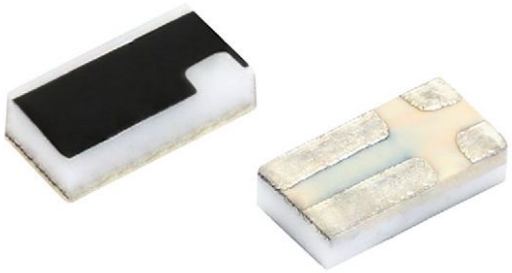
Thick Film Surface Mount Chip Resistors, Current Sensor, 4-Terminal



FEATURES

- 4-Terminal design allows extremely low resistance value (0.01 Ω) with tight tolerance (1 %)
- High power to foot print size ratio
- Suitable for current sensing in power supplies and other applications
- Metal glaze on high quality ceramic
- Protective overglaze
- Lead (Pb)-free solder contacts on Ni barrier layer
- Material categorization: for definitions of compliance please see www.vishay.com/doc?99912

Pb e3 RoHS COMPLIANT HALOGEN FREE

STANDARD ELECTRICAL SPECIFICATIONS

GLOBAL MODEL	CASE SIZE	POWER RATING $P_{70\,°C}$ W	TEMPERATURE COEFFICIENT ± ppm/°C	RESISTANCE RANGE Ω	TOLERANCE ± %
RCWK0306	0306	0.33	300	0.01 to 0.1	1.0

Notes

- 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” (www.vishay.com/doc?20020)

(1) Use E24 decade values for 5.0 % and 1.0 % tolerance parts and E96 decade values for 0.5 % and 1.0 %. Refer to Standard Decade Table (www.vishay.com/doc?31001)

GLOBAL PART NUMBER INFORMATION

Global Part Numbering example: RCWK030610L0FMEA (visit www.vishay.net Vishay Dale parts numbering manual for all options)

R	C	W	K	0	3	0	6	1	0	L	0	F	M	E	A

GLOBAL MODEL (8 digits)	VALUE (4 digits)	TOLERANCE (1 digit)	TCR (1 digit)	PACKAGING (2 digits)
RCWK0306	**L** = mΩ (1) **R** = decimal **10L0** = 0.01 Ω **R100** = 0.1 Ω	**F** = ± 1.0 %	**M** = ± 300 ppm/°C	**EA** = lead (Pb)-free, tape/reel

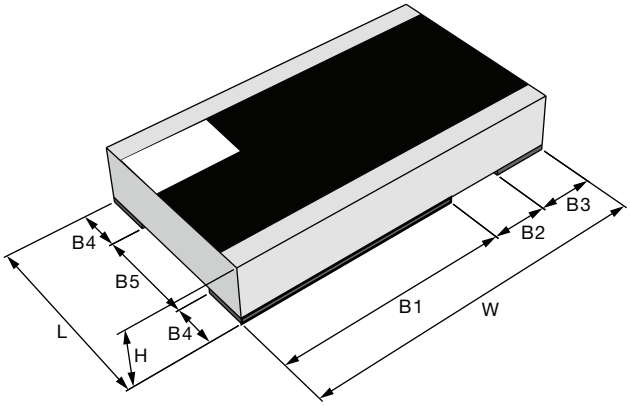
Note

(1) Use “L” for resistance values < 0.1 Ω

TECHNICAL SPECIFICATIONS

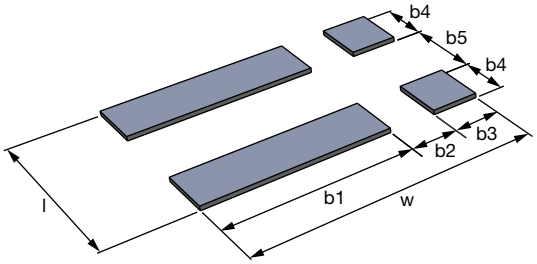
PARAMETER	UNIT	RCWK0306
Operating temperature range	°C	-55 to +155
Maximum operating voltage	V	$(P \times R)^{1/2}$
Insulation voltage U_{ins} (1 min.)	V	> 100
Insulation resistance	Ω	> 10^9
Weight/1000 pieces (typical)	g	3

DIMENSIONS in millimeters



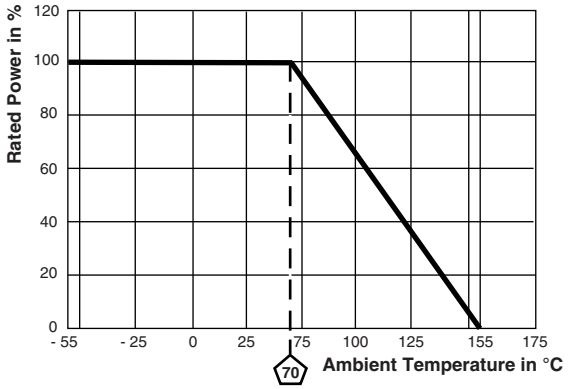
MODEL	L	W	H	B1	B2	B3	B4	B5
RCWK0306	0.85 ± 0.1	1.5 ± 0.1	0.45 ± 0.1	0.9 ± 0.2	0.3 (Ref.)	0.3 ± 0.1	0.28 ± 0.1	0.3 ± 0.2

SOLDER PAD DIMENSIONS in millimeters



MODEL	l	w	b1	b2	b3	b4	b5
RCWK0306	0.95	1.55	0.93	0.25	0.38	0.3	0.2

DERATING



PERFORMANCE		
TEST	**CONDITIONS OF TEST**	**TEST LIMITS**
Thermal shock	MIL-STD-202, method 107, -55 °C to +125 °C, 15 min at each extreme, 300 cycles	± (1.0 % + 0.0005 Ω)
Short time overload	2.5 x rated power; 5 s	± (0.5 % + 0.0005 Ω)
High temperature exposure	MIL-STD-202, method 108, 1000 h at T = 155 °C, 0 % power	± (2.0 % + 0.0005 Ω)
Temperature cycling	JESD 22, method JA-104, 1000 cycles (-55 °C to +125 °C)	± (2.0 % + 0.0005 Ω)
Biased humidity	MIL-STD-202, method 103, 1000 h 85 °C/85 % RH, 10 % x $(P \times R)^{1/2}$	± (2.0 % + 0.0005 Ω)
Mechanical shock	MIL-STD-202, method 213, condition C, 10 *g*'s, 6 ms (half sine), 3 directions	± (1.0 % + 0.0005 Ω)
Vibration	MIL-STD-202, method 204, 5 *g*'s, 20 min, 12 cycles, 3 directions, 10 Hz to 2000 Hz	± (1.0 % + 0.0005 Ω)
Operational life	MIL-STD-202, method 108, 1000 h at T = 125 °C at rated power	± (2.0 % + 0.0005 Ω)
Resistance to solder heat	MIL-STD-202, method 210, +260 °C solder, 10 s to 12 s dwell, 25 mm/s emergence	± (1.0 % + 0.0005 Ω)
Moisture resistance	MIL-STD-202, method 106, 0 % power, 7a and 7b not required	± (2.0 % + 0.0005 Ω)

PACKAGING					
MODEL	**REEL**				
	TAPE WIDTH	**DIAMETER**	**PITCH**	**PIECES/REEL**	**CODE**
RCWK0306	8 mm/punched paper	180 mm/7"	4 mm	5000	EA

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