

Carbon Film Resistors, Standard



FEATURES

- Securely bonded carbon film
- Good moisture resistance ($\Delta R_{\max} \leq \pm 1.5 \% R$)
- Good long term stability ($\Delta R_{\max} \leq \pm 1.5 \% R$, for 1000 h)
- Lead (Pb)-free solder contacts
- Pure tin plating provides compatibility with lead (Pb)-free and lead containing soldering processes
- Compatible with "Restriction of the use of Hazardous Substances" (RoHS) directive 2002/95/EC (issue 2004)
- Low Noise (refer to graph)
- Suitable for general purpose commercial electronics and pulse load applications



STANDARD ELECTRICAL SPECIFICATIONS

MODEL	SIZE	POWER RATING $P_{70^\circ\text{C}}$ W	LIMITING ELEMENT VOLTAGE MAX. V_{\equiv}	TOLERANCE $\pm \%$	RESISTANCE RANGE Ω	E-SERIES
LCA0204	0204	0.25	200	± 2 ± 5	10R - 470K 1R0 - 1M0	24 24
LCA0207	0207	0.35	300	± 2 ± 5	1R0 - 1M0 R22 - 5M1	24 24
LCA0411	0411	0.55	500	± 2 ± 5	1R0 - 1M0 R22 - 10M	24 24
LCA0414	0414	0.6	500	± 2 ± 5	1R0 - 1M0 R22 - 10M	24 24

Notes

- Coating: Beige
- Marking: color code

TECHNICAL SPECIFICATIONS

PARAMETER	UNIT	LCA0204	LCA0207	LCA0411	LCA0414
Rated Dissipation at 70 °C	W	0.25	0.35	0.55	0.6
Limiting Element Voltage ¹⁾	V_{\equiv}	≤ 200	≤ 300	≤ 500	≤ 500
Limiting Voltage, short-time	V_{\equiv}		500	700	1000
Insulation Voltage (1 min)	V-	> 300	> 700	> 700	> 700
Thermal Resistance	K/W	≤ 300	≤ 220	≤ 150	≤ 140
Insulation Resistance	Ω	$\geq 10^{11}/h$			
Terminal Strength, axial	N	> 30	> 50	> 60	> 80
Category Temperature Range	°C	- 55 to + 155			
Failure Rate	$10^{-9}/h$	< 10			
Weight	g	0.1	0.21	0.5	0.68

Note

1. Rated Voltage $\sqrt{P \times R}$



PART NUMBER AND PRODUCT DESCRIPTION LCA-SERIES

PART NUMBER: LCA0204002401J2500

L	C	A	0	2	0	4	0	0	2	4	0	1	J	2	5	0	0
---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---

MODEL/SIZE LCA0204 LCA0207 LCA0411 LCA0414	SPECIAL CHARACTER 0 = neutral	TCR 0 = neutral see diagram	VALUE 3 digit value 1 digit multiplier MULTIPLIER 7 = *10 ⁻³ 8 = *10 ⁻² 9 = *10 ⁻¹ 0 = *10 ⁰ 1 = *10 ¹ 2 = *10 ² 3 = *10 ³ 4 = *10 ⁴ 5 = *10 ⁵ 6 = *10 ⁶	TOLERANCE G = ± 2 % J = ± 5 %	PACKAGING 12 = A2(G26) 22 = A2(G53) 25 = A5 21 = A1(G53) 41 = A1(G73) D5 = R5 DE = RE F2 = R2	SPECIAL up to 2 digits 00 = standard
---	---	--	---	--	--	---

