INTERNATIONAL STANDARD

IEC 60191-6

1990

AMENDMENT 1
1999-12

Amendment 1

Mechanical standardization of semiconductor devices –

Part 6:
General rules for the preparation of outline drawings of surface mounted semiconductor device packages

Amendment 1

Normalisation mécanique des dispositifs à semiconducteurs –

Partie 6:
Règles générales pour la préparation des dessins d'encombrement des dispositifs à semiconducteurs à montage en surface

PRICE CODE   R

For price, see current catalogue

FOREWORD

This amendment has been prepared by subcommittee 47D: Mechanical standardization of semiconductor devices, of IEC technical committee 47: Semiconductor devices.

The text of this amendment is based on the following documents:

FDIS	Report on voting
47D/320/FDIS	47D/327/RVD

Full information on the voting for the approval of this amendment can be found in the report on voting indicated in the above table.

A bilingual version of this amendment may be issued at a later date.

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After subclause 4.4, add the following subclauses 4.5 and 4.6:

4.5   TSOP Type1

See annex A.5.

4.6   TSOP Type2

See annex A.6.

After subclause 5.1, add the following subclauses 5.2 and 5.3

5.2   TSOP Type1

See annex B.2.

5.3   TSOP Type2

See annex B.3.

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Add, after Appendix A4, the following annexes A.5 and A.6.
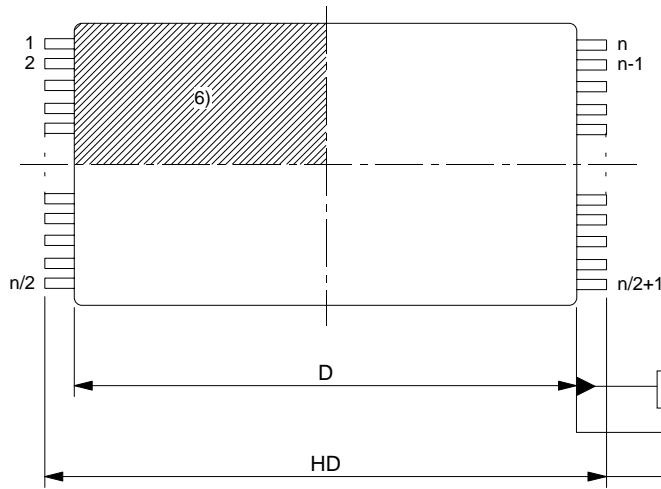
Annex A.5 – Drawing of TSOP Type1

Figure 1a
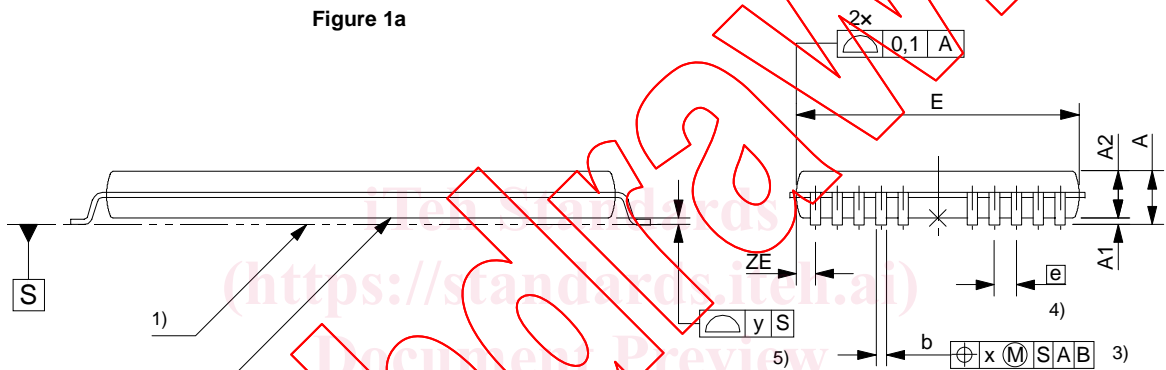
Figure 1b
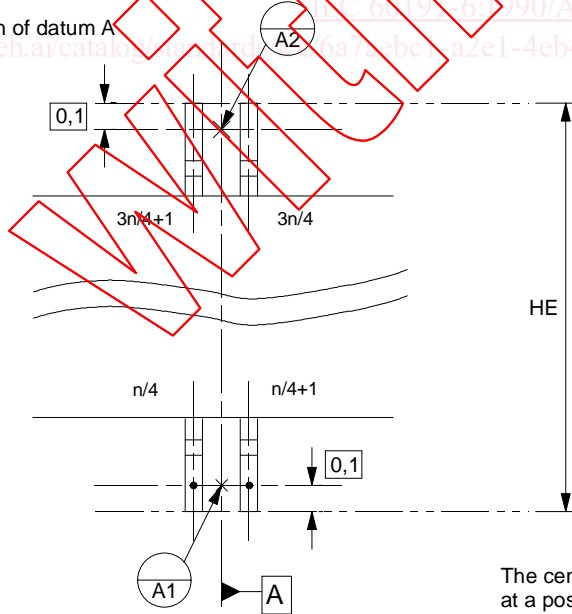
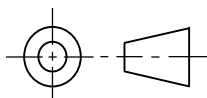Figure 1c

