

INTERNATIONAL STANDARD

NORME INTERNATIONALE

**Surface mounted piezoelectric devices for frequency control and selection –
Standard outlines and terminal lead connections –
Part 2: Ceramic enclosures**

**Dispositifs piézoélectriques à montage en surface pour la commande et le choix
de la fréquence – Encombrements normalisés et connexions des sorties –
Partie 2: Enveloppes en céramique**



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Withhold

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INTERNATIONAL ELECTROTECHNICAL COMMISSION

**SURFACE MOUNTED PIEZOELECTRIC DEVICES
FOR FREQUENCY CONTROL AND SELECTION –
STANDARD OUTLINES AND TERMINAL LEAD CONNECTIONS –****Part 2: Ceramic enclosures**

FOREWORD

- 1) The International Electrotechnical Commission (IEC) is a worldwide organization for standardization comprising all national electrotechnical committees (IEC National Committees). The object of IEC is to promote international co-operation on all questions concerning standardization in the electrical and electronic fields. To this end and in addition to other activities, IEC publishes International Standards, Technical Specifications, Technical Reports, Publicly Available Specifications (PAS) and Guides (hereafter referred to as "IEC Publication(s)"). Their preparation is entrusted to technical committees; any IEC National Committee interested in the subject dealt with may participate in this preparatory work. International, governmental and non-governmental organizations liaising with the IEC also participate in this preparation. IEC collaborates closely with the International Organization for Standardization (ISO) in accordance with conditions determined by agreement between the two organizations.
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International Standard IEC 61837-2 has been prepared by IEC technical committee 49: Piezoelectric, dielectric and electrostatic devices and associated materials for frequency control, selection and detection.

This second edition cancels and replaces the first edition published in 2000. It constitutes a technical revision.

In this edition, types of enclosures are renamed to express their features in their names for better understanding. The relative comparison of new types with old ones is listed in Table 1. New names of enclosures express configuration type, terminal lead numbers, sizes and arrangement of terminal pads. The details of definition are shown in Clause 3: Configuration of enclosures, and Clause 4: Designation of types.

Enclosures in this new edition are based on IEC 61240. In this standard, 27 enclosures are added to the first edition of IEC 61837-2, as follows:

QCC-12/1407A, DCC-2/1206A, QCC-10/9272A, DCC-4/9070A, DCC-2-8045B, DCC-6/7834B, DCC-6/7050A, QCC-10/7050A, DCC-4/6035C, DCC-2/6035C, QCC-8/5045A, DCC-4/5032A, DCC-4/5032C, DCC-2/4818C, DCC-2/4115C, QCC-8/3838A, DCC-6/3838A, DCC-4/3225C, DCC-2/3215C, QCC-8/3030B, DCC-6/3030A, DCC-6/2520A, DCC-4/2520C, DCC-4/2020C, DCC-4/2016C, DCC-4/1612C, DCC-2/1612C.

As a result, the new version (the second edition) contains a total of 38 enclosure types, which are listed in Table 1 – Designation of ceramic enclosures.

This standard is to be read in conjunction with IEC 61240.

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

CDV	Report on Voting
49/884/CDV	49/908/RVC

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

This publication has been drafted in accordance with the ISO/IEC Directives, Part 3.

A list of all parts of the IEC 61837 series, published under the general title: *Surface mounted piezoelectric devices for frequency control and selection – Standard outlines and terminal lead connections*, can be found on the IEC website.

The committee has decided that the contents of this publication will remain unchanged until the stability date indicated on the IEC web site under "<http://webstore.iec.ch>" in the data related to the specific publication. At this date, the publication will be

- reconfirmed,
- withdrawn,
- replaced by a revised edition, or
- amended.

SURFACE MOUNTED PIEZOELECTRIC DEVICES FOR FREQUENCY CONTROL AND SELECTION – STANDARD OUTLINES AND TERMINAL LEAD CONNECTIONS –

Part 2: Ceramic enclosures

1 Scope

This part of IEC 61837 deals with standard outlines and terminal lead connections as they apply to surface-mounted devices (SMD) for frequency control and selection in ceramic enclosures, and is based on IEC 61240.

2 Normative references

The following referenced documents are indispensable for the application of this document. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

IEC 61240, *Piezoelectric devices – Preparation of outline drawings of surface-mounted devices (SMD) for frequency control and selection – General rules*

3 Configuration of enclosures

The enclosures of the surface-mounted devices are made of ceramic materials with the terminals of deposited metal film (leadless type) based on descriptive designation system for semiconductors – devices package.

