

Standard Carbon Film Leaded Resistors



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)
- Low noise (refer to graph)
- Suitable for general purpose commercial electronics and pulse load applications
- Lead (Pb)-free solder contacts
- Pure tin plating provides compatibility with lead (Pb)-free and lead containing soldering processes
- Material categorization: For definitions of compliance please see www.vishay.com/doc?999912


RoHS
COMPLIANT

STANDARD ELECTRICAL SPECIFICATIONS

MODEL	SIZE	POWER RATING P_{70} W	LIMITING ELEMENT VOLTAGE $U_{\max.}$ V_{\equiv}	TOLERANCE $\pm \%$	RESISTANCE RANGE Ω	E-SERIES
LCA0207	0207	0.35	300	2 5	1 to 1M 0.22 to 5.1M	E24
LCA0414	0414	0.6	500	2 5	1 to 1M 0.22 to 10M	E24

Notes

- Coating: Light blue.
- Marking: Color coded. Additional blue color marking after second band.

TECHNICAL SPECIFICATIONS

PARAMETER	UNIT	LCA0207	LCA0414
Rated dissipation, P_{70}	W	0.35	0.6
Limiting element voltage, $U_{\max.}$ ⁽¹⁾	V_{\equiv}	≤ 300	≤ 500
Limiting voltage, short-time	V_{\equiv}	500	1000
Insulation voltage, U_{ins} (1 min)	V	> 700	> 700
Thermal resistance	K/W	≤ 220	≤ 140
Insulation resistance	Ω	$\geq 10^{11}$	
Category temperature range	$^{\circ}\text{C}$	- 55 to + 155	
Failure rate	$10^{-9}/\text{h}$	< 10	
Weight	g	0.21	0.68

Note

⁽¹⁾ Rated voltage $\sqrt{P \times R}$.

PART NUMBER AND PRODUCT DESCRIPTION																	
Part Number: LCA0207002401J2500																	
L	C	A	0	2	0	7	0	0	2	4	0	1	J	2	5	0	0
MODEL/SIZE LCA0207 LCA0414		VARIANT 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 ⁽¹⁾ 25 = A5 22 = A2 (G53) 21 = A1 D5 = R5 D2 = R2		SPECIAL Up to 2 digits 00 = Standard				
Product Description: LCA0207 2K4 5 % A5																	
LCA0207		2K4		5 %		A5											
MODEL LCA0207 LCA0414		RESISTANCE VALUE 220K = 220 kΩ 10R = 10 Ω		TOLERANCE ± 2 % ± 5 %		PACKAGING ⁽¹⁾ A5, R5 A1, R2 A2											

Notes

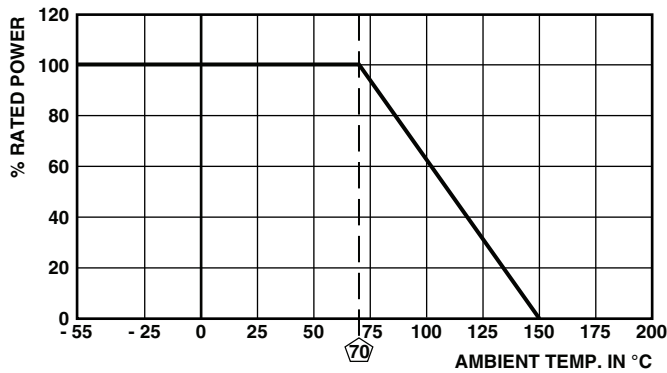
- The PART NUMBER shown above is to facilitate the unified part numbering system for ordering products.
- ⁽¹⁾ Please refer to table PACKAGING.