PRODUCT DESCRIPTION: LCA0204 2K4 5 % A5

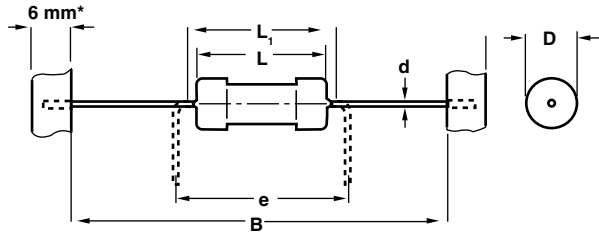
<table border="1" style="width: 100%;"> <tr><td style="text-align: center;">LCA0204</td></tr> <tr><td style="text-align: center;">MODEL</td></tr> <tr><td style="text-align: center;">LCA0204 LCA0207 LCA0411 LCA0414</td></tr> </table>	LCA0204	MODEL	LCA0204 LCA0207 LCA0411 LCA0414	<table border="1" style="width: 100%;"> <tr><td style="text-align: center;">2K4</td></tr> <tr><td style="text-align: center;">RESISTANCE VALUE</td></tr> <tr><td style="text-align: center;">220K = 220 kΩ 10R = 10 Ω</td></tr> </table>	2K4	RESISTANCE VALUE	220K = 220 kΩ 10R = 10 Ω	<table border="1" style="width: 100%;"> <tr><td style="text-align: center;">5 %</td></tr> <tr><td style="text-align: center;">TOLERANCE</td></tr> <tr><td style="text-align: center;">± 2 % ± 5 %</td></tr> </table>	5 %	TOLERANCE	± 2 % ± 5 %	<table border="1" style="width: 100%;"> <tr><td style="text-align: center;">A5</td></tr> <tr><td style="text-align: center;">PACKAGING¹⁾</td></tr> <tr><td style="text-align: center;">A2 (G26) A2 (G53) A5 A1 (G53) A1 (G73) R5 RE R2</td></tr> </table>	A5	PACKAGING ¹⁾	A2 (G26) A2 (G53) A5 A1 (G53) A1 (G73) R5 RE R2
LCA0204															
MODEL															
LCA0204 LCA0207 LCA0411 LCA0414															
2K4															
RESISTANCE VALUE															
220K = 220 kΩ 10R = 10 Ω															
5 %															
TOLERANCE															
± 2 % ± 5 %															
A5															
PACKAGING ¹⁾															
A2 (G26) A2 (G53) A5 A1 (G53) A1 (G73) R5 RE R2															

¹⁾ Please refer to table PACKAGING.

Note: The PART NUMBER shown above is to facilitate the unified part numbering system for ordering products.

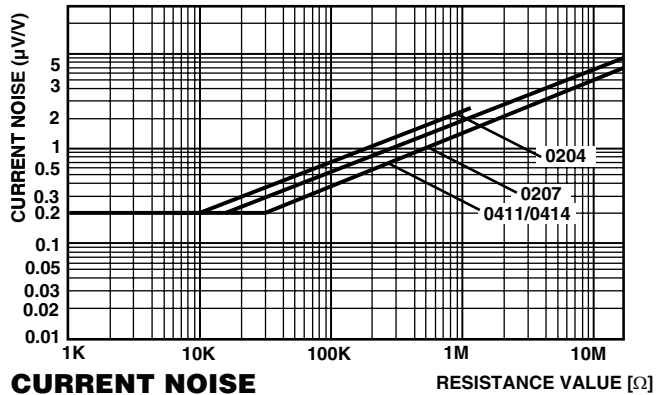
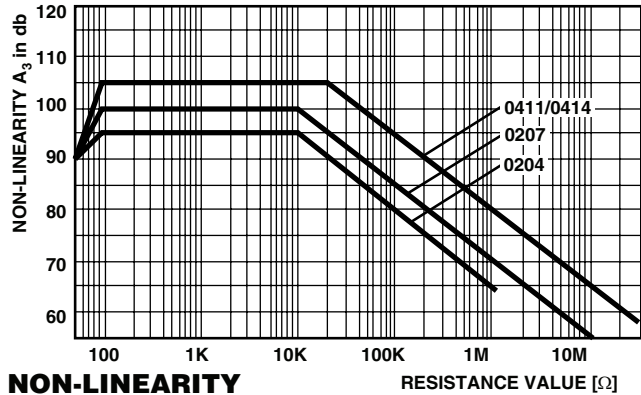
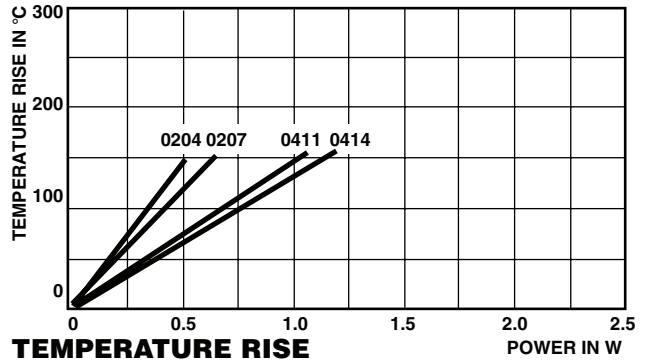
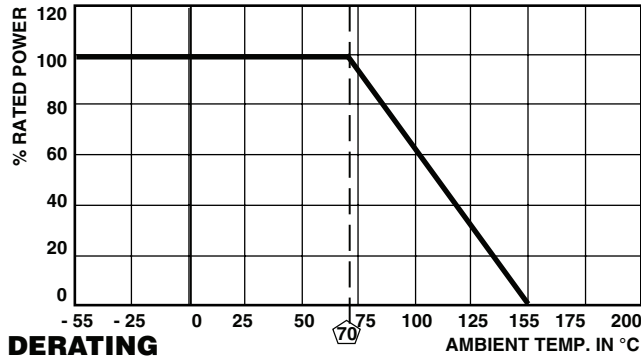
PACKAGING						
MODEL	REEL			BOX		
	PIECES/REEL	CODE	MIN. ORDER QTY PACKAGING UNITS	PIECES/BOX	CODE	MIN. ORDER QTY PACKAGING UNITS
LCA0204	5000	R5	1	5000 2000	A5 A2	1 1
LCA0207	5000	R5	1	5000 2000	A5 A2	1 1
LCA0411	2500	RE	1	1000	A1	1
LCA0414	2000	R2	1	1000	A1	1