Definition of datum A

The center of facing side of adjacent leads at a position 0,1 mm inside top of the leads.

Figure 2

IEC   1840/99

Date: 1999

Annex A.5 – Drawing of TSOP Type1
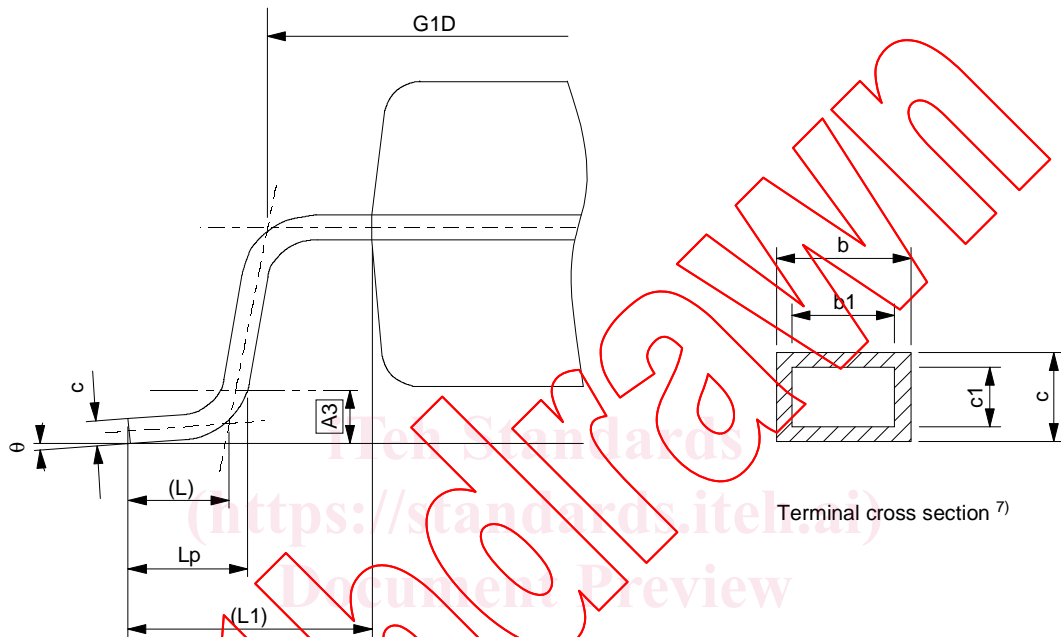
G1D

b

b1

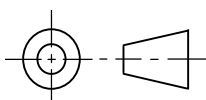c1

c

A3

c

θ

(L)

Lp

(L1)

Terminal cross section [7]

Figure 3

IEC   1841/99

NOTES

[1] Seating plane.

[2] Base plane.

[3] The maximum material conditions apply to the positional tolerance of the terminals.

[4] Specifies the true geometric position of the terminal axis.

[5] Coplanarity. Specifies the allowable vertical distance of the lowest part of each terminal from the seating plane.

[6] Index area. Shows the allowable position of the index mark, which shall be included in the shaded area entirely.

[7] The dimensions of the terminal cross section apply to the ranges of 0,1 mm and 0,25 mm from the end of a terminal.