The configuration symbols are shown as follows:

- DCC (dual chip carrier);
- QCC (quad chip carrier).

4 Designation of types

The designation of types is shown on four parts as follows:



A: Configuration symbol of enclosures:

- DCC (dual chip carrier);
- QCC (quad chip carrier).

B: Structure of terminal leads: leadless type has no mark.

C: Number of terminal leads

D: Serial number of both figures

E: Arrangement of terminal land:

- A (arranges to the width direction side);
- B (arranges in the length direction side);
- C (arranges in both the width and the length direction side).

5 Ceramic enclosure dimensions

The dimensions given in this standard apply to all completed SMD-devices for frequency control and selection. Only those dimensions which meet the requirements of IEC 61240 are given.

6 Lead connections

Recommendations for the lead connections of all completed SMD-devices for frequency control and selection are given in the following individual sheets. Lead connections shall always be given in the detail specification.

7 Designation of ceramic enclosures

Table 1 is a list which includes all new enclosure types with their sheet numbers and brief descriptions. Old enclosure names are also listed as references.

Table 1 – Designation of ceramic enclosures

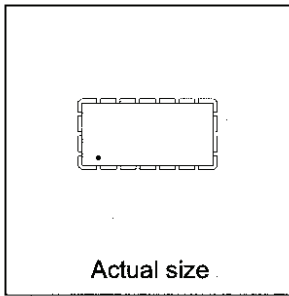
No.	Type	Old type	Sheet No.	Description
1	QCC-18/1809A	QCC-18/01	Sheet 1	Ceramic, welded, eighteen leadless SMD outline
2	QCC-12/1407A		Sheet 2	Ceramic, welded, twelve leadless SMD outline
3	DCC-4/1206A	DCC-4/01	Sheet 3	Ceramic, four leadless SMD outline
4	DCC-2/1206A		Sheet 4	Ceramic, two leadless SMD outline
5	QCC-10/9272A		Sheet 5	Ceramic, welded, ten leadless SMD outline
6	DCC-4/9070A		Sheet 6	Ceramic, welded, four leadless SMD outline
7	DCC-4/8045B	DCC-04/02, 03	Sheet 7	Ceramic, welded, four leadless SMD outline
8	DCC-2/8045B		Sheet 8	Ceramic, welded, two leadless SMD outline
9	DCC-6/7834B		Sheet 9	Ceramic, welded, six leadless SMD outline
10	DCC-6/7050A		Sheet 10	Ceramic, welded, six leadless SMD outline
11	DCC-4/7050A	DCC-4/08	Sheet 11	Ceramic, welded, four leadless SMD outline
12	DCC-4/7050B	DCC-4/04, 05	Sheet 12	Ceramic, welded, four leadless SMD outline
13	QCC-10/7050A		Sheet 13	Ceramic, welded, ten leadless SMD outline
14	QCC-6/7050A	QCC-6/01, 02	Sheet 14	Ceramic, welded, six leadless SMD outline
15	DCC-6/6035A	DCC-4/06, 07	Sheet 15	Ceramic, welded, six leadless SMD outline
16	DCC-4/6035C		Sheet 16	Ceramic, welded, four leadless SMD outline
17	DCC-2/6035C		Sheet 17	Ceramic, welded, two leadless SMD outline
18	QCC-8/5050A	QCC-8/02	Sheet 18	Ceramic, welded, eight leadless SMD outline
19	QCC-12/5045A	QCC-12/02	Sheet 19	Ceramic, welded, twelve leadless SMD outline
20	QCC-8/5045A		Sheet 20	Ceramic, welded, eight leadless SMD outline

