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Pages 1 to 18

CONTACTS, ELECTRICAL, CRIMP

FOR 3401/007 AND 3401/008 CONNECTORS

ESA/SCC Detail Specification No. 3401/009

space components
coordination group

Issue/Rev.	Date	Approved by	
		SCCG Chairman	ESA Director General or his Deputy
Issue 3	May 1998		
Revision 'A'	April 1999		
Revision 'B'	June 1999		
Revision 'C'	March 2002		

DOCUMENTATION CHANGE NOTICE

Rev. Letter	Rev. Date	Reference	CHANGE Item	Approved DCR No.
		This Issue supersedes Issue 2 and incorporates all modifications defined in Revision 'A' to Issue 2 and the changes agreed in the following DCRs:-		
		Cover page	: Title amended	221410
		DCN		None
		Para. 1.1	: Existing paragraph deleted and new paragraph added	221410
		Para. 1.6	: Deleted in toto	221410
		Para. 2	: Items (a), (b) and (c), Titles amended	221410
			: Item (e), Specification number amended	221410
		Table 1(a)	: Existing Table deleted and new Table added	221410
		Table 1(b)	: Existing Table deleted and new Table added	221410
		Figure 1	: Entry added	221410
		Figure 2	: Variants 01 to 03, Drawings and Table amended and Notes added	221410
			: Variants 15 and 17, Drawings amended and Table and Notes added	221410/ 23888
			: Variants 02 to 14, Drawings and Table amended and Notes added	221410
			: Variants 16 and 18, Drawings amended and Table and Notes added	221410/ 23888
		Para. 4.1	: End of first paragraph amended	21019
			: Second paragraph added	21019
		Para. 4.2	: Text deleted	221410
		Paras. 4.2.1 to 4.2.5	: Paragraphs added	221410
		Paras. 4.3.3 to 4.3.12	: Paragraphs amended/added	221410
		Paras. 4.3.3 to 4.3.11	: Paragraph sequence amended	23888
		Figure 3	: Deleted in toto	221410
		Para. 4.4.1	: Paragraph deleted and new paragraph added	221410
		Para. 4.4.2	: Paragraph deleted and new paragraph added	221410
		Paras. 4.4.3 to 4.4.6	: Paragraphs added	221410
		Para. 4.5.2	: "(see Table 1(a))" added to "Type Variant"	221410
		Table 2	: Existing Table deleted and new Table added	221410
		Figure 4	: Deleted in toto	221410
		Paras. 4.8.1 to 4.8.3	: Title and text amended	221410
		Table 6	: Table added	221410/ 23888
'A'	Apr. '99	P1. Cover page		None
		P2. DCN		None
		P10. Figure 2	: In lower drawing, angle amended	23901
			: In the Table , Dimenison R values moved from Max. to Min.	23901
		P11. Figure 2	: In upper drawing, "(3)" added to ∅F and ∅G	23901
'B'	Jun. '99	P1. Cover page	: "Solder" added to Title	221521
		P2. DCN		None
		P2A. DCN	: Page added	None
		P5. Para. 1.1	: "Solder" added after "Crimp" in first sentence	221521

DOCUMENTATION CHANGE NOTICE

Rev. Letter	Rev. Date	Reference	CHANGE Item	Approved DCR No.
		P7. Table 1(a)	: Variants 16 and 18, "Probe Dia" amended	221521
			: Variants 19 and 20 added	221521
			: New Note 4 added	221521
		P10A. Figure 2	: New Page 10A added for Variant 19	221521
		P12A. Figure 2	: New Page 12A added for Variant 20	221521
		P13. Paras. 4.2.4 and 4.2.5	: After "Not applicable", "for Variants 01 to 18" added	221521
		P14. Para. 4.3.12	: "Not applicable" replaced by new text	221521
		P16. Table 2	: No. 2, "Variants 15-18" replaced by "Variants 15-20"	221521
		P18. Table 6	: No. 23, Identification, Test Methods, Limits and Conditions amended	221521
'C'	Mar. '02	P1. Cover page	:	None
		P2A. DCN	:	None
		P6. Table 1(a)	: Variants 05 and 06. "Crimp Barrel" colour changed	221653
			: Variants 15, 16, 17 and 18, "Mating End" and "Crimp Barrel" colours changed	221653

TABLE OF CONTENTS

1. GENERAL

1.1 SCOPE

This specification details the ratings, physical and electrical characteristics, test and inspection data for Contacts, Electrical, Crimp, Solder, Gauge 20, 16, 12 and 8 for 3401/007 and 3401/008 Connectors.