Date: 1999

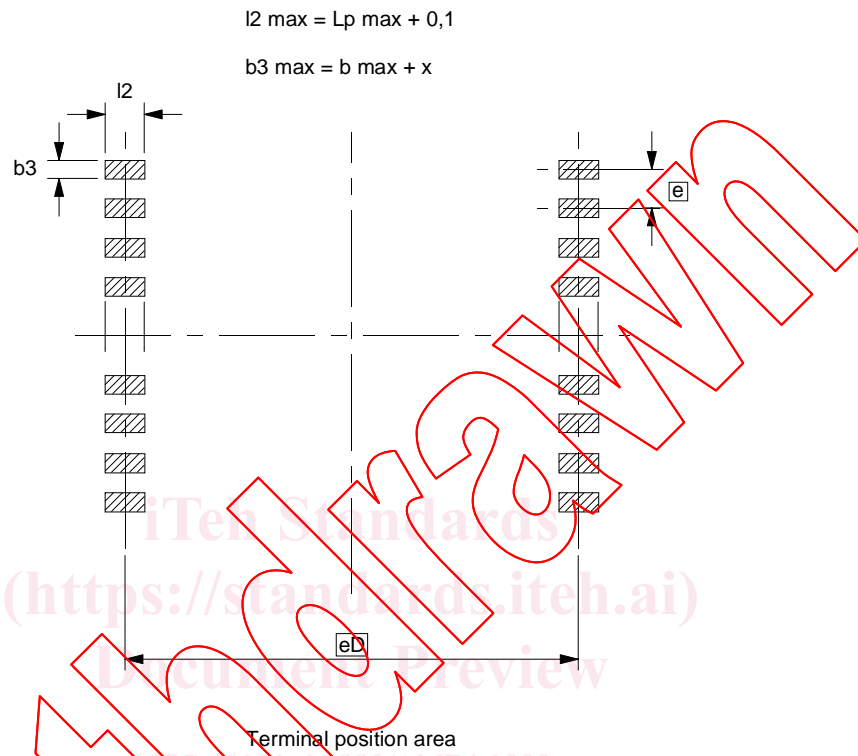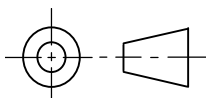**Annex A.5 – Drawing of TSOP Type1**

