



SLOVENSKI STANDARD
oSIST prEN IEC 62674-1:2024
01-september-2024

Visokofrekvenčni induktivni sestavni deli - 1. del: Fiksne dušilke za površinsko montažo za elektronsko in telekomunikacijsko opremo

High frequency inductive components - Part 1: Fixed surface mount inductors for use in electronic and telecommunication equipment

Induktive Hochfrequenzbauelemente - Teil 1: Oberflächenmontierbare Festinduktivität für den Einsatz in Elektronik und Telekommunikationsgeräten

Composants inductifs à haute fréquence - Partie 1: Bobines d'inductance fixes à montage en surface utilisées dans les matériels électroniques et les équipements de télécommunications

Ta slovenski standard je istoveten z: prEN IEC 62674-1:2024

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TITLE:

High frequency inductive components - Part 1: Fixed surface mount inductors for use in electronic and telecommunication equipment

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INTERNATIONAL ELECTROTECHNICAL COMMISSION

HIGH FREQUENCY INDUCTIVE COMPONENTS –

**Part 1: Fixed surface mount inductors for use in electronic
and telecommunication equipment**

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IEC 62674-1 has been prepared by IEC technical committee 51: Magnetic components, ferrite and magnetic powder materials. It is an international standard.

This second edition cancels and replaces the first edition published in 2012. This edition constitutes a technical revision.

This edition includes the following significant technical changes with respect to the previous edition:

- a) addition of dimensions for shape D.
- b) addition of upper temperature for operating temperature ranges.

134

135 The text of this international standard is based on the following documents:

FDIS	Report on voting
51/xxxx/FDIS	51/xxxx/RVD

136

137 Full information on the voting for the approval can be found in the report on voting indicated in
138 the above table.

139 This document was drafted in accordance with ISO/IEC Directives, Part 2, and developed in
140 accordance with ISO/IEC Directives, Part 1 and ISO/IEC Directives, IEC Supplement available
141 at www.iec.ch/members_experts/refdocs. The main document types developed by IEC are
142 described in greater detail at www.iec.ch/publications.

143 The committee has decided that the contents of this publication will remain unchanged until
144 the stability date indicated on the IEC website under webstore.iec.ch in the data related to the
145 specific publication. At this date, the publication will be

- 146 • reconfirmed,
- 147 • withdrawn,
- 148 • replaced by a revised edition, or
- 149 • amended.

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151

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HIGH FREQUENCY INDUCTIVE COMPONENTS –

Part 1: Fixed surface mount inductors for use in electronic and telecommunication equipment

158 **1 Scope**

159 This part of IEC 62674 applies to fixed surface mount inductors and fixed surface mount
160 ferrite beads.

161 The object of this standard is to define the terms necessary to describe the inductors covered
162 by this standard, provide recommendations for preferred characteristics, recommended
163 performance, test methods and general guidance.

164 **2 Normative references**

165 The following documents, in whole or in part, are normatively referenced in this document and
166 are indispensable for its application. For dated references, only the edition cited applies. For
167 undated references, the latest edition of the referenced document (including any
168 amendments) applies.

169 IEC 60068-1:2013, *Environmental testing – Part 1: General and guidance*

170 IEC 60068-2-1:2007, *Environmental testing – Part 2-1: Tests – Test A: Cold*

171 IEC 60068-2-2:2007, *Environmental testing – Part 2-2: Tests – Test B: Dry heat*

172 IEC 60068-2-14:2009, *Environmental testing – Part 2-14: Tests – Test N: Change of
173 temperature*

174 IEC 60068-2-45:2016, *Basic environmental testing procedures – Part 2-45: Tests – Test XA and
175 guidance: Immersion in cleaning solvents*

176 IEC 60068-2-58:2015, *Environmental testing – Part 2-58: Tests – Test Td: Test methods for
177 solderability, resistance to dissolution of metallization and to soldering heat of surface
178 mounting devices (SMD)*

179 IEC 60068-2-78, *Environmental testing – Part 2-78: Tests – Test Cab: Damp heat, steady
180 state*

181 IEC 61605:2016, *Fixed inductors for use in electronic and telecommunication equipment –
182 Marking codes*

183 IEC 62024-1:2017, *High frequency inductive components – Electrical characteristics and
184 measuring methods – Part 1: Nanohenry range chip inductor*