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

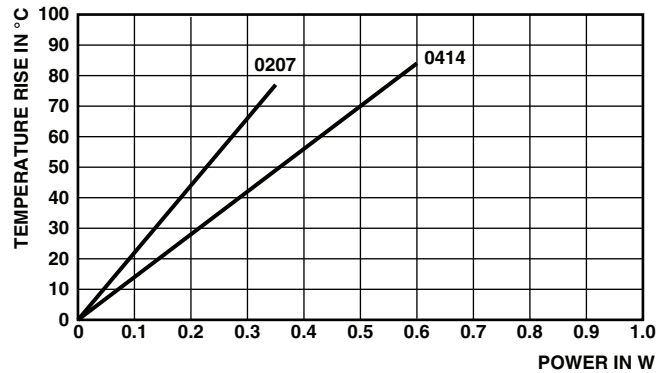
DIMENSIONS in millimeters						
MODEL	D _{max.}	L	L ₁	B	d	e
LCA0207	2.4 - 0.3	6.1 - 0.5	8.1	53 ± 1	0.6	7.5
LCA0414	4.2 - 0.5	12.2 - 0.7	14.2	53 ± 1	0.8	15.0

Notes

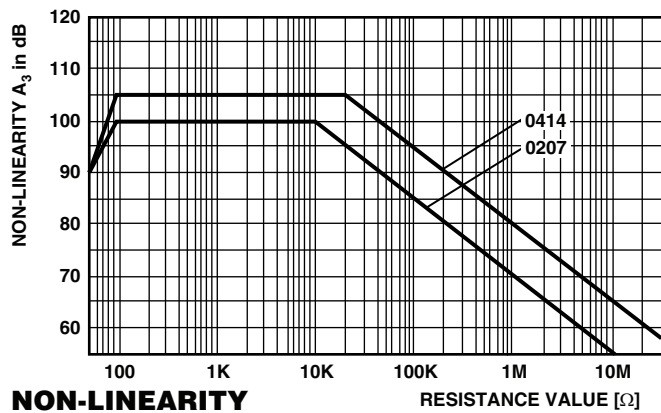
- Taping in according with IEC 60286-1.
- D and L measured in according with IEC 60294.
- d according to IEC 60301.