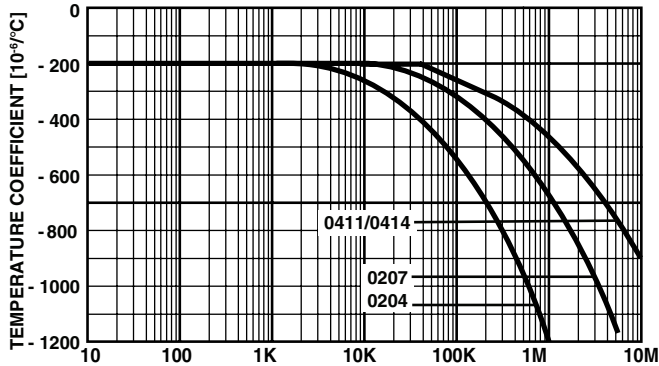
DIMENSIONS



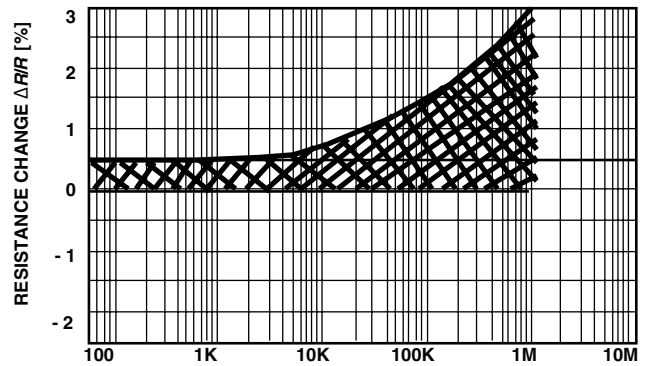
- 1) Also available in 26 mm tape spacing
- 2) Also available in 73 mm tape spacing
- Taping in acc. with IEC60286-1
- D and L measured in acc. with IEC60294
- d according to IEC60301

MODEL	DIMENSIONS [in millimeters]					
	D _{max}	L	L1	B	d	e
LCA0204	1.6 - 0.3	3.6 - 0.4	5.0	53 ± 1	0.5	5.0
LCA0207	2.4 - 0.3	6.1 - 0.5	8.1	53 ± 1 ¹⁾	0.6	7.5
LCA0411	3.7 - 0.4	10.5 - 0.6	12.5	53 ± 1 ²⁾	0.7	12.5
LCA0414	4.2 - 0.5	12.2 - 0.7	14.2	53 ± 1 ²⁾	0.8	15.0



