		0805	0805	0.125	200 0.47 to 0.91	0.47 to 0.91	5
DCW/ 1006	1000	0.25	300	0.10 to 0.43	5	24	
RCWL1206	1206	0.25	200	0.47 to 0.91	5	24	
RCWL1210	1210	0.33	200	0.10 to 0.91	5	24	
RCWL1218	1218	1.0	200	0.10 to 0.91	5	24	
RCWL2010	2010	0.5	200	0.10 to 0.91	5	24	
RCWL2512	2512	1.0	200	0.10 to 0.91	5	24	

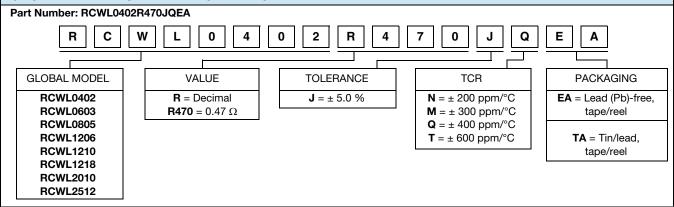
Note

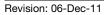
Power rating depends on the max. temperature at the solder point, the component placement density and the substrate material.

Part marking: Reference Surface Mount Resistor Marking document number 20020.

The resistance is measured from the top side.

GLOBAL PART NUMBER INFORMATION







COMPLIANT HALOGEN

FREE

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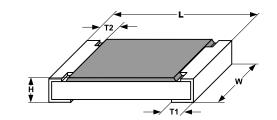
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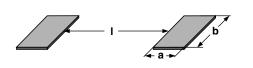
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TECHNICAL SPECIFIC	CATIO	ONS							
PARAMETER	UNIT	RCWL0402	RCWL0603	RCWL0805	RCWL1206	RCWL1210	RCWL1218	RCWL2010	RCWL2512
Operating temp. range	°C		- 55 to + 155						
Maximum operating voltage	V		$(P \times R)^{1/2}$						
Insulation voltage U _{ins} (1 min)	V	> 75	> 100	> 200	> 300	> 300	> 300	> 300	> 300
Insulation resistance	Ω	> 10 ⁹							
Weight/1000 pieces (typical)	g	0.65	2	5.5	10	16	29.5	25.5	40.5

DIMENSIONS

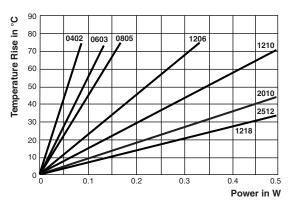
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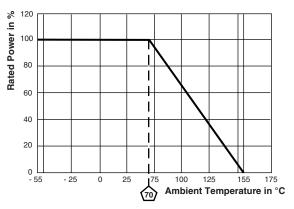


	DIMENSIONS in millimeters										
MODEL	L	w	н	T1	T2	REFLOW SOLDERING			WAVE SOLDERING		
	L	vv	п			а	b	Ι	а	b	Ι
RCWL0402	1.0 ± 0.05	0.5 ± 0.05	0.35 ± 0.05	0.25 ± 0.05	0.2 ± 0.1	0.4	0.6	0.5	0.5	0.6	0.5
RCWL0603	1.55 ^{+ 0.10} - 0.05	0.85 ± 0.1	0.45 ± 0.05	0.3 ± 0.2	0.3 ± 0.2	0.5	0.9	1.0	0.9	0.9	1.0
RCWL0805	2.0 ^{+ 0.20} - 0.10	1.25 ± 0.15	0.45 ± 0.05	0.3 + 0.20 - 0.10	0.3 ± 0.2	0.7	1.3	1.2	0.9	1.3	1.3
RCWL1206	3.2 ^{+ 0.10} - 0.20	1.6 ± 0.15	0.55 ± 0.05	0.45 ± 0.2	0.4 ± 0.2	0.9	1.7	2.0	1.1	1.7	2.3
RCWL1210	3.2 ± 0.2	2.5 ± 0.2	0.55 ± 0.05	0.45 ± 0.2	0.4 ± 0.2	0.9	2.5	2.0	1.1	2.5	2.2
RCWL1218	3.2 ^{+ 0.10} - 0.20	4.6 ± 0.15	0.55 ± 0.05	0.45 ± 0.2	0.4 ± 0.2	1.05	4.9	1.9	1.25	4.8	1.9
RCWL2010	5.0 ± 0.15	2.5 ± 0.15	0.6 ± 0.1	0.6 ± 0.2	0.6 ± 0.2	1.0	2.5	3.9	1.2	2.5	3.9
RCWL2512	6.3 ± 0.2	3.15 ± 0.15	0.6 ± 0.1	0.6 ± 0.2	0.6 ± 0.2	1.0	3.2	5.2	1.2	3.2	5.2