185 IEC 62024-2:2020, *High frequency inductive components – Electrical characteristics and
186 measuring methods – Part 2: Rated current of inductors for DC to DC converters*

187 IEC 62025-2:2019, *High frequency inductive components – Non-electrical characteristics and
188 measuring methods – Part 2: Test methods for non-electrical characteristics*

189 IEC 62211:2017, *Inductive components – Reliability management*

190 ISO 3:1973, *Preferred numbers – Series of preferred numbers*

191 ISO 3599, *Vernier callipers reading to 0,1 and 0,05 mm*

192 ISO 3611, *Geometrical product specifications (GPS) – Dimensional measuring equipment:*
193 *Micrometers for external measurements – Design and metrological characteristics*

194 ISO 6906, *Vernier callipers reading to 0,02 mm*

195 3 Terms and definitions

196 For the purposes of this document, the following terms and definitions apply.

197 ISO and IEC maintain terminology databases for use in standardization at the following
198 addresses:

- 199 • IEC Electropedia: available at <https://www.electropedia.org/>
- 200 • ISO Online browsing platform: available at <https://www.iso.org/obp>

201 3.1

202 **rated current**

203 maximum current which may be loaded continuously by inductors at the rated ambient
204 temperature

205 Note 1 to entry: A DC saturation limited current value or a temperature rise limited current value, whichever is
206 less, has been adopted as the rated current (see IEC 62024-2:2020, Clause 7).

207 3.2

208 **operating temperature range**

209 category temperature range

210 range of ambient temperatures for which the inductor has been designed to operate
211 continuously

212 Note 1 to entry: Unless otherwise specified in the detail specification, the operating temperature is ambient
213 temperature plus temperature rise of components.

214 4 Designation

215 It is recommended to express the designation of the fixed surface mount inductors by the
216 following 12 digits format. In the case of another format, designation shall be specified in the
217 detail specifications.

218 The designation of ferrite beads shall be specified in the detail specifications.

219 $\square\square\square$ $\square\square\square\square$ \square $\square\square\square$ \square
a) b) c) d) e)

220 a) Identification of the type of inductor

221 Fixed surface mount inductors shall be identified by the three alphabetic characters 'LCL'.

222 b) Indication of outline dimensions

223 The outline dimensions of the surface mount inductor shall be indicated by a four-digit
224 number based on two significant figures for each dimension of L and W (or H). As for the
225 dimensions of shape D, the first two digits indicate the longer side dimension L , and the
226 last two digits indicate the shorter side dimension W , as shown in Figure 1. As for the

227 dimensions of shape K, the first two digits indicate the outline dimension L , and the last
228 two digits indicate the height dimension H .

229 c) Indication of shape

230 A single alphabetic character as given in Figure 1 indicates the shape for fixed surface
231 mount inductors.

232 The shape codes are classified by the base shape of inductors.

233 D: rectangular

234 K: square

235 d) Indication of nominal inductance

236 Three alphanumeric characters specified in IEC 61605:2016, Table 3, indicate the nominal
237 inductance value (see Table 1). Except letter code of IEC61605, it shall be specified
238 between parties concerned.