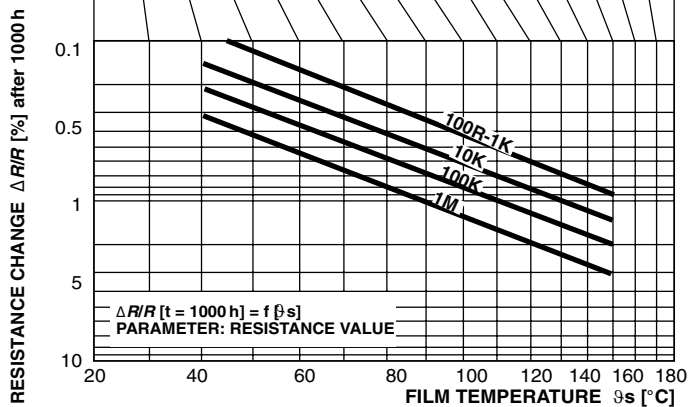
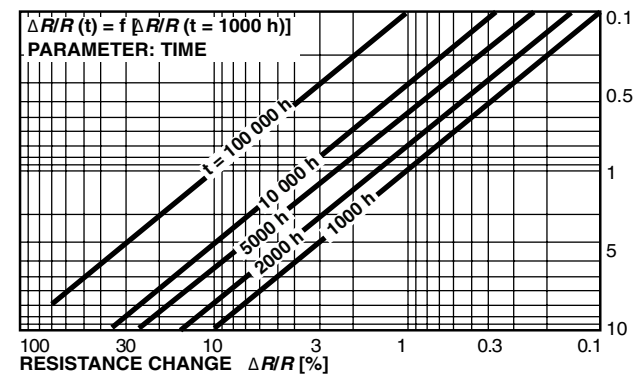
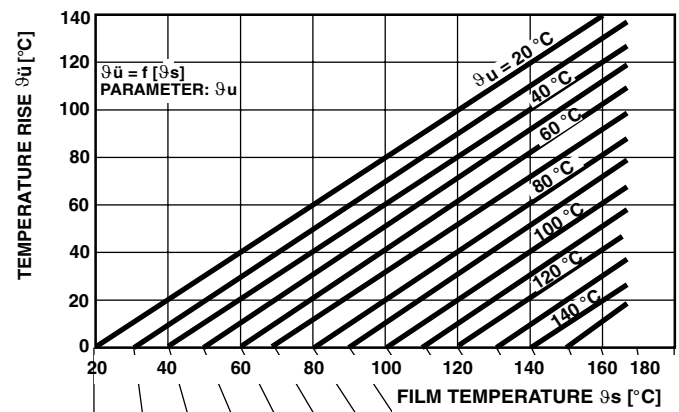
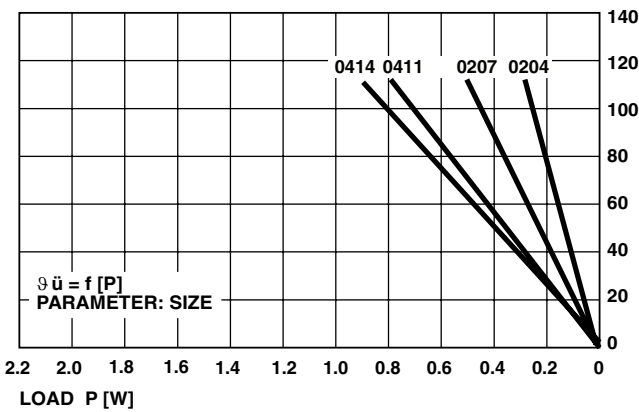


