

Zertifikat *Certificate*

Zertifikatsnummer *Certificate No.:*

R 60188127 0001

Berichtsnummer *Report No.:*

HU268LYR 002

Genehmigungsinhaber *License Holder:*

Novacap, LLC
25111 Anza Drive
Valencia CA 91355
USA

Fertigungsstätte *Manufacturing Site:*

040-0001539371

Prüfzeichen *Test Mark:*


Type Approved
Safety
Regular Production
Surveillance

www.tuv.com
ID 1111318680

Geprüft nach *Tested according to:*

EN IEC 60384-14:2023

Geräteidentifikation

Product Identification

Produkt:
Product:

Capacitor

(Multi-Layer Ceramic Capacitor)

Modell:
Type:

Modelle sind auf nächste(r) Seite(n) gelistet

Type designation(s) are listed on the next page(s)
Technische Daten:
Technical Data:

Rated voltage.....: 250 V a.c. or
250 V a.c./250 V a.c.

Rated frequency....: 50/60 Hz

Dielectric class...: Class I (C0G)

Type code.....: LS or ES

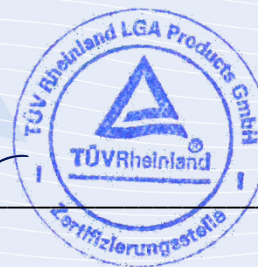
Class.....: X1 or X2 or Y2/X1

Trademark.....: knowles, NOVACAP

Gültig ab:
Valid from:
Zertifizierungsstelle:
Certification body:
Ausstellungsdatum: 2026-06-29

Date of issue:

Mózes Tibor



Dem Zertifikat liegt unsere Prüf- und Zertifizierungsordnung zugrunde und es bestätigt die Konformität des Produktes mit den oben genannten Standards und Prüfgrundlagen. Zusätzliche Anforderungen in Ländern, in denen das Produkt in Verkehr gebracht werden soll, müssen zusätzlich betrachtet werden. Die Herstellung des zertifizierten Produktes wird überwacht.

This certificate is based on our Testing and Certification Regulation and states the conformity of the product with the standards and testing requirements as indicated above. Any additional requirements in countries where the product is going to be marketed have to be considered additionally. The manufacturing of the certified product is subject to surveillance.

TÜV Rheinland LGA Products GmbH, Tillystraße 2, 90431 Nürnberg
<http://www.tuv.com/safety> E-mail: markcheck@tuv.com

Fax: +49 221 806-3935

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Produkt *Product:*

Capacitor
(Multi-Layer Ceramic Capacitor)

Modell *Type:*

Bezeichnung *Designation:*

X2: LS1808Naaab302NcdM

X1: ES1808Naaab502NcdM

Y2/X1: ES2211Naaab502NcdM and ES2215Naaab502NcdM

Type nomenclature

ES 1808 N aaa b ccc N d e M, where

- "ES" is the Style, means: X1
- "1808" is the Case size.
- "N" is the Dielectric, means: C0G
- "aaa" means the Capacitance value (in pF), can be:
 - Two significant figures • Number of zeros
 - (e.g. 121 = 120 pF)
- "b" means the Capacitance tolerance, can be:
 - Cr < 10pF
 - B, means: ± 0.10 pF • C, means: ± 0.25 pF • D, means: ± 0.5 pF
 - Cr $\geq$ 10pF
 - F, means: $\pm 1\%$ • G, means: $\pm 2\%$ • J, means: $\pm 5\%$
 - K, means: $\pm 10\%$ • M, means: $\pm 20\%$
- "ccc" means the Voltage surge (in V), can be:
 - Two significant figures • Number of zeros
 - (e.g. 502 = 5000 V)
- "N" is the Termination, means: Nickel Barrier
- "d" means the Thickness, can be:
 - Blank, means: standard thickness
 - X, means special thickness:
 - X080 = 0.08" • X100 = 0.10"
 - X110 = 0.11" • X150 = 0.15"
- "e" means the Packaging, can be:
 - No suffix, means: Bulk • T, means: Tape & Reel
- "M" is the Marking code, means NY2 (X1)
(Marking code to consist of Novacap logo (N), and Y2 to define the class.)

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Produkt *Product:*

Capacitor
(Multi-Layer Ceramic Capacitor)

Modell *Type:*

Bezeichnung *Designation:*

LS 1808 N aaa b ccc N d e M, where

- "LS" is the Style, means: X2
- "1808" is the Case size.
- "N" is the Dielectric, means: C0G
- "aaa" means the Capacitance value (in pF), can be:
 - Two significant figures
 - Number of zeros
 - (e.g. 121 = 120 pF)
- "b" means the Capacitance tolerance, can be:
 - Cr < 10pF
 - B, means: ± 0.10 pF
 - C, means: ± 0.25 pF
 - D, means: ± 0.5 pF
 - Cr ≥ 10 pF
 - F, means: $\pm 1\%$
 - G, means: $\pm 2\%$
 - J, means: $\pm 5\%$
 - K, means: $\pm 10\%$
 - M, means: $\pm 20\%$
- "ccc" means the Voltage surge (in V), can be:
 - Two significant figures
 - Number of zeros
 - (e.g. 302 = 3000 V)
- "N" is the Termination, means: Nickel Barrier
- "d" means the Thickness, can be:
 - Blank, means: standard thickness
 - X, means special thickness:
 - X080 = 0.08"
 - X100 = 0.10"
 - X110 = 0.11"
 - X150 = 0.15"
- "e" means the Packaging, can be:
 - No suffix, means: Bulk
 - T, means: Tape & Reel
- "M" is the Marking code, means NLS (X2)
(Marking code to consist of Novacap logo (N), and LS to define the class.)

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Produkt *Product:*

Capacitor
(Multi-Layer Ceramic Capacitor)

Modell *Type:*

Bezeichnung *Designation:*

ES xxxx N aaa b ccc N d e M, where

- "ES" is the Style, means: Y2, X1
- "xxxx" means the Case size, can be:
 - 2211 • 2215
- "N" is the Dielectric, means: C0G
- "aaa" means the Capacitance value (in pF), can be:
 - Two significant figures • Number of zeros
(e.g. 391 = 390 pF)
- "b" means the Capacitance tolerance, can be:
 - Cr < 10pF
 - B, means: ± 0.10 pF • C, means: ± 0.25 pF • D, means: ± 0.5 pF
 - Cr $\geq$ 10pF
 - F, means: $\pm 1\%$ • G, means: $\pm 2\%$ • J, means: $\pm 5\%$
 - K, means: $\pm 10\%$ • M, means: $\pm 20\%$
- "ccc" means the Voltage surge (in V), can be:
 - Two significant figures • Number of zeros
(e.g. 502 = 5000 V)
- "N" is the Termination, means: Nickel Barrier
- "d" means the Thickness, can be:
 - Blank, means: standard thickness
 - X, means special thickness:
 - X080 = 0.08" • X100 = 0.10"
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Produkt *Product:*

 Capacitor
 (Multi-Layer Ceramic Capacitor)

Modell *Type:*
Bezeichnung *Designation:*
Detailed ratings

Type designation	Rated voltage (UR)	Type code	Class	Capacitance range
LS1808	250 V a.c.	LS	X2	4,7 pF - 1,5 nF
ES1808	250 V a.c.	ES	X1	4,7 pF - 390 pF
ES2211	250 V a.c. / 250 V a.c.	ES	Y2/X1	4,7 pF - 1 nF
ES2215	250 V a.c. / 250 V a.c.	ES	Y2/X1	820 pF - 1 nF

