



**LIGHTWEIGHT ACCESSORIES FOR  
RECTANGULAR, MICROMINIATURE  
CONNECTORS, 3401/029 AND 3401/077**

**ESCC Detail Specification No. 3401/087**

Issue 1	September 2015
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Document Custodian: European Space Agency – see <https://escies.org>

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## 1 GENERAL

### 1.1 SCOPE

This specification details the ratings, physical and electrical characteristics, test and inspection data for Lightweight Accessories for Rectangular, Microminiature Connectors (MDM and MDMA).

It shall be read in conjunction with ESCC Generic Specification No. 3401, the requirements of which are supplemented herein, and ESCC Detail Specifications Nos. 3401/029, 3401/032 and 3401/077.

### 1.2 COMPONENT TYPE VARIANTS

The type variants of accessories covered by this specification are given in Table 1(a).

### 1.3 MAXIMUM RATINGS

The maximum ratings, which shall not be exceeded at any time during use or storage, applicable to the accessories specified herein, are given in Table 1(b).

### 1.4 PARAMETER DERATING INFORMATION (FIGURE 1)

Not applicable.

### 1.5 PHYSICAL DIMENSIONS

The physical characteristics of the accessories specified herein are shown in Figure 2.

## 2 APPLICABLE DOCUMENTS

The following documents form part of this specification and shall be read in conjunction with it:

- (a) ESCC Generic Specification No. 3401, Connectors, Electrical, Rectangular and Circular.
- (b) ESCC Detail Specification No. 3401/029, Connectors, Electrical, Rectangular, Microminiature, based On Type MDM.
- (c) ESCC Detail Specification No. 3401/032, Accessories for Connectors, Microminiature 3401/029, 3401/077 and Connector Savers 3401/041.
- (d) ESCC Detail Specification No. 3401/077, Connectors, Electrical, Rectangular, Microminiature, Removable Crimp Contacts, based On Type MDMA.

## 3 TERMS, DEFINITIONS, ABBREVIATIONS, SYMBOLS AND UNITS

For the purpose of this specification, the terms, definitions, abbreviations, symbols and units specified in ESCC Basic Specification No. 21300 shall apply.

**TABLE 1(a) – TYPE VARIANTS**

Variant	Description			Weight Max. (g)
	Type	Shell Size	Finish (1)	
01	Backshell: Lightweight Top Circular Entry	9	Nickel	3
02	Backshell: Lightweight Top Circular Entry	15	Nickel	3
03	Backshell: Lightweight Top Circular Entry	21	Nickel	4
04	Backshell: Lightweight Top Circular Entry	25	Nickel	4
05	Backshell: Lightweight Top Circular Entry	31	Nickel	5
06	Backshell: Lightweight Top Circular Entry	37	Nickel	5
07	Backshell: Lightweight Top Circular Entry	51	Nickel	6
08	Backshell: Lightweight Top Circular Entry	9	Gold	3
09	Backshell: Lightweight Top Circular Entry	15	Gold	3
10	Backshell: Lightweight Top Circular Entry	21	Gold	4
11	Backshell: Lightweight Top Circular Entry	25	Gold	4
12	Backshell: Lightweight Top Circular Entry	31	Gold	5
13	Backshell: Lightweight Top Circular Entry	37	Gold	5
14	Backshell: Lightweight Top Circular Entry	51	Gold	6
15	Backshell: Lightweight Top Elliptical Entry	9	Nickel	3
16	Backshell: Lightweight Top Elliptical Entry	15	Nickel	4
17	Backshell: Lightweight Top Elliptical Entry	21	Nickel	4
18	Backshell: Lightweight Top Elliptical Entry	25	Nickel	4
19	Backshell: Lightweight Top Elliptical Entry	31	Nickel	5
20	Backshell: Lightweight Top Elliptical Entry	37	Nickel	6
21	Backshell: Lightweight Top Elliptical Entry	51	Nickel	6
22	Backshell: Lightweight Top Elliptical Entry	9	Gold	3
23	Backshell: Lightweight Top Elliptical Entry	15	Gold	4
24	Backshell: Lightweight Top Elliptical Entry	21	Gold	4
25	Backshell: Lightweight Top Elliptical Entry	25	Gold	4
26	Backshell: Lightweight Top Elliptical Entry	31	Gold	5
27	Backshell: Lightweight Top Elliptical Entry	37	Gold	6
28	Backshell: Lightweight Top Elliptical Entry	51	Gold	6
29	Backshell: Lightweight 45° Circular Entry	9	Nickel	3
30	Backshell: Lightweight 45° Circular Entry	15	Nickel	4
31	Backshell: Lightweight 45° Circular Entry	21	Nickel	4
32	Backshell: Lightweight 45° Circular Entry	25	Nickel	5
33	Backshell: Lightweight 45° Circular Entry	31	Nickel	5
34	Backshell: Lightweight 45° Circular Entry	37	Nickel	6
35	Backshell: Lightweight 45° Circular Entry	51	Nickel	6
36	Backshell: Lightweight 45° Circular Entry	9	Gold	3
37	Backshell: Lightweight 45° Circular Entry	15	Gold	4
38	Backshell: Lightweight 45° Circular Entry	21	Gold	4
39	Backshell: Lightweight 45° Circular Entry	25	Gold	5
40	Backshell: Lightweight 45° Circular Entry	31	Gold	5
41	Backshell: Lightweight 45° Circular Entry	37	Gold	6

