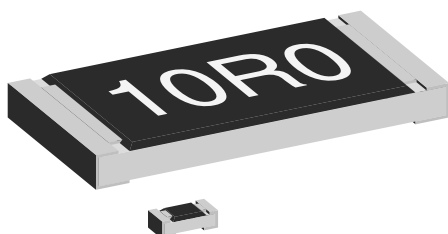


Automotive Grade Thick Film, Rectangular Chip Resistors



FEATURES

- Metal glaze on high quality ceramic with protective overglaze
- Sulfur resistant
- Superior resistance against H₂S-atmosphere than standard Ag contacts
- Solder contacts on Ni barrier layer
- Excellent stability ($\Delta R/R \leq \pm 0.5\%$ for 1000 h at 70 °C) different environmental conditions
- High volume product suitable for commercial and special applications
- Automotive Grade = sulfur resistant

STANDARD ELECTRICAL SPECIFICATIONS

MODEL	SIZE		POWER RATING $P_{70\text{ }^{\circ}\text{C}}$ W	LIMITING ELEMENT VOLTAGE MAX. V $\equiv$	TEMPERATURE COEFFICIENT ppm/K	TOLERANCE %	RESISTANCE RANGE Ω	E-SERIES
	INCH	METRIC	CECC 40401-802/EIA-575					
RCA0402	0402	1005	0.063	50	± 50 ± 100 ± 100 ± 200 ± 200	$\pm 0.5, \pm 1$ ± 0.5 ± 1 ± 1 ± 5	100R - 1M0 10R - 1M0 10R - 5M6 1R0 - 9R76 1R0 - 10M	24 + 96 24 + 96 24 + 96 24 + 96 24
			Zero-Ohm-Resistor: $R_{\text{max.}} = 40\text{ m}\Omega$ $I_{\text{max.}} = 1\text{ A}$					
RCA0603	0603	1608	0.10	75	± 50 ± 100 ± 200 ± 200	$\pm 0.5, \pm 1$ $\pm 0.5, \pm 1$ ± 1 ± 5	100R - 10M 10R - 10M 1R0 - 9R76 1R0 - 10M	24 + 96 24 + 96 24 + 96 24
			Zero-Ohm-Resistor: $R_{\text{max.}} = 40\text{ m}\Omega$ $I_{\text{max.}} = 1.5\text{ A}$					
RCA0805	0805	2012	0.125	150	± 50 ± 100 ± 100 ± 200	$\pm 0.5, \pm 1$ ± 0.5 ± 1 ± 5	100R - 10M 10R - 10M 1R0 - 10M 1R0 - 10M	24 + 96 24 + 96 24 + 96 24
			Zero-Ohm-Resistor: $R_{\text{max.}} = 40\text{ m}\Omega$ $I_{\text{max.}} = 2\text{ A}$					
RCA1206	1206	3216	0.25	200	± 50 ± 100 ± 100 ± 200	$\pm 0.5, \pm 1$ ± 0.5 ± 1 ± 5	100R - 10M 10R - 10M 1R0 - 10M 1R0 - 10M	24 + 96 24 + 96 24 + 96 24
			Zero-Ohm-Resistor: $R_{\text{max.}} = 20\text{ m}\Omega$ $I_{\text{max.}} = 2.5\text{ A}$					
RCA1210	1210	3225	0.33	200	± 50 ± 100 ± 100 ± 200	$\pm 0.5, \pm 1$ ± 0.5 ± 1 ± 5	100R - 1M0 100R - 1M0 1R0 - 1M0 1R0 - 1M0	24 + 96 24 + 96 24 + 96 24
			Zero-Ohm-Resistor: $R_{\text{max.}} = 20\text{ m}\Omega$ $I_{\text{max.}} = 2.5\text{ A}$					
RCA1218	1218	3246	1.0	200	± 50 ± 100 ± 100 ± 200	$\pm 0.5, \pm 1$ ± 0.5 ± 1 ± 5	100R - 2M2 100R - 2M2 1R0 - 2M2 1R0 - 2M2	24 + 96 24 + 96 24 + 96 24
			Zero-Ohm-Resistor: $R_{\text{max.}} = 20\text{ m}\Omega$ $I_{\text{max.}} = 4\text{ A}$					
RCA2010	2010	5025	0.50	400	± 50 ± 100 ± 100 ± 200	$\pm 0.5, \pm 1$ ± 0.5 ± 1 ± 5	100R - 10M 10R - 10M 1R0 - 10M 1R0 - 10M	24 + 96 24 + 96 24 + 96 24
			Zero-Ohm-Resistor: $R_{\text{max.}} = 20\text{ m}\Omega$ $I_{\text{max.}} = 3\text{ A}$					
RCA2512	2512	6332	1.0	500	± 50 ± 100 ± 100 ± 200	$\pm 0.5, \pm 1$ ± 0.5 ± 1 ± 5	100R - 10M 10R - 10M 1R0 - 10M 1R0 - 10M	24 + 96 24 + 96 24 + 96 24
			Zero-Ohm-Resistor: $R_{\text{max.}} = 20\text{ m}\Omega$ $I_{\text{max.}} = 4\text{ A}$					

