



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

ESCC Detail Specification No. 3401/087

Issue 2	December 2019
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DCR No.	CHANGE DESCRIPTION
1286	Specification upissued to incorporate changes per DCR.

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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 (1)	Finish (2)	
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

Variant	Description			Weight Max. (g)
	Type	Shell Size (1)	Finish (2)	
41	Backshell: Lightweight 45° Circular Entry	37	Gold	6
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
57	Backshell: Lightweight Top Circular Entry	69	Nickel	8
58	Backshell: Lightweight Top Circular Entry	100	Nickel	11
59	Backshell: Lightweight Top Circular Entry	69	Gold	8
60	Backshell: Lightweight Top Circular Entry	100	Gold	11
61	Backshell: Lightweight Top Elliptical Entry	69	Nickel	8
62	Backshell: Lightweight Top Elliptical Entry	100	Nickel	12
63	Backshell: Lightweight Top Elliptical Entry	69	Gold	9
64	Backshell: Lightweight Top Elliptical Entry	100	Gold	12
65	Backshell: Lightweight 45° Circular Entry	69	Nickel	8
66	Backshell: Lightweight 45° Circular Entry	100	Nickel	11
67	Backshell: Lightweight 45° Circular Entry	69	Gold	9
68	Backshell: Lightweight 45° Circular Entry	100	Gold	12
69	Backshell: Lightweight 45° Elliptical Entry	69	Nickel	11
70	Backshell: Lightweight 45° Elliptical Entry	100	Nickel	15
71	Backshell: Lightweight 45° Elliptical Entry	69	Gold	11
72	Backshell: Lightweight 45° Elliptical Entry	100	Gold	15

NOTES:

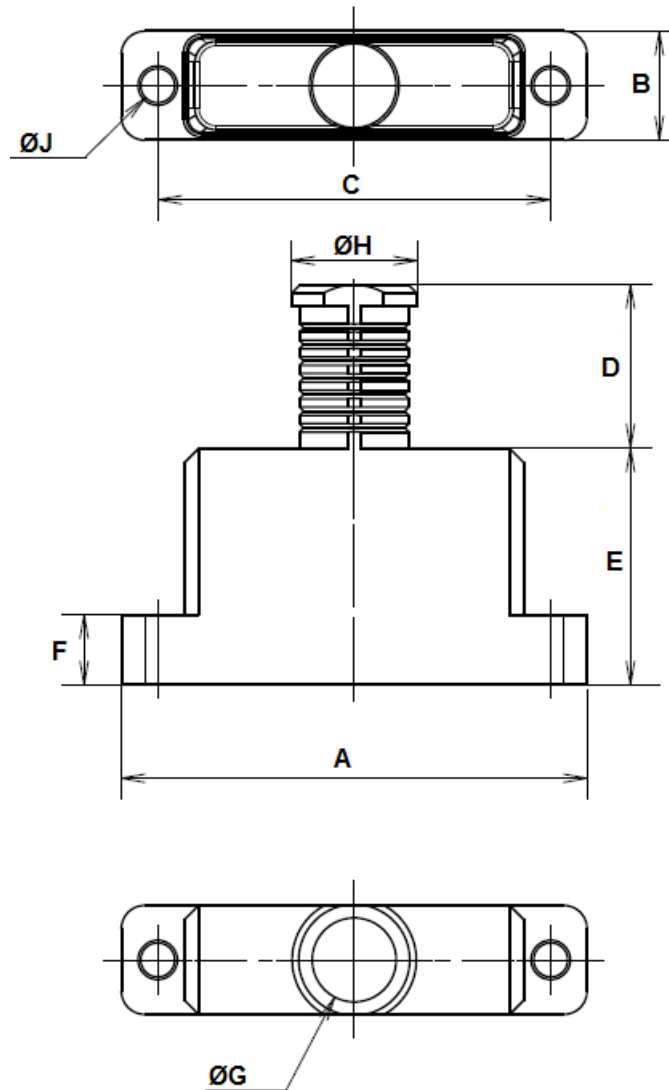
1. Variants 57 to 72 (shell sizes 69, 100) only apply to ESCC Detail Specification No. [3401/029](#).
2. See Para. 4.4.1.