Variant	Description			Weight Max. (g)
	Type	Shell Size	Finish (1)	
42	Backshell: Lightweight 45° Circular Entry	51	Gold	6
43	Backshell: Lightweight 45° Elliptical Entry	9	Nickel	3
44	Backshell: Lightweight 45° Elliptical Entry	15	Nickel	4
45	Backshell: Lightweight 45° Elliptical Entry	21	Nickel	5
46	Backshell: Lightweight 45° Elliptical Entry	25	Nickel	5
47	Backshell: Lightweight 45° Elliptical Entry	31	Nickel	6
48	Backshell: Lightweight 45° Elliptical Entry	37	Nickel	6
49	Backshell: Lightweight 45° Elliptical Entry	51	Nickel	7
50	Backshell: Lightweight 45° Elliptical Entry	9	Gold	3
51	Backshell: Lightweight 45° Elliptical Entry	15	Gold	4
52	Backshell: Lightweight 45° Elliptical Entry	21	Gold	5
53	Backshell: Lightweight 45° Elliptical Entry	25	Gold	5
54	Backshell: Lightweight 45° Elliptical Entry	31	Gold	6
55	Backshell: Lightweight 45° Elliptical Entry	37	Gold	6
56	Backshell: Lightweight 45° Elliptical Entry	51	Gold	7