These contacts shall be packed separately from the connectors and may be procured either with the connectors or separately.

This specification shall be read in conjunction with:

- ESA/SCC Generic Specification No. 3401, Connectors, Electrical, Non-Filtered, Circular and Rectangular.
- ESA/SCC Detail Specification No. 3401/007, Connectors, Miniature, Electrical, Circular, Bayonet Coupling, Removable Crimp Contacts, Based on Type DFE.
- ESA/SCC Detail Specification No. 3401/008, Connectors, Miniature, Electrical, Circular, Push-Pull Coupling, Removable Crimp Contacts, Based on Type DBAS.

the requirements of which are supplemented herein.

1.2 COMPONENT TYPE VARIANTS

Variants of the basic type of contacts specified herein, which are also covered by this specification, are scheduled 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 contacts specified herein, are scheduled in Table 1(b).

1.4 PARAMETER DERATING INFORMATION (FIGURE 1)

Not applicable.

1.5 PHYSICAL DIMENSIONS

The physical dimensions of the contacts 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) ESA/SCC Generic Specification No. 3401, Connectors, Electrical, Non-Filtered, Circular and Rectangular.

(b) ESA/SCC Detail Specification No. 3401/007, Connectors, Miniature, Electrical, Circular, Bayonet-Coupling, Removable Crimp Contacts, Based on Type DFE.

(c) ESA/SCC Detail Specification No. 3401/008, Connectors, Miniature, Electrical, Circular, Push-Pull Coupling, Removable Crimp Contacts, Based on Type DBAS.

(d) MIL-G-45204, Gold-plating, Electro-deposited.

(e) MIL-C-14550, Copper-plating, Electro-deposited.

3. TERMS, DEFINITIONS, ABBREVIATIONS, SYMBOLS AND UNITS

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

TABLE 1(a) - TYPE VARIANTS

Variant	Type	Mating End	Crimp Barrel	Rated Current	Accepted Wire	Max. Weight	Engagement & Separation		Test Pin Dia (mm)		Contact Capability		Contact Retent. Force	Contact Insert/ Withdr. Force	Probe Damage			Oversize Pin Excl.		
											Weight				Moment	Probe Dia (mm)		Force Max.	Test Pin Dia (mm)	
		Size Colour	Size Colour	(A)	(AWG)	(g)	Engag. Max. (N) (1)	Separ. Min. (N) (1)	Min.	Max.	Pick-up (g) (2)	Drop (g) (3)	Max. (N)	Max. (N)	(N.cm)	Min.	Max.	(N)	Min.	Max.
01	Male	20 Red	20 Red	7.5	20 24	0.32	-	-	-	-	-	-	70	44	-	-	-	-	-	-
02	Female	20 Red	20 Red	7.5	20 24	0.32	3.33 0.28	2.22 0.20	1.039 0.990	1.042 0.993	- 28.35	226.8 -	70	44	5.75	0.99	1.01	3.4	1.17	1.18
03	Male	20 Red	18 Violet	10	18 22	0.32	-	-	-	-	-	-	70	44	-	-	-	-	-	-
04	Female	20 Red	18 Violet	10	18 22	0.32	3.33 0.28	2.22 0.20	1.039 0.990	1.042 0.993	- 28.35	226.8 -	70	44	5.75	0.99	1.01	3.4	1.17	1.18
05	Male	20 Red	26 White	2.0	26 30	0.32	-	-	-	-	-	-	70	44	-	-	-	-	-	-
06	Female	20 Red	26 White	2.0	26 30	0.32	3.33 0.28	2.22 0.20	1.039 0.990	1.042 0.993	- 28.35	226.8 -	70	44	5.75	0.99	1.01	3.4	1.17	1.18
07	Male	16 Blue	16 Blue	13	16 20	0.60	-	-	-	-	-	-	116	44	-	-	-	-	-	-
08	Female	16 Blue	16 Blue	13	16 20	0.64	5.55 0.56	3.75 0.56	1.610 1.562	1.613 1.565	- 56.70	382.6 -	116	44	23	1.56	1.58	5.6	1.73	1.74
09	Male	16 Blue	20 Red	7.5	20 24	0.60	-	-	-	-	-	-	116	44	-	-	-	-	-	-
10	Female	16 Blue	20 Red	7.5	20 24	0.64	5.55 0.56	3.75 0.56	1.610 1.562	1.613 1.565	- 56.70	382.6 -	116	44	23	1.56	1.58	5.6	1.73	1.74
11	Male	12 Yellow	12 Yellow	23	12 14	1.25	-	-	-	-	-	-	116	44	-	-	-	-	-	-
12	Female	12 Yellow	12 Yellow	23	12 14	1.25	8.40 0.83	5.56 0.85	2.411 2.362	2.413 2.365	- 84	567 -	116	44	23	2.36	2.38	8.4	2.53	2.54
13	Male	12 Yellow	16 Blue	13	16 20	1.25	-	-	-	-	-	-	116	44	-	-	-	-	-	-