TABLE 1(b) - MAXIMUM RATINGS

No.	Characteristic	Symbol	Maximum Rating	Unit
1	Operating Temperature Range	T _{op}	-55 to +125	°C
2	Storage Temperature Range	T _{stg}	-55 to +125	°C

FIGURE 2 - PHYSICAL DIMENSIONS

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

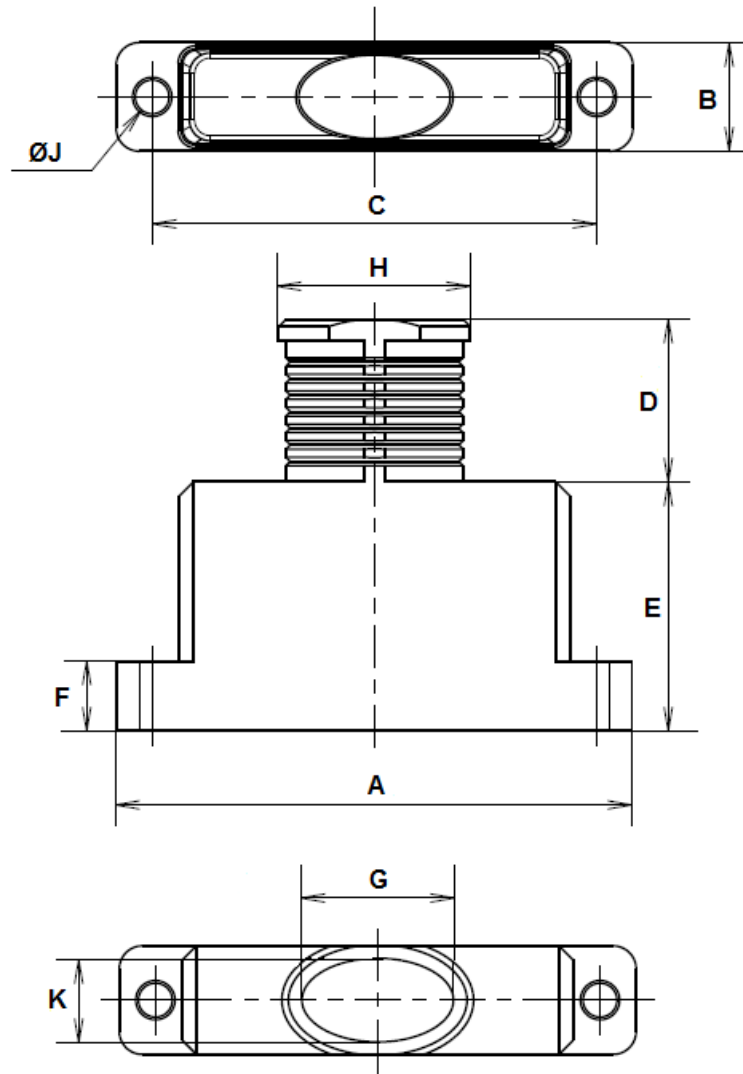


Shell Size	A Max	B Max	C		D Typ	E Typ	F Typ	ØG		ØH Max	ØJ	
			Min	Max				Min	Max		Min	Max
9	19.94	7.82	14.22	14.48	11.7	10	5	5.8	6.2	9.2	2.35	2.45
15	23.75	7.82	18.03	18.29	11.7	12	5	5.8	6.2	9.2	2.35	2.45
21	27.56	7.82	21.84	22.1	11.7	14	5	5.8	6.2	9.2	2.35	2.45
25	30.1	7.82	24.38	24.64	11.7	16	5	5.8	6.2	9.2	2.35	2.45
31	33.91	7.82	28.19	28.45	11.7	17	5	5.8	6.2	9.2	2.35	2.45
37	37.72	7.82	32	32.26	11.7	18	5	5.8	6.2	9.2	2.35	2.45
51	36.45	8.92	30.73	30.99	11.7	19	5	6.8	7.2	10.2	2.35	2.45
69	44.07	8.92	38.35	38.61	11.9	19.7	5	6.95	7.05	8.7	2.23	2.39
100	55.12	10.74	45.59	45.85	11.9	21.3	5	8.25	8.35	10.5	3.73	3.86