l2 max = Lp max + 0,1

b3 max = b max + x

Terminal position area

Figure 4

IEC   1842/99

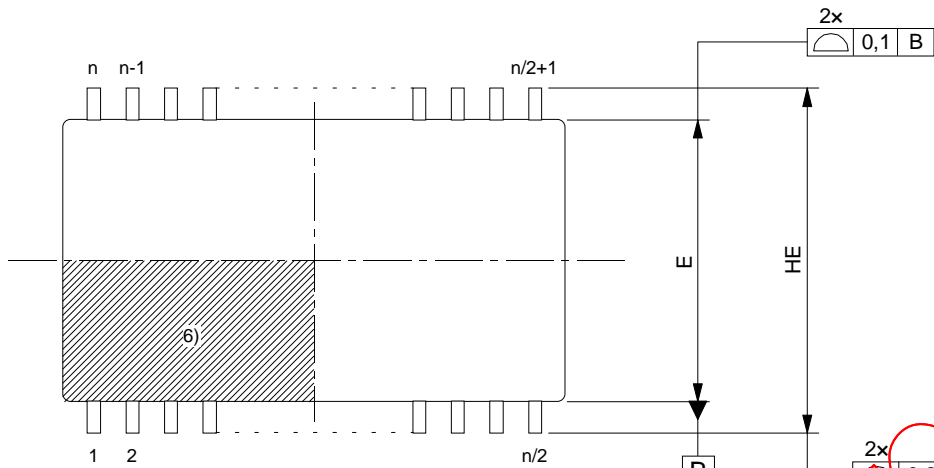## Annex A.6 – Drawing of TSOP Type2

Figure 1a

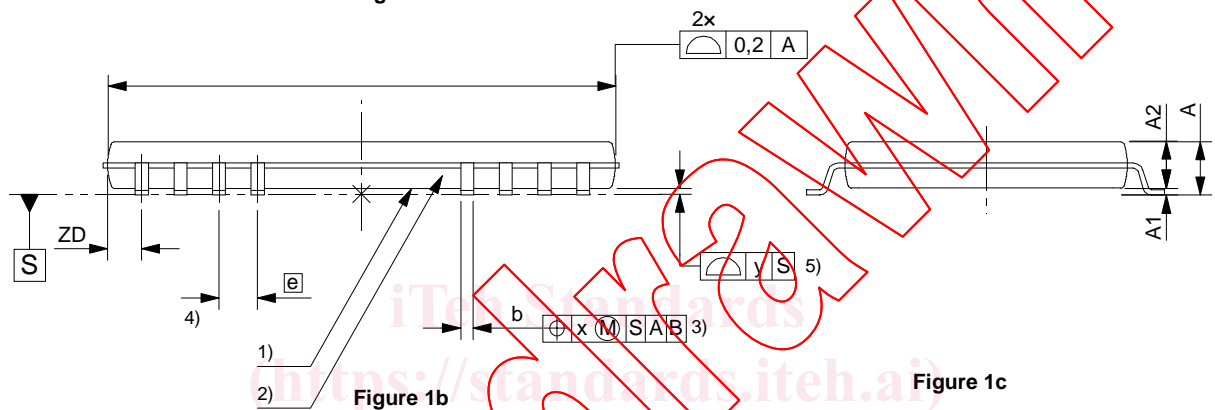**Figure 1b**

Figure 1c

Definition of datum A
1) For even number of leads on package side.
2) For odd number of leads on package side.

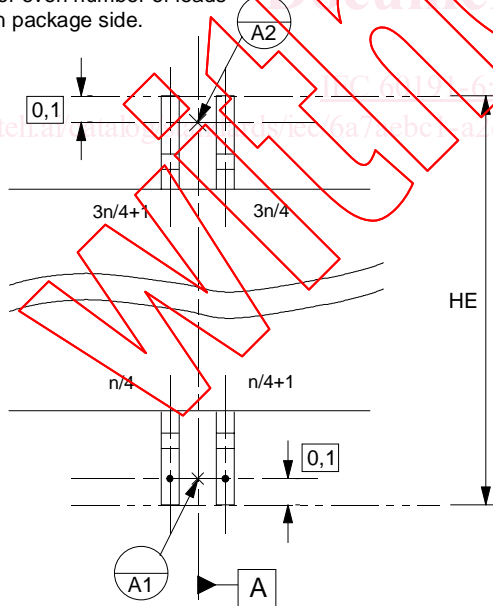3n/4+1   3n/4

n/4   n/4+1

(3n+2)/4

(n+2)/4

HE

HE

Figure 2a

The center of facing side of adjacent leads at a position 0,1 mm inside top of the leads.
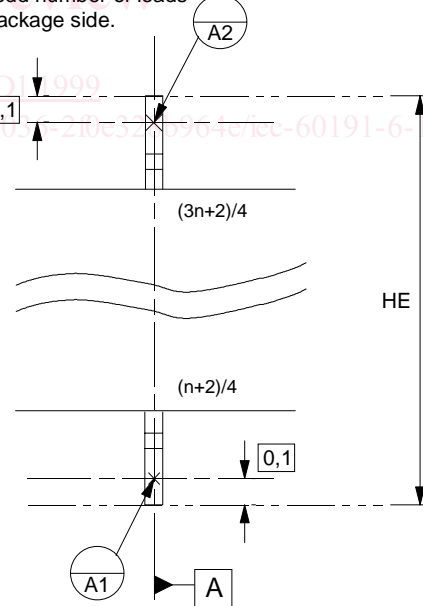
Figure 2b

The center leads at a position 0,1 mm inside top of the leads.