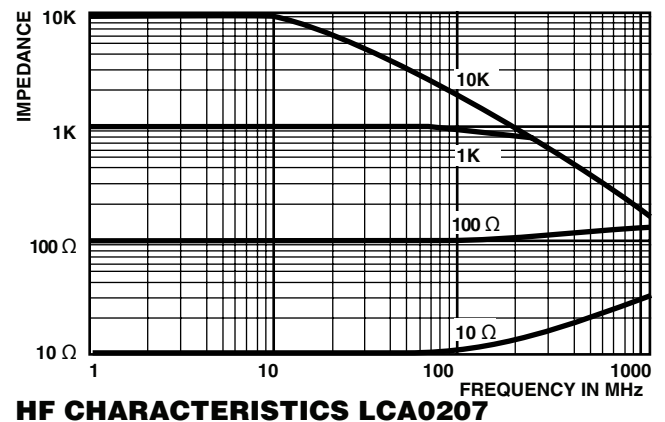
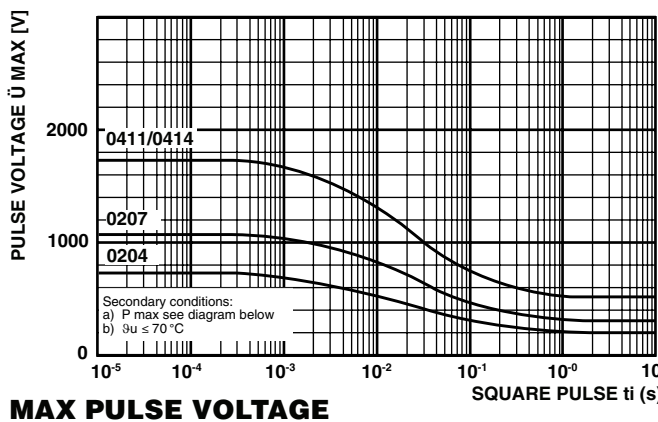
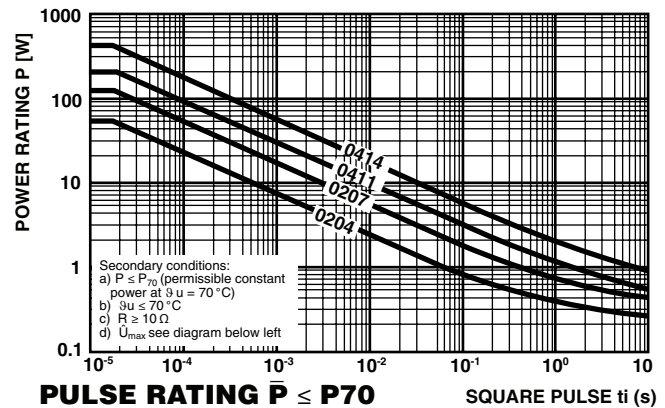
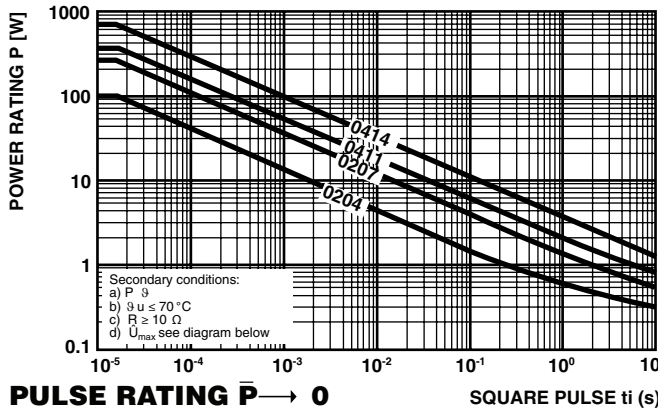
TEMPERATURE COEFFICIENT
(mean value) between - 25... + 125 °C deviation $\pm 25\%$



ENDURANCE
at upper category temperature, 155 °C 1000 h

STABILITY NOMOGRAM, TYPICAL VALUES (For handling see General Information)