No.	Type	Old type	Sheet No.	Description
21	DCC-4/5032A		Sheet 21	Ceramic, welded, four leadless SMD outline
22	DCC-4/5032C		Sheet 22	Ceramic, welded, four leadless SMD outline
23	DCC-2/5032B	DCC-2/01	Sheet 23	Ceramic, welded, two leadless SMD outline
24	DCC-2/4818C		Sheet 24	Ceramic, welded, two leadless SMD outline
25	DCC-2/4115C		Sheet 25	Ceramic, welded, two leadless SMD outline
26	DCC-4/4025C	DCC-6/01	Sheet 26	Ceramic, welded, four leadless SMD outline
27	QCC-8/3838A		Sheet 27	Ceramic, welded, eight leadless SMD outline
28	DCC-6/3838A		Sheet 28	Ceramic, welded, six leadless SMD outline
29	DCC-2/3215C		Sheet 29	Ceramic, welded, two leadless SMD outline
30	DCC-4/3225C		Sheet 30	Ceramic, welded, four leadless SMD outline
31	QCC-8/3030B		Sheet 31	Ceramic, welded, eight leadless SMD outline
32	DCC-6/3030A		Sheet 32	Ceramic, welded, six leadless SMD outline
33	DCC-6/2520A		Sheet 33	Ceramic, welded, six leadless SMD outline
34	DCC-4/2520C		Sheet 34	Ceramic, welded, four leadless SMD outline
35	DCC-4/2020C		Sheet 35	Ceramic, welded, four leadless SMD outline
36	DCC-4/2016C		Sheet 36	Ceramic, welded, four leadless SMD outline
37	DCC-4/1612C		Sheet 37	Ceramic, welded, four leadless SMD outline
38	DCC-2/1612C		Sheet 38	Ceramic, welded, two leadless SMD outline

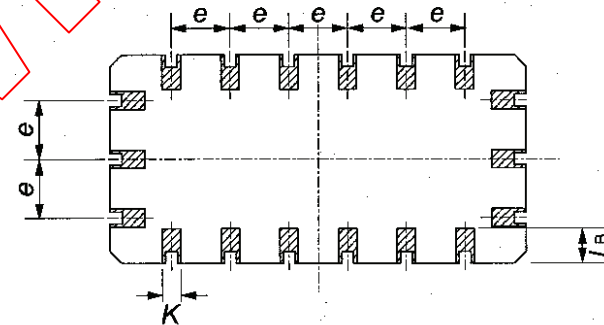
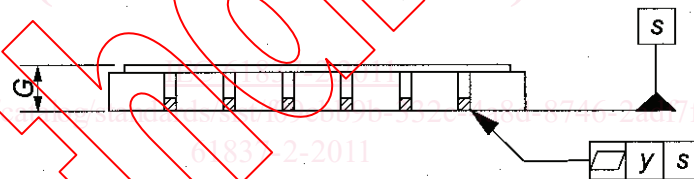
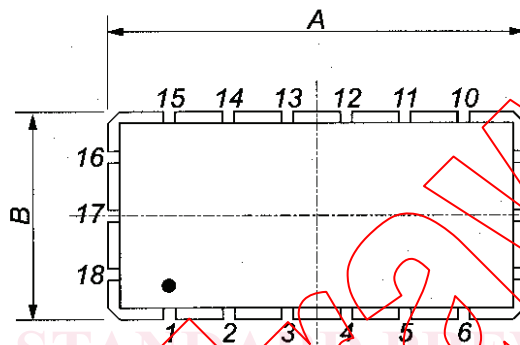
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Ref.	Dimensions (mm)			Notes
	Min.	Nom.	Max.	
A	—	(18,0)	18,30	
B	—	(9,0)	9,30	
G	—	—	2,00	
K	0,50	—	1,10	
L _B	1,20	—	1,80	Note 1
e	—	2,54	—	
y	—	—	0,10	



IEC 853/11

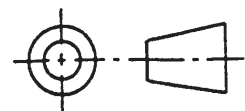
NOTE 1 Dimension L_B max. can be increased to 2,10mm for lead 1 to identify the orientation.

Ceramic, welded, eighteen leadless SMD outline –

Type QCC-18/1809A

Scale

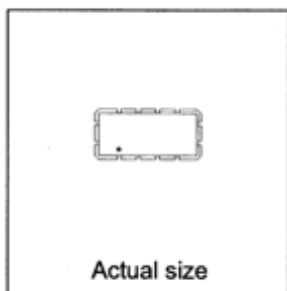
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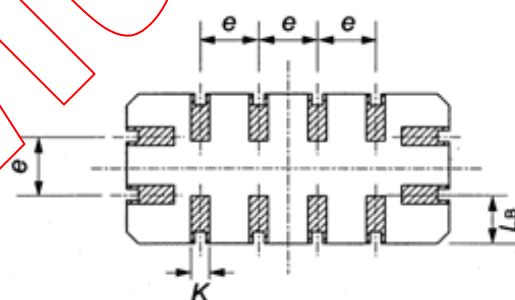
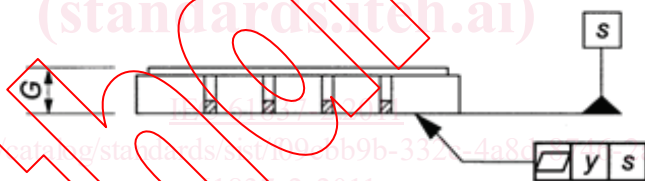
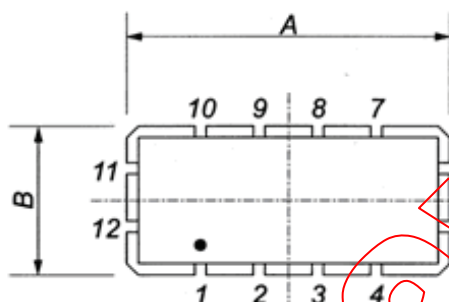
Sheet 1