**NOTES:**

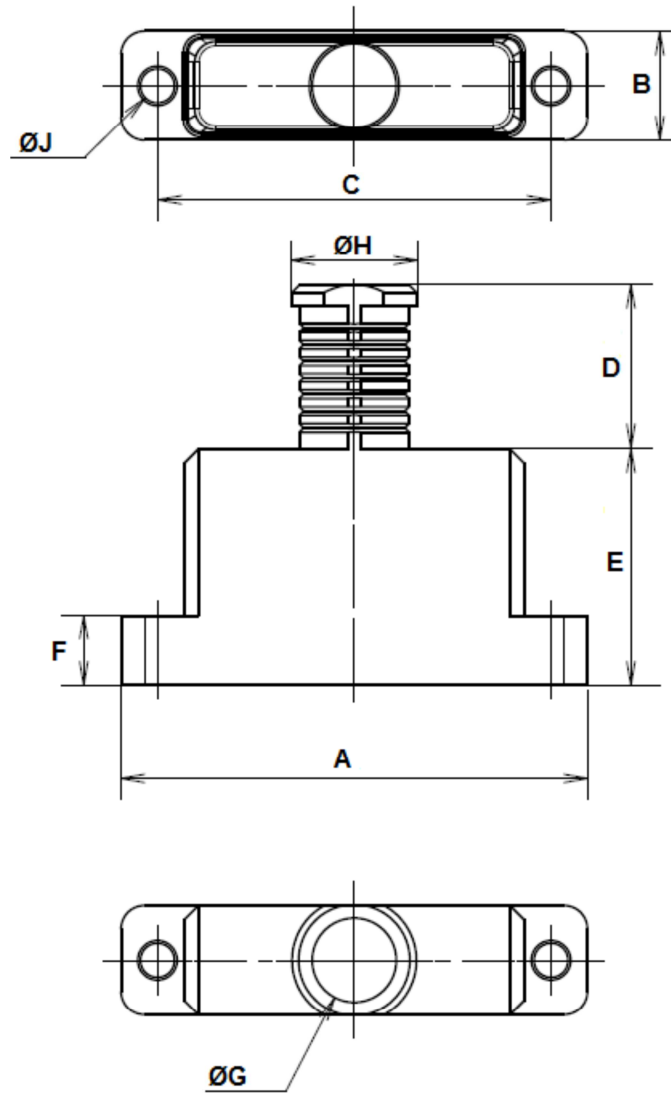
1. See Para. 4.4.1.

**TABLE 1(b) - MAXIMUM RATINGS**

No.	Characteristic	Symbol	Maximum Rating	Unit
1	Operating Temperature Range	T <sub>op</sub>	-55 to +125	°C
2	Storage Temperature Range	T <sub>stg</sub>	-55 to +125	°C

**FIGURE 2 - PHYSICAL DIMENSIONS**

**FIGURE 2(a) – BACKSHELL - LIGHTWEIGHT TOP CIRCULAR ENTRY**



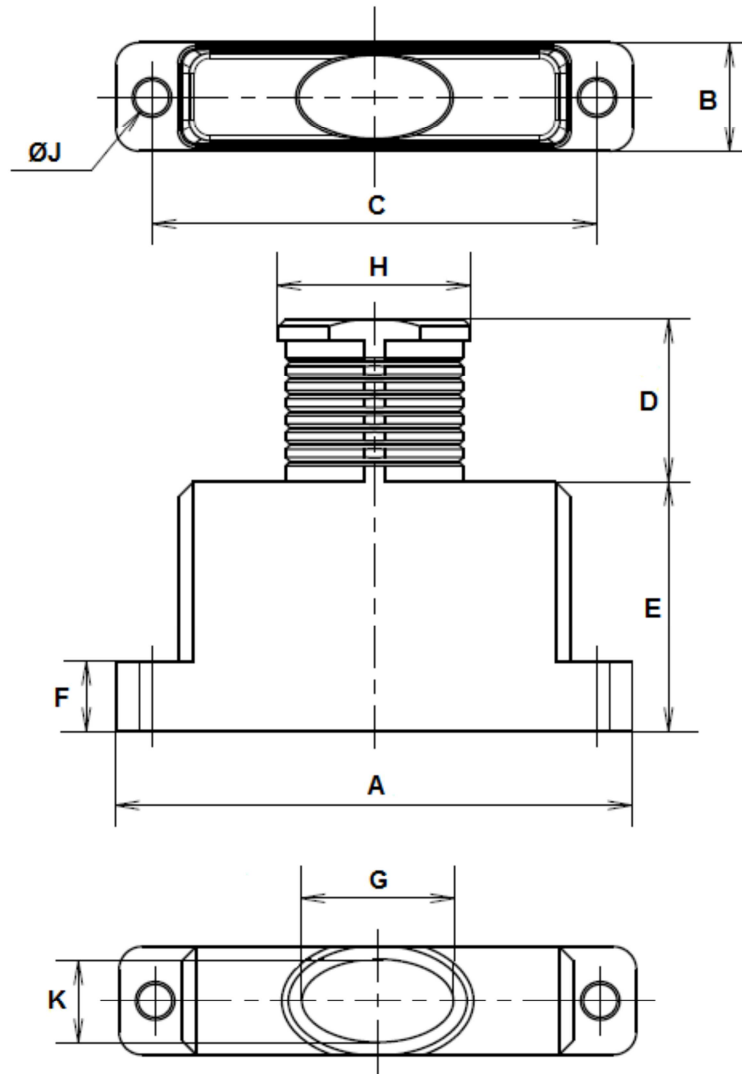
Shell Size	A	B	C	D	E	F	ØG		ØH Max	ØJ	
							Min	Max		Min	Max
9	19.65	7.9	14.35	11.7	10	5	5.8	6.2	9.2	2.35	2.45
15	23.45	7.9	18.16	11.7	12	5	5.8	6.2	9.2	2.35	2.45
21	27.25	7.9	21.97	11.7	14	5	5.8	6.2	9.2	2.35	2.45
25	29.8	7.9	24.51	11.7	16	5	5.8	6.2	9.2	2.35	2.45
31	33.6	7.9	28.32	11.7	17	5	5.8	6.2	9.2	2.35	2.45
37	37.4	7.9	32.13	11.7	18	5	5.8	6.2	9.2	2.35	2.45
51	36.15	8.9	30.86	11.7	19	5	6.8	7.2	10.2	2.35	2.45