NOTES : See Page 7.

TABLE 1(a) - TYPE VARIANTS

Variant	Type	Mating End	Crimp Barrel	Rated Current	Accepted Wire	Max. Weight	Engagement & Separation		Test Pin Dia (mm)		Contact Capability		Contact Retent. Force	Contact Insert/ Withdr. Force	Probe Damage			Oversize Pin Excl.		
											Weight				Moment	Probe Dia (mm)		Force Max.	Test Pin Dia (mm)	
		Size Colour	Size Colour	(A)	(AWG)	(g)	Engag. Max. (N) (1)	Separ. Min. (N) (1)	Min.	Max.	Pick-up (g) (2)	Drop (g) (3)	Max. (N)	Max. (N)	(N.cm)	Min.	Max.	(N)	Min.	Max.
14	Female	12 Yellow	16 Blue	13	16 20	1.25	8.40 0.83	5.56 0.85	2.411 2.362	2.413 2.365	- 84	567 -	116	44	23	2.36	2.38	8.4	2.53	2.54
15	Male	8 Green	8 Green	46	8	1.25	-	-	-	-	-	-	116	44	-	-	-	-	-	-
16	Female	8 Green	8 Green	46	8	1.25	45.40 1.40	45.40 1.40	4.960 4.892	4.963 4.905	- 141.75	4536 -	116	44	23	4.88	4.90	N/A	N/A	N/A
17	Male	8 Green	10 Brown	33	10	1.25	-	-	-	-	-	-	116	44	-	-	-	-	-	-
18	Female	8 Green	10 Brown	33	10	1.25	45.40 1.40	45.40 1.40	4.960 4.892	4.963 4.905	- 141.75	4536 -	116	44	23	4.88	4.90	N/A	N/A	N/A
19	Male	8 (4)	8 10(4)	46 33	8 10	1.25	-	-	-	-	-	-	116	44	-	-	-	-	-	-
20	Female	8 (4)	8 10(4)	46 33	8 10	1.25	45.40 1.40	45.40 1.40	4.960 4.892	4.963 4.905	- 141.75	4536 -	116	44	23	4.88	4.90	N/A	N/A	N/A

NOTES

1. 1st line with maximum diameter test pin; 2nd line with minimum diameter test pin.
2. With minimum diameter test pin and minimum insertion depth of 4.0mm.
3. With maximum diameter test pin and minimum insertion depth of 4.0mm.
4. These contacts are not colour coded.