Notes:

- Ask about further value ranges
- Marking and packaging: see appropriate catalog or web pages
- Power rating depends on the max. temperature at the solder point, the component placement density and the substrate material

TECHNICAL SPECIFICATIONS

PARAMETER	UNIT	RCA0402	RCA0603	RCA0805	RCA1206	RCA1210	RCA1218	RCA2010	RCA2512
Rated Dissipation at 70 °C (CECC 40401 EIA 575)	W	0.063	0.10	0.125	0.25	0.33	1.0	0.5	1.0
Limiting Element Voltage ⁽²⁾	V _≡	50	75	150	200	200	200	400	500
Insulation Voltage (1 min)	V _{peak}	> 75	> 100	> 200	> 300	> 300	> 300	> 300	> 300
Thermal Resistance	K/W	≤ 870 ⁽¹⁾	≤ 550 ⁽¹⁾	≤ 440 ⁽¹⁾	≤ 220 ⁽¹⁾	≤ 140 ⁽³⁾	⁽³⁾	≤ 88 ⁽³⁾	≤ 65 ⁽³⁾
Insulation Resistance	Ω	> 10 ⁹							
Category Temperature Range	°C	- 55 to + 125 (+ 155)							
Failure Rate	h ⁻¹	0.3 × 10 ⁻⁹							
Weight/1000 pieces	g	0.65	2	5.5	10	16	29.5	25.5	40.5

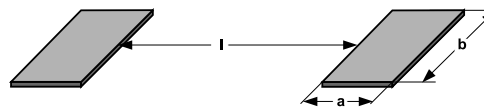
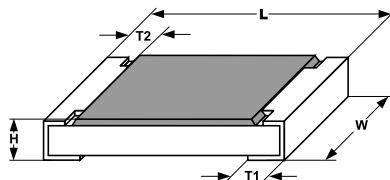
Notes:

⁽¹⁾ Measuring conditions in acc. to CECC 40401

⁽²⁾ Rated voltage: $\sqrt{P \times R}$

⁽³⁾ Depending on solder pad dimensions

DIMENSIONS



SIZE		DIMENSIONS [in millimeters]					SOLDER PAD DIMENSIONS [in millimeters]					
INCH	METRIC	L	W	H	T1	T2	REFLOW SOLDERING			WAVE SOLDERING		
0402	1005	1.0 ± 0.05	0.5 ± 0.05	0.35 ± 0.05	0.25 ± 0.05	0.2 ± 0.1	a	b	l	a	b	l
0603	1608	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
0805	2012	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
1206	3216	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
1210	3225	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
1218	3246	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
2010	5025	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
2512	6332	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

PART NUMBER AND PRODUCT DESCRIPTION RCA - SERIES

PART NUMBERING: RCA080510K0FKTA

R	C	A	0	8	0	5	1	0	K	0	F	K	T	A		
MODEL		SIZE		VALUE			TOLERANCE		TCR		PACKAGING ⁽¹⁾			SPECIAL		
RCA		0402 1210 0603 1218 0805 2010 1206 2512		R = Decimal K = Thousand M = Million 1K32 = 1.32 kΩ 10R0 = 10 Ω 0000 = Jumper			D = ± 0.5 % F = ± 1.0 % J = ± 5.0 %		H = ± 50 ppm/K K = ± 100 ppm/K N = ± 200 ppm/K		TA = RT1 TG = R67 TB = RT5 TH = R82 TC = RT6 TK = RT9 TD = RT7 BA = B27 TF = R02			Up to 2 digits		

PRODUCT DESCRIPTION: RCA0805 10K 1 % 100 RT1

RCA0805		10K		1 %		100		RT1	
MODEL		RESISTANCE VALUE		TOLERANCE		TCR		PACKAGING ⁽¹⁾	
RCA0402 RCA1210 RCA0603 RCA1218 RCA0805 RCA2010 RCA1206 RCA2512		49R9 = 49.9 Ω 3011 = 3.01 kΩ		± 0.5 % ± 1 % ± 5 %		± 50 ppm/K ± 100 ppm/K ± 200 ppm/K		RT1 R67 RT5 R82 RT6 RT9 RT7 B27 R02	

Notes:

⁽¹⁾ Please refer to table PACKAGING, see next page

• Products can be ordered either using the PRODUCT DESCRIPTION or PART NUMBER

PACKAGING								
MODEL	REEL					BULK		
	TAPE WIDTH	DIAMETER	PIECES/REEL	PITCH	PACKING CODE		BULK FEEDING MAGAZINE PIECES/MAGAZINE	
					PAPER	BLISTER	PIECES	CODE
RCA0402	8 mm	180 mm/7"	10 000	2 mm	RT7		50 000	B27
		330 mm/13"	50 000	2 mm	RF4			
RCA0603	8 mm	180 mm/7"	5000	4 mm	RT1		25 000	B27
		255 mm/10"	10 000	4 mm	RT5			
		330 mm/13"	20 000	4 mm	RT6			
RCA0805	8 mm	180 mm/7"	5000	4 mm	RT1		10 000	B27
		255 mm/10"	10 000	4 mm	RT5			
		330 mm/13"	20 000	4 mm	RT6			
RCA1206	8 mm	180 mm/7"	5000	4 mm	RT1			
		255 mm/10"	10 000	4 mm	RT5			
		330 mm/13"	20 000	4 mm	RT6			
RCA1210	8 mm	180 mm/7"	5000	4 mm	RT1			
		330 mm/13"	20 000	4 mm	RT6			
RCA1218	12 mm	180 mm/7"	4000	4 mm		RT9		
RCA2010	12 mm	180 mm/7"	4000	4 mm		R02		
RCA2512	12 mm	180 mm/7"	2000	8 mm		R67		
			4000	4 mm		R82		



Automotive Grade
Thick Film, Rectangular Chip Resistors

RCA
Vishay

PERFORMANCE				
TEST	CONDITIONS OF TEST	TEST RESULTS %		
		0402 0603	0805 1206 1210	1218 2010 2512
Endurance Test at 70 °C IEC 60115-1 4.25.1	1000 h at 70 °C, 1.5 h ON, 0.5 h OFF	$\leq \pm 1.0$	$\leq \pm 0.5$	$\leq \pm 1.0$
Endurance at UCT IEC 60115-1 4.25.3	1000 h at 125 °C without load	$\leq \pm 1.0$	$\leq \pm 0.5$	$\leq \pm 1.0$
Overload Test IEC 60115-1 4.13	Short time overload 2.5 x rated voltage or ≤ 2 x limiting element voltage.	$\leq \pm 0.25$	$\leq \pm 0.25$	$\leq \pm 0.5$
Thermal Shock IEC 60115-1 4.19; IEC 60068-2-14;	Rapid change between upper and lower category temperature	$\leq \pm 0.25$	$\leq \pm 0.25$	$\leq \pm 0.5$
Damp Heat Steady State IEC 60115-1 4.24; IEC 60068-2-3	56 days at 40 °C and 93 % relative humidity	$\leq \pm 1.0$	$\leq \pm 0.5$	$\leq \pm 1.0$
Resistance to Soldering Heat IEC 60115-1 4.18; IEC 60068-2-20	10 s at 260 °C solder bath temperature	$\leq \pm 0.25$	$\leq \pm 0.25$	$\leq \pm 0.5$

Note:

- For more details please refer to datasheet D../CRCW



Disclaimer

ALL PRODUCT, PRODUCT SPECIFICATIONS AND DATA ARE SUBJECT TO CHANGE WITHOUT NOTICE TO IMPROVE RELIABILITY, FUNCTION OR DESIGN OR OTHERWISE.

Vishay Intertechnology, Inc., its affiliates, agents, and employees, and all persons acting on its or their behalf (collectively, "Vishay"), disclaim any and all liability for any errors, inaccuracies or incompleteness contained in any datasheet or in any other disclosure relating to any product.

Vishay makes no warranty, representation or guarantee regarding the suitability of the products for any particular purpose or the continuing production of any product. To the maximum extent permitted by applicable law, Vishay disclaims (i) any and all liability arising out of the application or use of any product, (ii) any and all liability, including without limitation special, consequential or incidental damages, and (iii) any and all implied warranties, including warranties of fitness for particular purpose, non-infringement and merchantability.

Statements regarding the suitability of products for certain types of applications are based on Vishay's knowledge of typical requirements that are often placed on Vishay products in generic applications. Such statements are not binding statements about the suitability of products for a particular application. It is the customer's responsibility to validate that a particular product with the properties described in the product specification is suitable for use in a particular application. Parameters provided in datasheets and / or specifications may vary in different applications and performance may vary over time. All operating parameters, including typical parameters, must be validated for each customer application by the customer's technical experts. Product specifications do not expand or otherwise modify Vishay's terms and conditions of purchase, including but not limited to the warranty expressed therein.

Hyperlinks included in this datasheet may direct users to third-party websites. These links are provided as a convenience and for informational purposes only. Inclusion of these hyperlinks does not constitute an endorsement or an approval by Vishay of any of the products, services or opinions of the corporation, organization or individual associated with the third-party website. Vishay disclaims any and all liability and bears no responsibility for the accuracy, legality or content of the third-party website or for that of subsequent links.

Except as expressly indicated in writing, Vishay products are not designed for use in medical, life-saving, or life-sustaining applications or for any other application in which the failure of the Vishay product could result in personal injury or death. Customers using or selling Vishay products not expressly indicated for use in such applications do so at their own risk. Please contact authorized Vishay personnel to obtain written terms and conditions regarding products designed for such applications.

No license, express or implied, by estoppel or otherwise, to any intellectual property rights is granted by this document or by any conduct of Vishay. Product names and markings noted herein may be trademarks of their respective owners.