**NOTES:**

2. All dimensions are in millimetres.



**FIGURE 2(b) – BACKSHELL - LIGHTWEIGHT TOP ELLIPTICAL ENTRY**

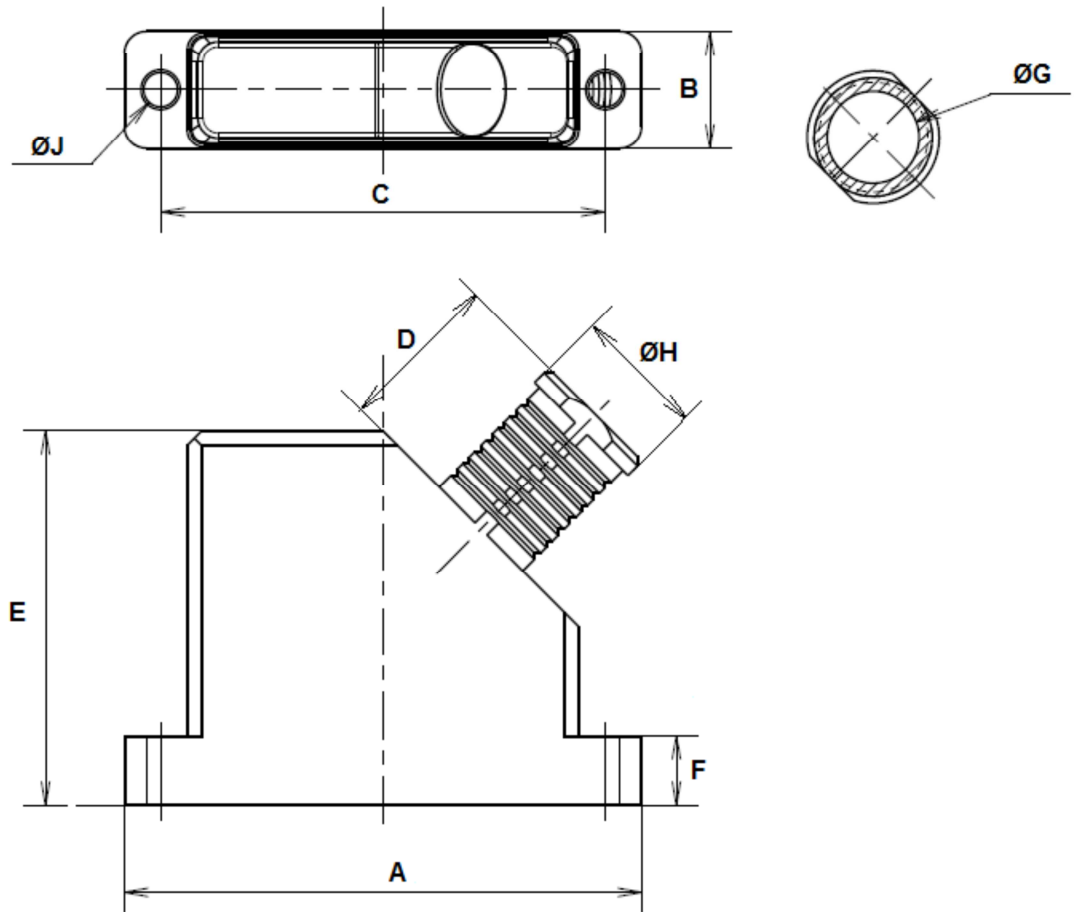


Shell Size	A	B	C	D	E	F	G		H	ØJ		K	
							Min	Max		Min	Max	Min	Max
9	19.65	7.9	14.35	11.7	10	5	7.7	8.1	11.1	2.35	2.45	5.8	6.2
15	23.45	7.9	18.16	11.7	12	5	10.5	10.9	13.9	2.35	2.45	5.8	6.2
21	27.25	7.9	21.97	11.7	14	5	14.8	15.2	18.2	2.35	2.45	5.8	6.2
25	29.8	7.9	24.51	11.7	16	5	17.3	17.7	20.7	2.35	2.45	5.8	6.2
31	33.6	7.9	28.32	11.7	17	5	20.6	21	24	2.35	2.45	5.8	6.2
37	37.4	7.9	32.13	11.7	18	5	24.4	24.8	27.8	2.35	2.45	5.8	6.2
51	36.15	8.9	30.86	11.7	19	5	23.2	23.6	26.6	2.35	2.45	6.8	7.2