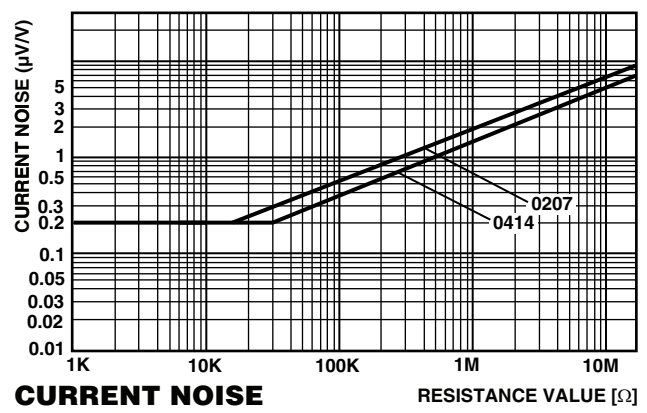
DERATING



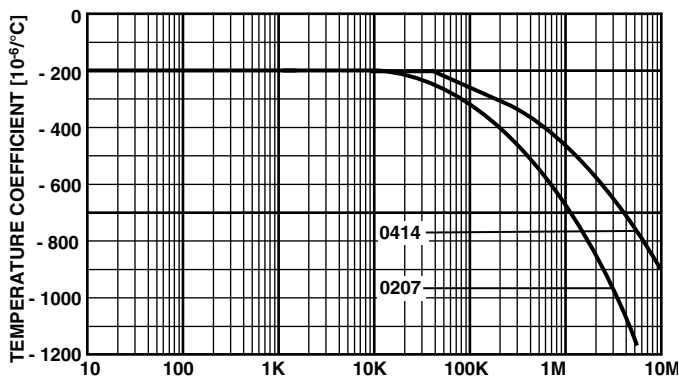
TEMPERATURE RISE



NON-LINEARITY

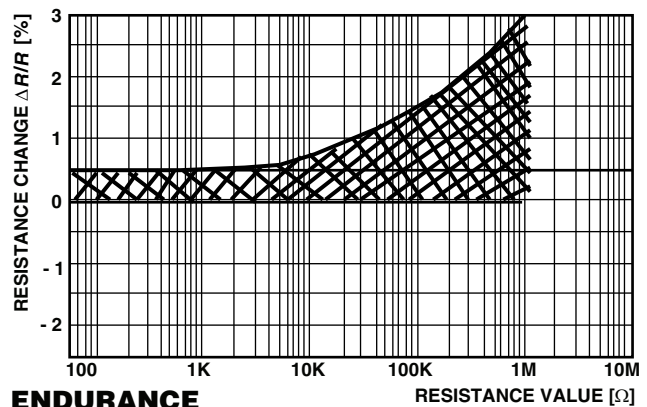


CURRENT NOISE



TEMPERATURE COEFFICIENT

(mean value) between - 25 °C to + 125 °C deviation ± 25 %

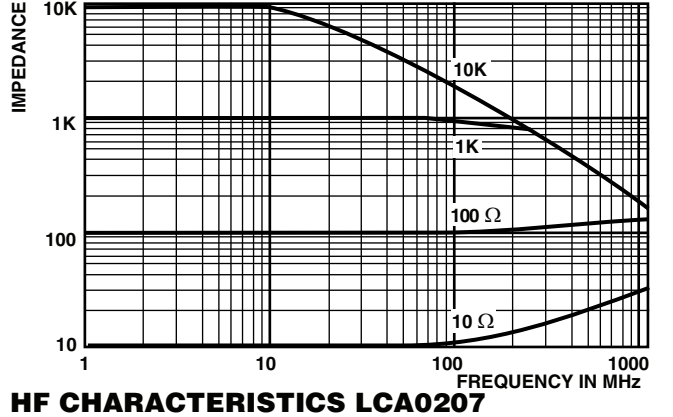