TABLE 1(b) - MAXIMUM RATINGS

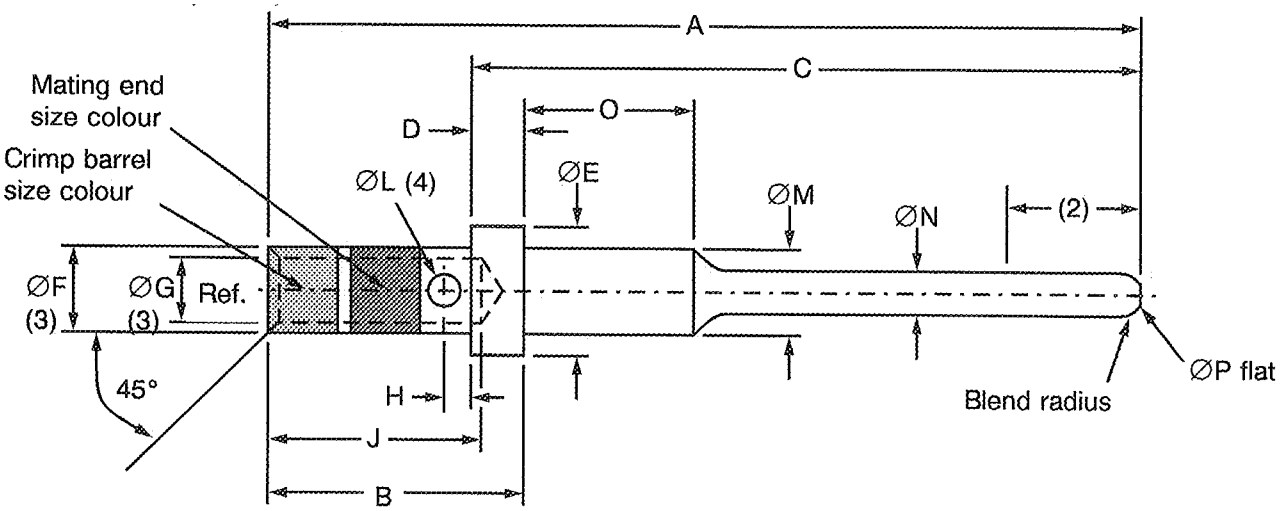
No.	CHARACTERISTICS	SYMBOL	MAXIMUM RATINGS	UNITS
1	Rated Current	I_{CR}	See Table 1(a)	A
2	Operating Temperature Range	T_{op}	−65 to +200	°C
3	Storage Temperature Range	T_{stg}	−65 to +200	°C

FIGURE 1 - PARAMETER DERATING INFORMATION

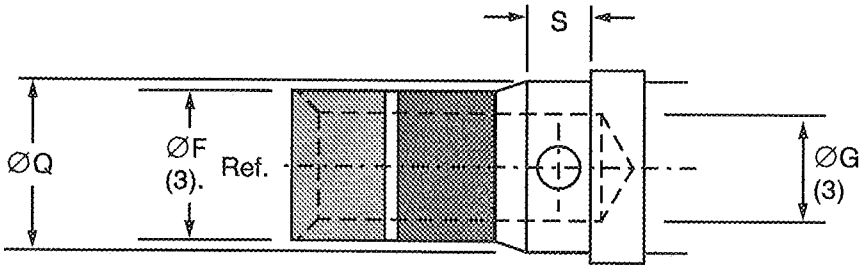
Not applicable.