**NOTES:**

1. All dimensions are in millimetres.

**FIGURE 2(c) – BACKSHELL - LIGHTWEIGHT 45° CIRCULAR ENTRY**

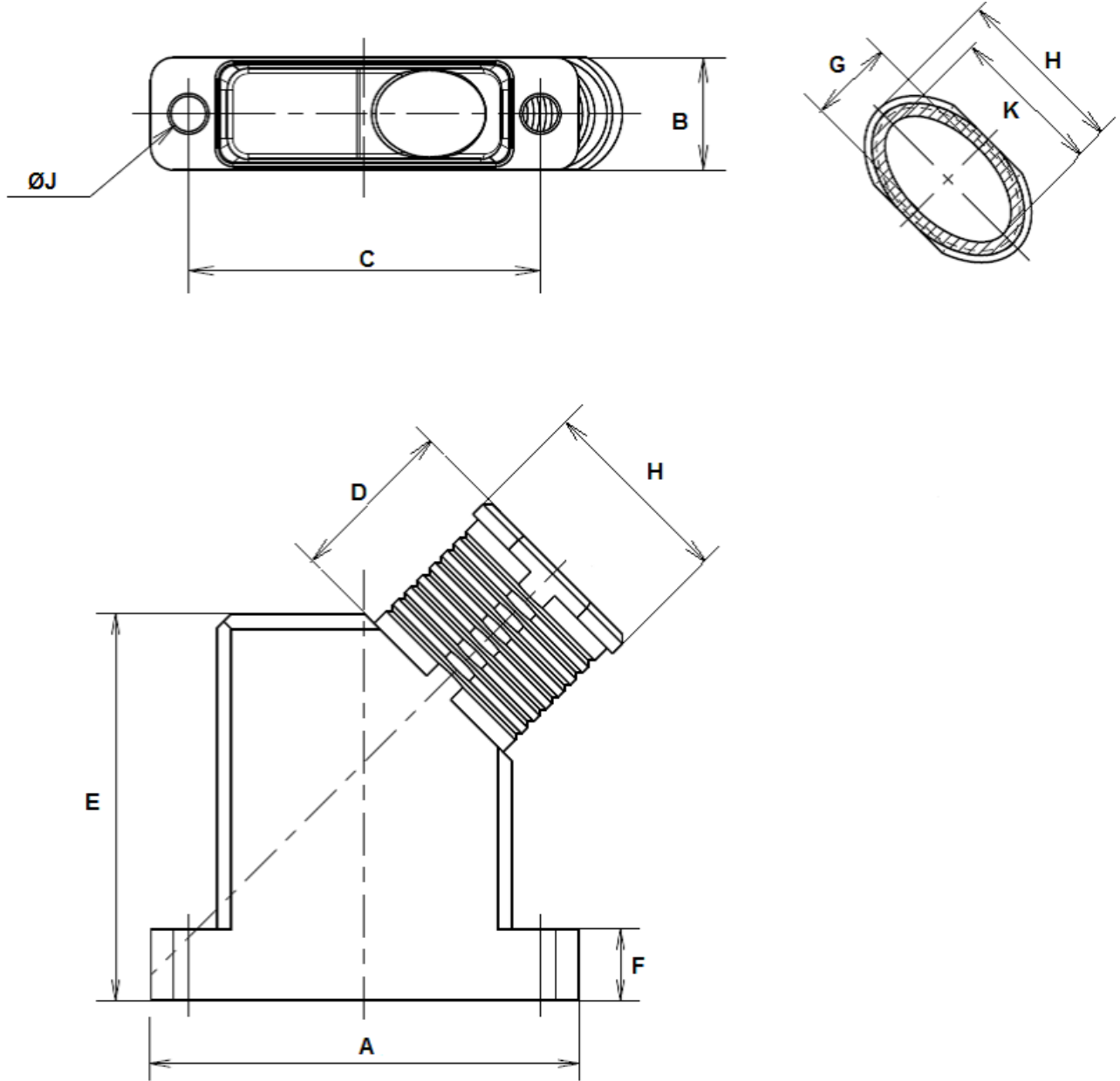


Shell Size	A	B	C	D	E	F	ØG		ØH Max	ØJ	
							Min	Max		Min	Max
9	19.65	7.9	14.35	11.7	21	5	5.1	5.5	8.5	2.35	2.45
15	23.45	7.9	18.16	11.7	23	5	5.8	6.2	9.2	2.35	2.45
21	27.25	7.9	21.97	11.7	24	5	5.8	6.2	9.2	2.35	2.45
25	29.8	7.9	24.51	11.7	27	5	5.8	6.2	9.2	2.35	2.45
31	33.6	7.9	28.32	11.7	28	5	5.8	6.2	9.2	2.35	2.45
37	37.4	7.9	32.13	11.7	29	5	5.8	6.2	9.2	2.35	2.45
51	36.15	8.9	30.86	11.7	30	5	6.8	7.2	10.2	2.35	2.45

**NOTES:**

1. All dimensions are in millimetres.

**FIGURE 2(d) – BACKSHELL - LIGHTWEIGHT 45° ELLIPTICAL ENTRY**



Shell Size	A	B	C	D	E	F	G		H	ØJ		K	
							Min	Max		Min	Max	Min	Max
9	19.65	7.9	14.35	11.7	21	5	4.8	5.2	8.2	2.35	2.45	5.8	6.2
15	23.45	7.9	18.16	11.7	23	5	7.3	7.7	10.7	2.35	2.45	5.8	6.2
21	27.25	7.9	21.97	11.7	24	5	9.3	9.7	12.7	2.35	2.45	5.8	6.2
25	29.8	7.9	24.51	11.7	27	5	10.6	11	14	2.35	2.45	5.8	6.2
31	33.6	7.9	28.32	11.7	28	5	12.3	12.7	15.7	2.35	2.45	5.8	6.2
37	37.4	7.9	32.13	11.7	29	5	14.8	15.2	18.2	2.35	2.45	5.8	6.2
51	36.15	8.9	30.86	11.7	30	5	16.8	17.2	20.2	2.35	2.45	6.8	7.2

**NOTES:**

1. All dimensions are in millimetres.

## 4 REQUIREMENTS

### 4.1 GENERAL

The complete requirements for procurement of the accessories specified herein are stated in this specification and ESCC Generic Specification No. 3401. Deviations from the Generic Specification, applicable to this specification only, are listed in Para. 4.2.