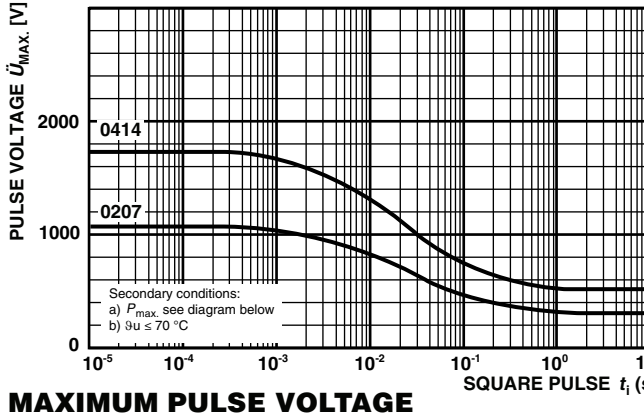
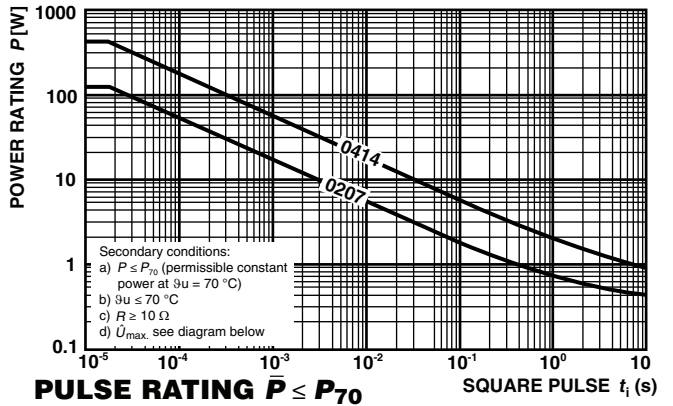
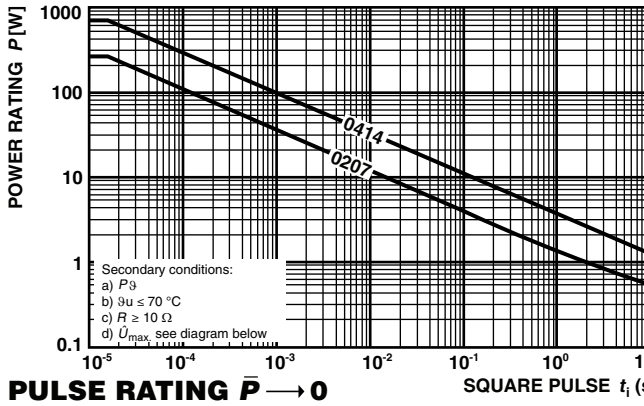
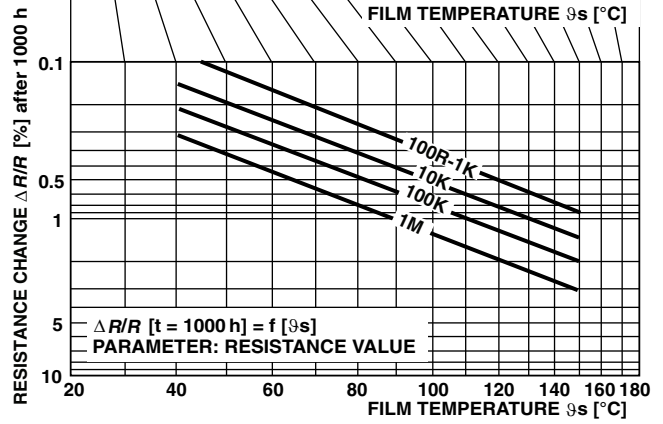
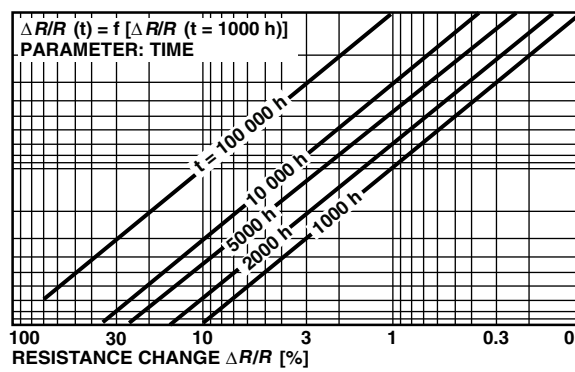
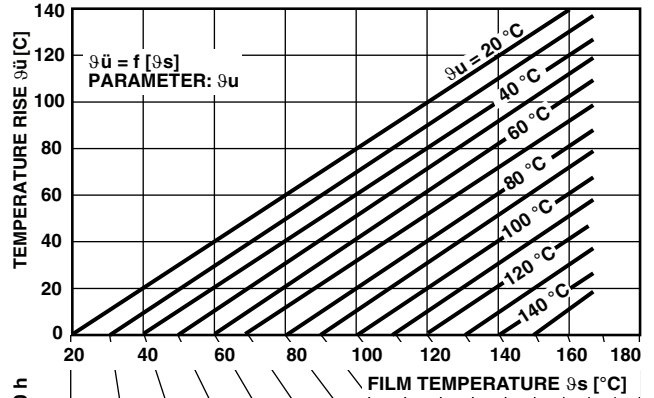
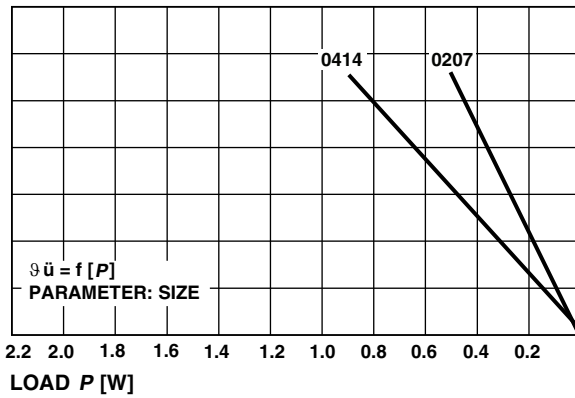