TEMPERATURE RISE



DERATING



PERFORMANCE		
TEST	CONDITIONS OF TEST	TEST LIMITS
Thermal shock	MIL-STD-202, method 107, - 55 °C to + 125 °C, 300 cycles at each extreme	± (2.0 % + 0.005 Ω) ΔR

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Document Number: 20018

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PERFORMANCE		
TEST	CONDITIONS OF TEST	TEST LIMITS
Short time overload	2 x rated power; duration according the model	\pm (0.5 % + 0.005 $\Omega) \Delta R$
High temperature exposure	MIL-STD-202, method 108, 1000 h at T = 125 °C, 0 % power	\pm (2.0 % + 0.005 $\Omega) \Delta R$
Temperature cycling	JESD 22, method JA-104, 1000 cycles (- 55 °C to + 125 °C)	\pm (2.0 % + 0.005 $\Omega) \Delta R$
Biased humidity	MIL-STD-202, method 103, 1000 h 85 °C/85 % RH, 10 % x (P x R) ^{1/2}	\pm (2.0 % + 0.005 $\Omega) \Delta R$
Mechanical shock	MIL-STD-202, method 213, condition C, 10 g's, 6 ms (half sine), 3 directions	\pm (0.5 % + 0.005 $\Omega) \Delta R$
Vibration	MIL-STD-202, method 204, 5 g's, 20 min, 12 cycles, 3 directions, 10 Hz to 2000 Hz	\pm (0.5 % + 0.005 $\Omega) \Delta R$
Operational life	MIL-STD-202, method 108, 1000 h at T = 125 °C at rated power	\pm (2.0 % + 0.005 $\Omega) \Delta R$
Resistance to solder heat	MIL-STD-202, method 210, + 260 °C solder, 10 s to 12 s dwell, 25 mm/s emergence	± (1.0 % + 0.005 Ω) Δ <i>R</i>
Moisture resistance	MIL-STD-202, method 106, 0 % power, 7a and 7b not required	\pm (2.0 % + 0.005 $\Omega) \Delta R$

PACKAGING									
MODEL	REEL								
MODEL	TAPE WIDTH	DIAMETER	РІТСН	PIECES/REEL	CODE				
RCWL0402	8 mm/punched paper	180 mm/7"	2 mm	10 000	EA				
RCWL0603	8 mm/punched paper	180 mm/7"	4 mm	5000	EA				
RCWL0805	8 mm/punched paper	180 mm/7"	4 mm	5000	EA				
RCWL1206	8 mm/punched paper	180 mm/7"	4 mm	5000	EA				
RCWL1210	12 mm/punched paper	180 mm/7"	4 mm	5000	EA				
RCWL1218	12 mm/embossed plastic	180 mm/7"	4 mm	4000	EA				
RCWL2010	12 mm/embossed plastic	180 mm/7"	4 mm	4000	EA				
RCWL2512	12 mm/embossed plastic	180 mm/7"	8 mm	2000	EA				

Note

• Embossed carrier tape per EIA-481-1A.



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Authorized Distributor

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RCWL0805R200JMTA RCWL1206R100JMTA RCWL2512R680JNTA RCWL2512R430JNTG
RCWL0805R100JMTA RCWL1206R240JMTA RCWL1206R510JNTA RCWL2512R470JNTA RCWL0603R180JQEA
RCWL1206R220JMEA RCWL0805R680JNTA RCWL2512R330JNEA CRCW0603J-0.47 RCWL0402R220JTEA
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