IEC   1843/99

Date: 1999

Annex A.6 – Drawing of TSOP Type2

G1E

b

b1

c1   c

c

A3

θ

L

Lp

L1

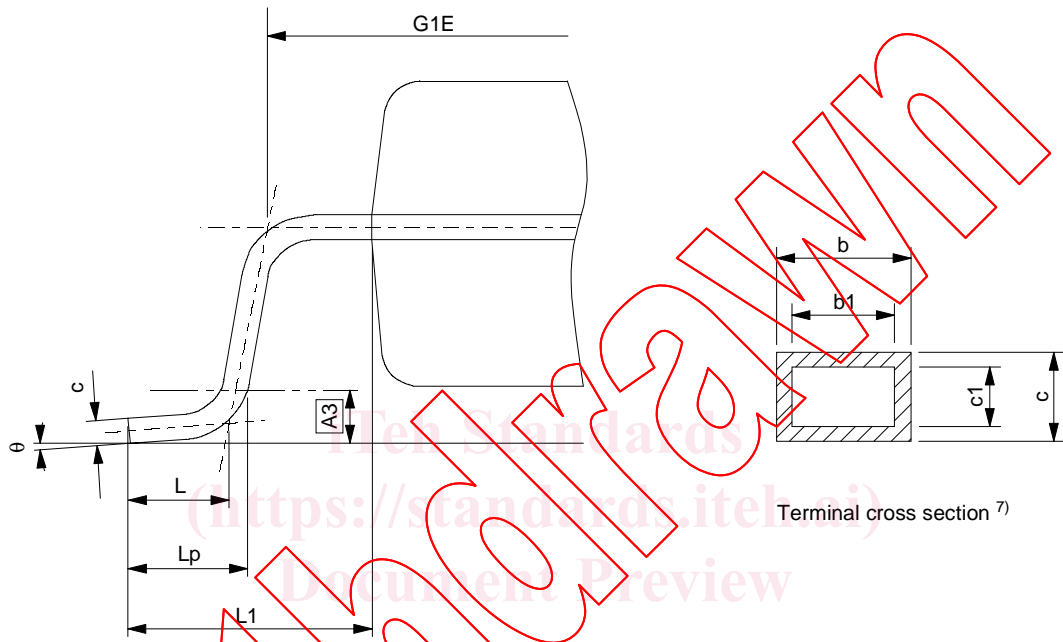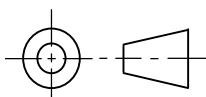Terminal cross section [7]

Figure 3a

Figure 3b

IEC   1844/99

NOTES

[1]   Seating plane.

[2]   Base plane.

[3]   The maximum material conditions apply to the positional tolerance of the terminals.

[4]   Specifies the true geometric position of the terminal axis.

[5]   Coplanarity. Specifies the allowable vertical distance of the lowest part of each terminal from the seating plane.

[6]   Index area. Shows the allowable position of the index mark, which shall be included in the shaded area entirely.

[7]   The dimensions of the terminal cross section apply to the ranges of 0,1 mm and 0,25 mm from the end of a terminal.
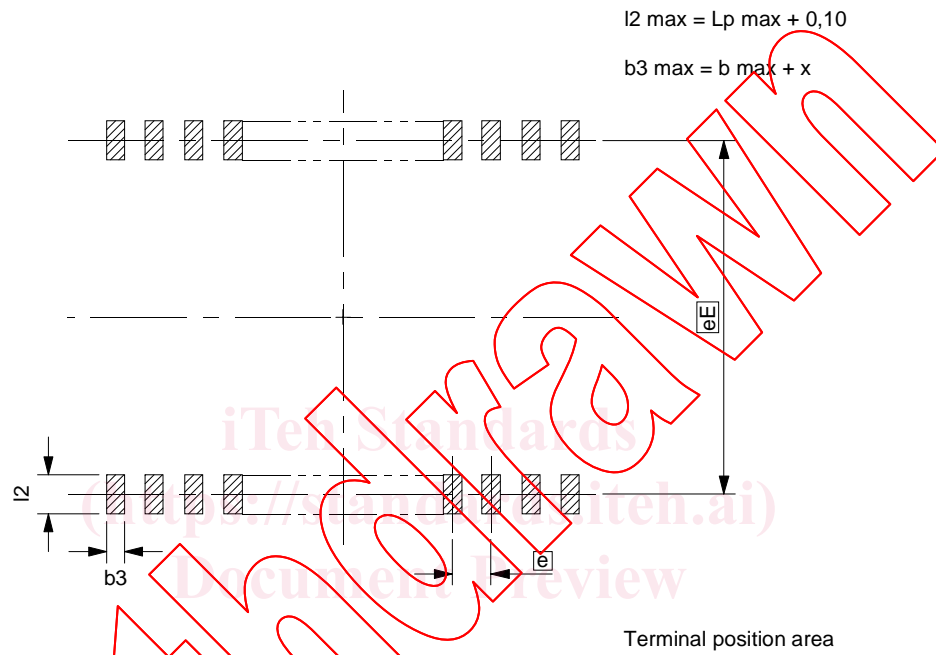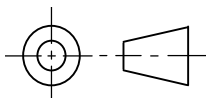
Date: 1999

Annex A.6 – Drawing of TSOP Type2

l2 max = Lp max + 0,10

b3 max = b max + x

eE

l2

b3

e

Terminal position area

Figure 4

IEC   1845/99

Date: 1999

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Add, after Appendix B1, the following annex B.2.

Annex B.2

Recommended values for TSOP Type1, original dimensions: mm.

These recommendations apply to the packages illustrated by annex A.5 and to similar packages.

Packages of this family are classified into types based on dimension E x HD.