Terminal land connections of Type QCC-18/1809A

No.	Crystal unit	Crystal oscillator	Crystal filter	SAW devices
1				Ground
2				Option
3				Option
4				Option
5				Option
6				Ground
7				Input/Output
8				Ground
9				Input/Output /Ground
10				Ground
11				Option
12				Option
13				Option
14				Option
15				Ground
16				Output/Input
17				Ground
18				Output/Input /Ground



Ref.	Dimensions (mm)			Notes
	Min.	Nom.	Max.	
A	—	(14,0)	14,30	
B	—	(6,5)	6,80	
G	—	—	2,00	
K	0,50	—	1,10	
L_B	1,80	—	2,30	Note 1
e	—	2,54	—	
y	—	—	0,10	



IEC 854/11

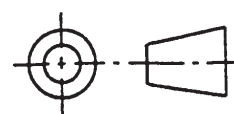
NOTE 1 Dimension L_B max. can be increased to 2,10 mm for lead 1 to identify the orientation.

Ceramic, welded, twelve leadless SMD outline –

Type QCC-12/1407A

Scale

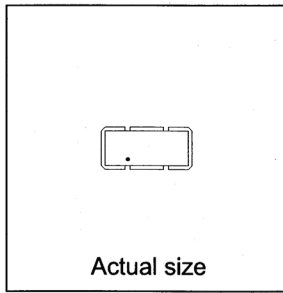
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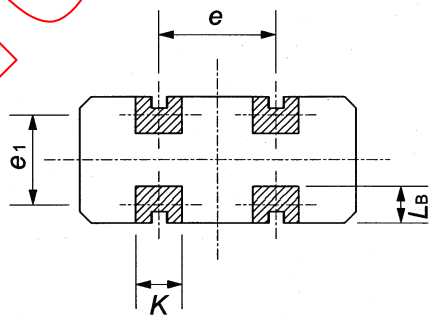
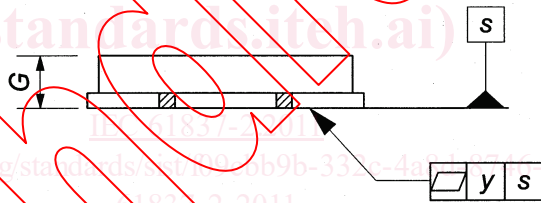
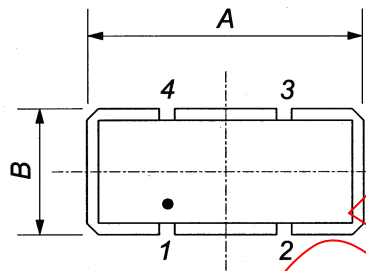
Sheet 2

Terminal land connections of Type QCC-12/1407A

No.	Crystal unit	Crystal oscillator	Crystal filter	SAW devices
1				Option
2				Option
3				Ground
4				Option
5				Output/Input
6				Output/Input /Ground
7				Option
8				Ground
9				Option
10				Option
11				Input/Output
12				Input/Output /Ground



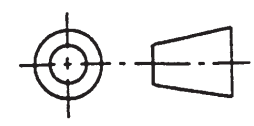
Ref.	Dimensions (mm)			Notes
	Min.	Nom.	Max.	
□	—	(12,0)	12,30	
B	—	(5,5)	5,80	
G	—	—	2,30	
K	1,80	—	2,20	
L _B	1,30	—	1,90	
e	—	5,08	—	
e ₁	—	3,90	—	
y	—	—	0,10	



IEC 855/11

Ceramic, welded, four leadless SMD outline –
Type DCC-4/1206A

Scale
3: 1



Sheet 3

Terminal land connections of Type DCC-4/1206A

No.	Crystal unit	Crystal oscillator	Crystal filter	SAW devices
1	Terminal 1	Control voltage		
2	NC	Ground		
3	Terminal 2	Output		
4	NC	DC supply		

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