239

Table 1 – Letter code for inductance value

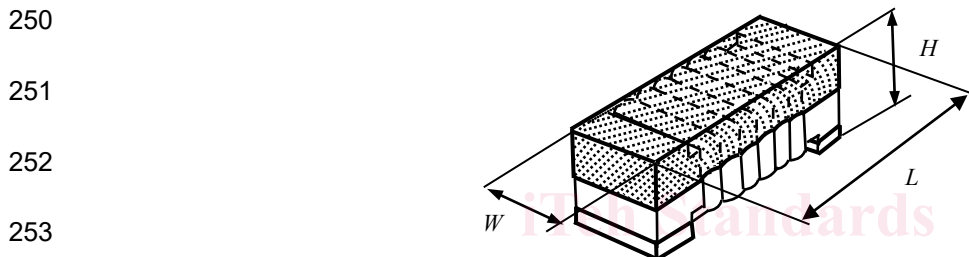
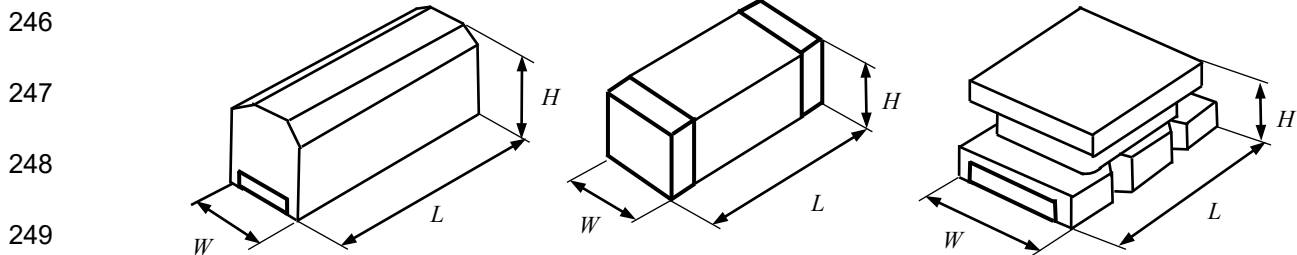
Inductance values		Digit and letter code
0,1 0,47	nH nH	N10 N47
1 4,7	nH nH	1N0 4N7
10 47	nH nH	10N 47N
0,1 0,47	μ H μ H	R10 R47
1 4,7	μ H μ H	1R0 4R7
10 47	μ H μ H	100 470
100 470	μ H μ H	101 471
1 4,7	mH mH	102 472
10 47	mH mH	103 473
100 470	mH mH	104 474
1 4,7	H H	105 475
10 47	H H	106 476

240 e) Indication of tolerance for inductance

241 Single alphabetic characters specified in Table 8 indicate the tolerance for the inductance
 242 value.

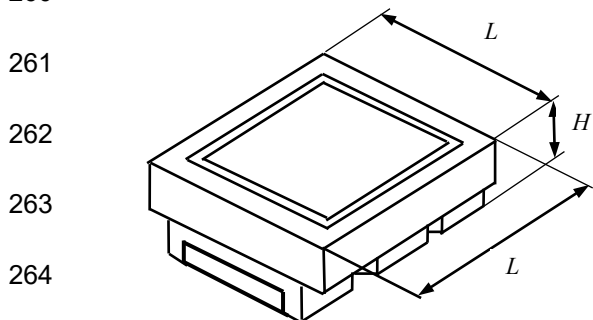
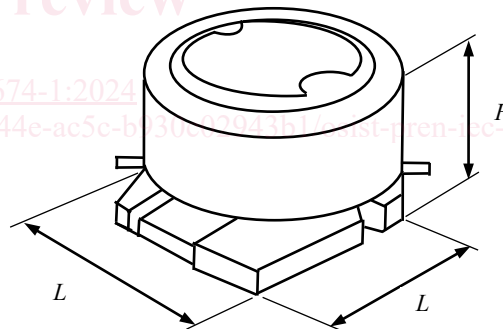
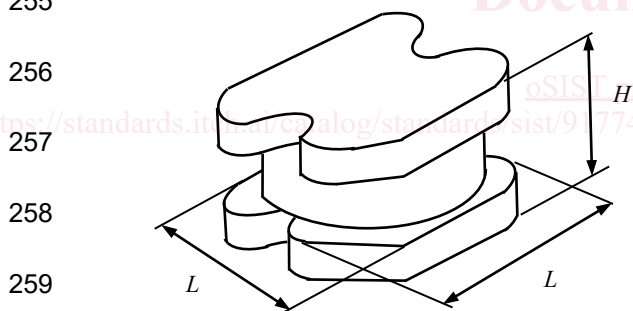
243 **5 Shape**

244 The shapes of fixed surface mount inductors and ferrite beads are classified as shown in
 245 Figure 1.



Shape D

IEC 1855/12



Shape K

IEC 1856/12

Figure 1 – Shapes of inductor and ferrite beads (examples)