NOTES:

1. All dimensions are in millimetres.

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

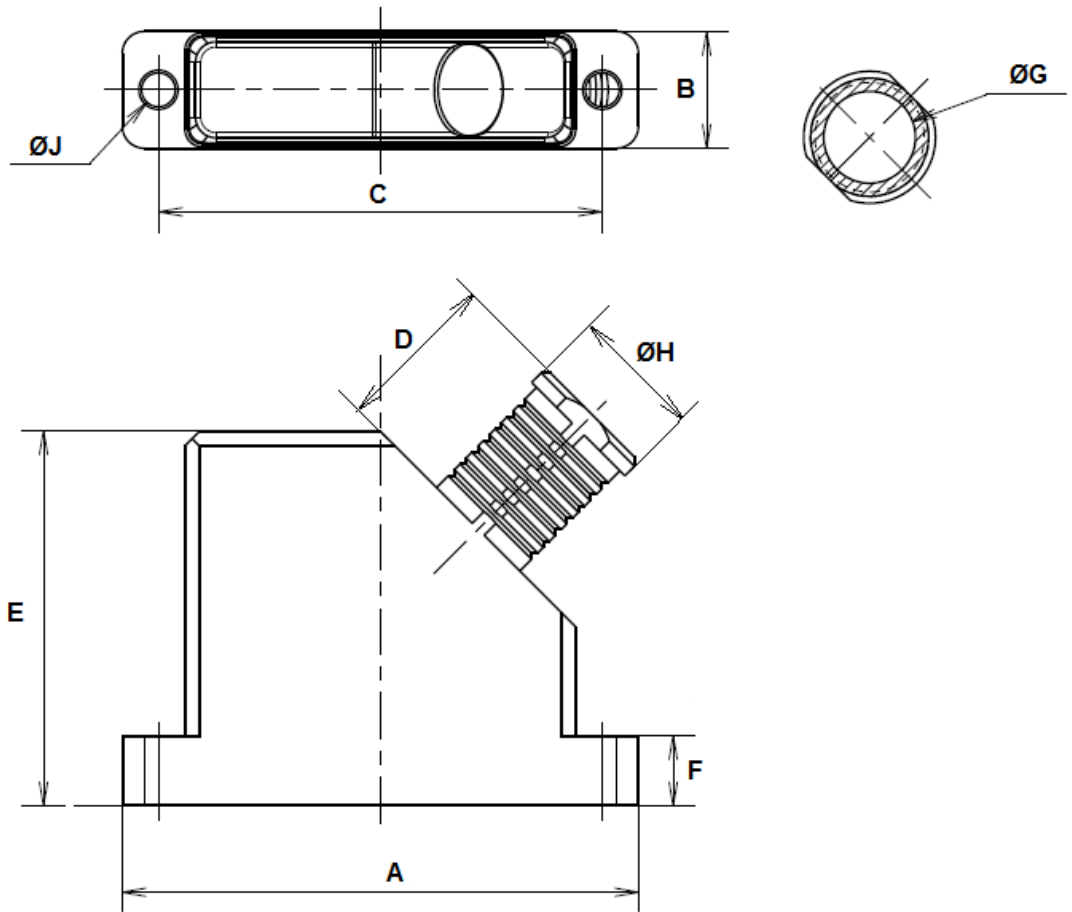


Shell Size	A Max	B Max	C		D Typ	E Typ	F Typ	G		H Max	ØJ		K	
			Min	Max				Min	Max		Min	Max	Min	Max
9	19.94	7.82	14.22	14.48	11.7	10	5	7.7	8.1	11.1	2.35	2.45	5.8	6.2
15	23.75	7.82	18.03	18.29	11.7	12	5	10.5	10.9	13.9	2.35	2.45	5.8	6.2
21	27.56	7.82	21.84	22.1	11.7	14	5	14.8	15.2	18.2	2.35	2.45	5.8	6.2
25	30.1	7.82	24.38	24.64	11.7	16	5	17.3	17.7	20.7	2.35	2.45	5.8	6.2
31	33.91	7.82	28.19	28.45	11.7	17	5	20.6	21	24	2.35	2.45	5.8	6.2
37	37.72	7.82	32	32.26	11.7	18	5	24.4	24.8	27.8	2.35	2.45	5.8	6.2
51	36.45	8.92	30.73	30.99	11.7	19	5	23.2	23.6	26.6	2.35	2.45	6.8	7.2
69	44.07	8.92	38.35	38.61	11.9	19.7	5	24.8	25	28.02	2.23	2.39	7.15	7.25
100	55.12	10.74	45.59	45.85	11.9	21.3	5	25.9	26.1	29.12	3.73	3.86	8.25	8.35

NOTES:

1. All dimensions are in millimetres.

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

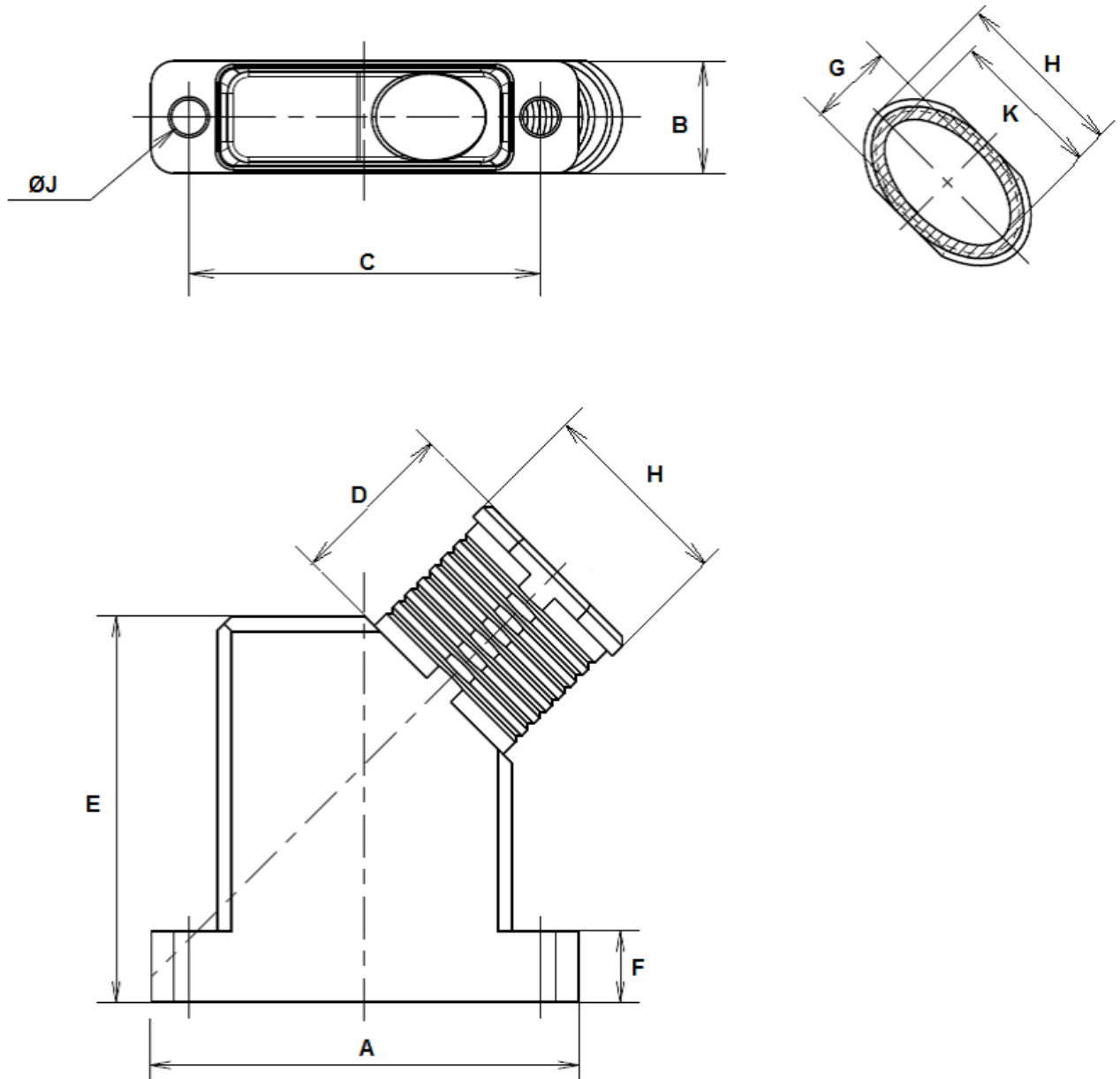


Shell Size	A Min	B Max	C		D Typ	E Typ	F Typ	ØG		ØH Max	ØJ	
			Min	Max				Min	Max		Min	Max
9	19.94	7.82	14.22	19.94	11.7	21	5	5.1	5.5	8.5	2.35	2.45
15	23.75	7.82	18.03	23.75	11.7	23	5	5.8	6.2	9.2	2.35	2.45
21	27.56	7.82	21.84	27.56	11.7	24	5	5.8	6.2	9.2	2.35	2.45
25	30.1	7.82	24.38	30.1	11.7	27	5	5.8	6.2	9.2	2.35	2.45
31	33.91	7.82	28.19	33.91	11.7	28	5	5.8	6.2	9.2	2.35	2.45
37	37.72	7.82	32	37.72	11.7	29	5	5.8	6.2	9.2	2.35	2.45
51	36.45	8.92	30.73	36.45	11.7	30	5	6.8	7.2	10.2	2.35	2.45
69	44.07	8.92	38.35	44.07	11.9	25.4	5	6.95	7.05	8.7	2.23	2.39
100	55.12	10.74	45.59	55.12	11.9	27.4	5	8.25	8.35	10.5	3.73	3.86

NOTES:

1. All dimensions are in millimetres.

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



Shell Size	A Min	B Max	C		D Typ	E Typ	F Typ	G		H Max	ØJ		K	
			Min	Min				Min	Max		Min	Max	Min	Max