ENDURANCE

at upper category temperature, 155 °C 1000 h



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





PERFORMANCE CHARACTERISTICS		
TEST	CONDITIONS OF TEST	REQUIREMENTS ($\Delta R/R$) ⁽¹⁾
Endurance test at 70 °C IEC 60115-1, 4.25.1	1000 h at 70 °C, 1.5 h ON, 0.5 h OFF 8000 h at 70 °C, 1.5. h ON, 0.5 h OFF	$\leq \pm 1.5 \%$ $\leq \pm 4.0 \%$
Endurance at UCT IEC 60115-1, 4.25.3	1000 h at 155 °C without load 8000 h 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 s for size 0207; 5 s for size 0414	$\leq \pm 0.5 \%$
Thermal shock IEC 60115-1, 4.19	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	56 days; 40 °C; 90 % to 95 % RH; loaded with 0.01 P_{70}	$\leq \pm 1.5 \%$
Resistance to soldering heat IEC 60115-1, 4.18	10 s at 260 °C solder bath temperature	$\leq \pm 0.25 \%$
Robustness of terminations IEC 60115-1, 4.16	Tensile, bending and torsion	$\leq \pm 0.25 \%$
Vibration IEC 60115-1, 4.22	Frequency 10 Hz to 500 Hz; displacement 1.5 mm or acceleration 10 g; three directions; 6 h	$\leq \pm 0.25 \%$

Note

⁽¹⁾ For ohmic values between 10 Ω and 1 M Ω .

APPLICABLE SPECIFICATIONS
<ul style="list-style-type: none"> • CECC 40101-806 • EN 140100; EN 60115-1



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.

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.

X-ON Electronics

Largest Supplier of Electrical and Electronic Components

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

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

Other Similar products are found below :

[RESISTOR-0125-A](#) [MBA02040C3249FC100](#) [MRS16000C2200FCT00](#) [MRS16000C1501FCT00](#) [MRS16000C6803FCT00](#)

[MRS16000C2703FCT00](#) [MRS16000C4703FCT00](#) [MBA02040C1209FCT00](#) [MBA02040C2701FCT00](#) [MBA02040C3301FCT00](#)

[MBA02040C3901FCT00](#) [MBA02040C5600FCT00](#) [MBA02040C6809FC100](#) [MBB02070D9312BCT00](#) [MBA02040C1008FCT00](#)

[MBA02040C1200FCT00](#) [MBA02040C2202FCT00](#) [MBA02040C4754FRP00](#) [MBA02040C6041FRP00](#) [MBB02070C1821FRP00](#)

[MBB0207IC1001FCT00](#) [MFP1-10RJI](#) [MFP2-100KJI](#) [MFR4-1K0FI](#) [MFR4-220RFI](#) [MFR4-33RFI](#) [BPC5563K](#) [BPR5473J](#) [W21-1R2JI](#) [W31-](#)

[R056JA1](#) [WR404140A6803J4100](#) [MFR3-47KFC](#) [MFR4-1R0FI](#) [MFR4-390RFI](#) [MRS25000C2373FC100](#) [CF18JT47K0](#)

[MRS25000C1051FC100](#) [MFR5-15RFI](#) [MBB0207VD1004BC100](#) [BPC10203J](#) [RSF12JT150R](#) [RC14JT39K0](#) [MBA02040C6980FC100](#)

[MRS25000C2002FC100](#) [MRS25000C8200FC100](#) [MBA02040C1878FC100](#) [MBE04140C1200FC100](#) [MBA02040C1600FC100](#)

[MBA02040C7508FC100](#) [TNP10SC20R0FE](#)