PERFORMANCE CHARACTERISTICS		
TEST	CONDITIONS OF TEST	REQUIREMENTS ¹⁾
Endurance Test at 70 °C IEC 60115-1 4.25.1	1000 hours at 70 °C, 1.5 hours "ON", 0.5 hours "OFF" 8000 hours at 70 °C, 1.5. hours "ON", 0.5 hours "OFF"	$\leq \pm 1.5 \%$ $\leq \pm 4.0 \%$
Endurance at UCT IEC 60115-1 4.25.3	1000 hours at 155 °C without load 8000 hours at 155 °C without load	$\leq \pm 3.0 \%$ $\leq \pm 8.0 \%$
Overload Test IEC 60115-1 4.13	2.5 x rated power or twice the limiting element voltage, 2 seconds for sizes ≤ 0207 ; 5 seconds for sizes ≥ 0309	$\leq \pm 0.5 \%$
Thermal Shock IEC 60115-1 4.19, IEC 60068-2-14	Rapid change between upper and lower category temperature	$\leq \pm 0.25 \%$
Climatic Sequence IEC 60115-1 4.23	Dry heat, damp heat cyclic, cold, low air pressure	$\leq \pm 1.5 \%$
Damp Heat Steady State IEC 60115 4.24, IEC 60068-2-3	56 days at 40 °C, 93 % relative humidity	$\leq \pm 1.5 \%$
Resistance to Soldering Heat IEC 60115-1 4.18, IEC 60068-2-20	10 seconds at 260 °C solder bath temperature	$\leq \pm 0.25 \%$
Robustness of Terminations IEC 60115-1 4.16, IEC 60068-2-21	Tensile, bending and torsion	$\leq \pm 0.25 \%$
Vibration IEC 60115-1 4.22, IEC 60068-2-6	0.75 mm or 10 g 10 Hz - 500 Hz 6 hours	$\leq \pm 0.25 \%$

Note
1. For ohmic values between 10 Ω and 1 M Ω

APPLICABLE SPECIFICATIONS
<ul style="list-style-type: none"> • CECC 40000/40100/40101 • EN 140000/140 100



Disclaimer

All product specifications and data are subject to change without notice.

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 herein or in any other disclosure relating to any product.

Vishay disclaims any and all liability arising out of the use or application of any product described herein or of any information provided herein to the maximum extent permitted by law. The product specifications do not expand or otherwise modify Vishay's terms and conditions of purchase, including but not limited to the warranty expressed therein, which apply to these products.

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.

The products shown herein are not designed for use in medical, life-saving, or life-sustaining applications unless otherwise expressly indicated. Customers using or selling Vishay products not expressly indicated for use in such applications do so entirely at their own risk and agree to fully indemnify Vishay for any damages arising or resulting from such use or sale. Please contact authorized Vishay personnel to obtain written terms and conditions regarding products designed for such applications.

Product names and markings noted herein may be trademarks of their respective owners.

X-ON Electronics

Largest Supplier of Electrical and Electronic Components

Click to view similar products for [Carbon Film Resistors - Through Hole](#) category:

Click to view products by [Vishay](#) manufacturer:

Other Similar products are found below :

[RCFQ-100-5TA](#) [RCFQ-100K-5TA](#) [RCFQ-10-5TA](#) [RCFQ-11-5TA](#) [RCFQ-12-5TA](#) [RCFQ-150K-5TA](#) [RCFQ-15K-5TA](#) [RCFQ-160-5TA](#)
[RCFQ-160K-5TA](#) [RCFQ-180-5TA](#) [RCFQ-18-5TA](#) [RCFQ-18K-5TA](#) [RCFQ-220-5TA](#) [RCFQ-240K-5TA](#) [RCFQ-24-5TA](#) [RCFQ-270K-5TA](#)
[RCFQ-27-5TA](#) [RCFQ-330K-5TA](#) [RCFQ-33K-5TA](#) [RCFQ-360-5TA](#) [RCFQ-360K-5TA](#) [RCFQ-390K-5TA](#) [RCFQ-430K-5TA](#) [RCFQ-43-5TA](#)
[RCFQ-47-5TA](#) [RCFQ-62-5TA](#) [RCFQ-680-5TA](#) [RCFQ-750-5TA](#) [RCFQ-91-5TA](#) [RCFQ-91K-5TA](#) [CF1/4-2.2K-5%](#) [CF1/4-8.2M-5%](#)
[CFS1/2C512J](#) [RCFQ-110-5TA](#) [RCFQ-110K-5TA](#) [RCFQ-11K-5TA](#) [RCFQ-120K-5TA](#) [RCFQ-130-5TA](#) [RCFQ-13-5TA](#) [RCFQ-150-5TA](#)
[RCFQ-15-5TA](#) [RCFQ-1-5TA](#) [RCFQ-16-5TA](#) [RCFQ-16K-5TA](#) [RCFQ-20K-5TA](#) [RCFQ-220K-5TA](#) [RCFQ-22-5TA](#) [RCFQ-22K-5TA](#) [RCFQ-240-5TA](#) [RCFQ-24K-5TA](#)