9	19.94	7.82	14.22	19.94	11.7	21	5	4.8	5.2	8.2	2.35	2.45	5.8	6.2
15	23.75	7.82	18.03	23.75	11.7	23	5	7.3	7.7	10.7	2.35	2.45	5.8	6.2
21	27.56	7.82	21.84	27.56	11.7	24	5	9.3	9.7	12.7	2.35	2.45	5.8	6.2
25	30.1	7.82	24.38	30.1	11.7	27	5	10.6	11	14	2.35	2.45	5.8	6.2
31	33.91	7.82	28.19	33.91	11.7	28	5	12.3	12.7	15.7	2.35	2.45	5.8	6.2
37	37.72	7.82	32	37.72	11.7	29	5	14.8	15.2	18.2	2.35	2.45	5.8	6.2
51	36.45	8.92	30.73	36.45	11.7	30	5	16.8	17.2	20.2	2.35	2.45	6.8	7.2
69	44.07	8.92	38.35	44.07	11.9	35.9	5	7.15	7.25	28.02	2.23	2.39	24.8	25
100	55.12	10.74	45.59	55.12	11.9	36.9	5	8.25	8.35	29.12	3.73	3.86	25.9	26.1

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 with nickel finish (see Table 1(a)) shall have a minimum plating thickness of 25.4µm of electroless nickel.

Variants with gold finish (see Table 1(a)) shall have a plating thickness of 0.7µm minimum of gold over 25.4µm 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.