Deviations from the applicable Generic Specification and this Detail Specification, formally agreed with specific Manufacturers on the basis that the alternative requirements are equivalent to the ESCC requirements and do not affect the components' reliability, are listed in the appendices attached to this specification.

### 4.2 DEVIATIONS FROM GENERIC SPECIFICATION

#### 4.2.1 Deviations from Special In-Process Controls

- (a) Para. 5.2.2, Gold Plating Porosity: Not applicable.
- (b) Para. 5.2.3, Plating Thickness: Not applicable.

#### 4.2.2 Deviations from Final Production Tests (Chart II)

Only the following tests shall be performed:

- (a) Para. 4.4, Marking.
- (b) Para. 9.6, Dimension Check.
- (c) Para. 9.7, External Visual Inspection. The magnification shall be x3.

#### 4.2.3 Deviations from Burn-in and Electrical Measurements (Chart III)

Chart III is not applicable.

#### 4.2.4 Deviations from Qualification Tests (Chart IV)

Chart IV is not applicable.

#### 4.2.5 Deviations from Lot Acceptance Tests (Chart V)

Chart V is not applicable.

### 4.3 MECHANICAL REQUIREMENTS

#### 4.3.1 Dimension Check

The dimensions of the accessories specified herein shall be verified in accordance with the requirements set out in Para. 9.6 of ESCC Generic Specification No. 3401 and shall conform to those shown in Figure 2 of this specification.

#### 4.3.2 Weight

The maximum weight of the accessories specified herein shall be as specified in Table 1(a).

### 4.4 MATERIALS AND FINISHES

The materials and finishes shall be as specified herein. Where a definite material is not specified, a material which will enable the components specified herein to meet the performance requirements of this specification shall be used. Acceptance or approval of any constituent material does not guarantee acceptance of the finished product.

#### 4.4.1 Backshells

Backshells shall be made of aluminium alloy.

Variants 01 to 07, 15 to 21, 29 to 35, 43 to 49 shall have a minimum plating thickness of 25.4µm of electroless nickel.

The plating for Variants 08 to 14, 22 to 28, 36 to 42, 50 to 56 shall be 0.7µm minimum of gold with 2.54µm minimum of electroless nickel underplating.

#### 4.5 MARKING

##### 4.5.1 General

The marking of all components delivered to this specification shall be in accordance with the requirements of ESCC Basic Specification No. 21700 and the following paragraphs. When the component is too small to accommodate all of the marking specified, as much as space permits shall be marked and the marking information, in full, shall accompany each component in its primary package.

The information to be marked and the order of precedence, shall be as follows:

- (a) The ESCC qualified components symbol (for ESCC qualified components only).
- (b) The ESCC Component Number.
- (c) Traceability Information.

##### 4.5.2 The ESCC Component Number

The ESCC Component Number shall be constituted as follows:

Example: 340108701B

- Detail Specification Reference: 3401087
- Component Type Variant Number: 01 (as required)
- Testing Level: B

##### 4.5.3 Traceability Information

Traceability information shall be marked in accordance with the requirements of ESCC Basic Specification No. 21700.

#### 4.6 ELECTRICAL MEASUREMENTS (TABLES 2 AND 3)

Not applicable.

#### 4.7 BURN-IN AND ELECTRICAL MEASUREMENTS (TABLES 4 AND 5)

Not applicable.

#### 4.8 ENVIRONMENTAL AND ENDURANCE TESTS (TABLE 6)

Not applicable.