FIGURE 2 - PHYSICAL DIMENSIONS

VARIANTS 01-03-05-07-09-11-13, MALE CONTACT



CONDUCTOR BARREL SHAPE FOR VARIANTS 05-09-11-13



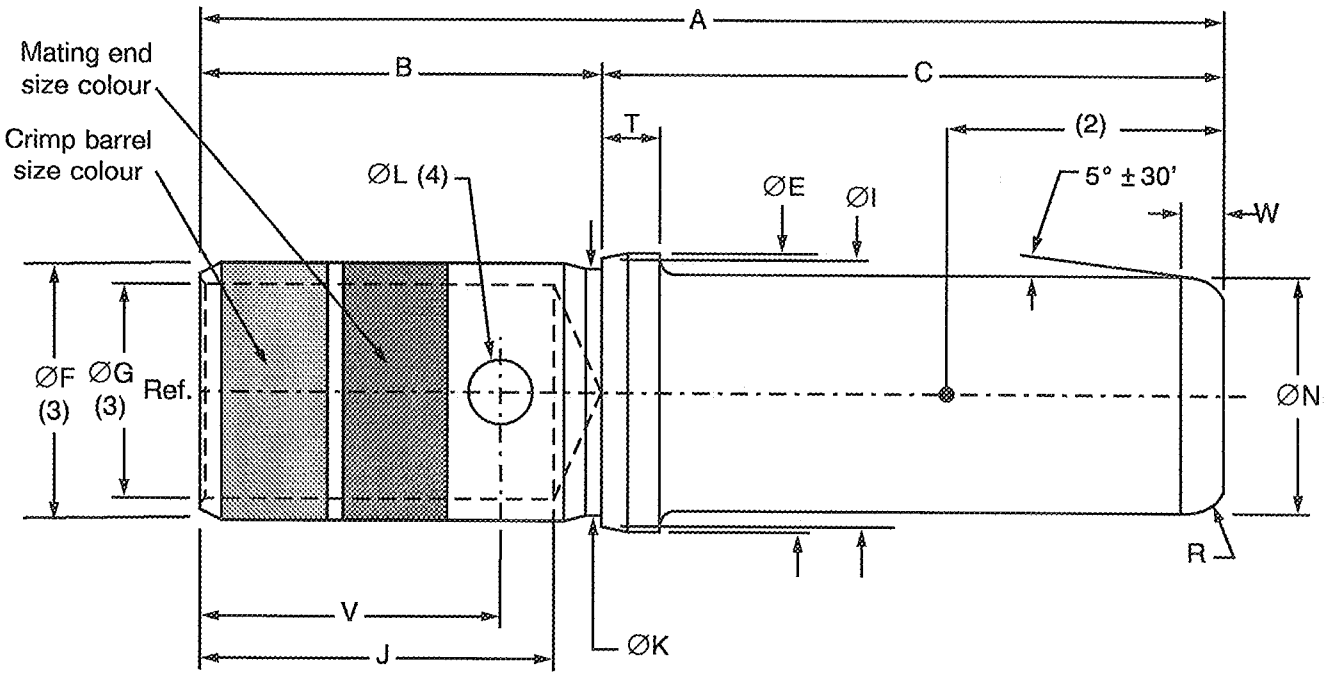
Variant	Dimensions	A	B	C	D	ØE	ØF	ØG	H	J	ØL	ØM	ØN	O	ØP	ØQ	S
01	Min.	-	4.82	13.80	0.74	2.53	1.92	1.21	0.63	4.07	0.67	1.92	0.99	3.09	-	-	-
	Max.	18.39	5.18	13.95	0.84	2.61	1.98	1.27	0.89	4.67	0.81	1.98	1.05	3.35	0.30	-	-
03	Min.	-	4.82	13.80	0.74	2.53	1.92	1.31	0.63	4.07	0.67	1.92	0.99	3.09	-	-	-
	Max.	18.39	5.18	13.95	0.84	2.61	1.98	1.37	0.89	4.67	0.81	1.98	1.05	3.35	0.30	-	-
05	Min.	-	4.82	13.80	0.74	2.53	1.44	0.61	0.63	4.07	0.67	1.92	0.99	3.09	-	1.92	1.27
	Max.	18.39	5.18	13.95	0.84	2.61	1.49	0.67	0.89	4.67	0.81	1.98	1.05	3.35	0.30	1.98	1.52
07	Min.	-	7.36	14.17	1.12	3.30	2.56	1.65	0.63	6.35	0.90	2.56	1.56	3.09	0.38	-	-
	Max.	20.95	7.75	14.32	1.22	3.38	2.62	1.73	0.89	7.21	1.07	2.62	1.61	3.35	0.63	-	-
09	Min.	-	7.36	14.17	1.12	3.30	1.92	1.21	0.63	6.35	0.90	2.56	1.56	3.09	0.38	2.56	1.27
	Max.	20.95	7 75	14.32	1.22	3.38	1.98	1.27	0.89	7.21	1 07	2.62	1.61	3.35	0 63	2.62	1.52
11	Min.	-	7.36	14.17	1.12	4.75	3 76	2.49	0.63	6.35	0.90	3.76	2.36	2.92	1.32	3.94	1.27
	Max.	20.95	2.75	14 32	1.22	4.89	3.83	2.59	0.89	7.21	1.07	3.83	2.41	3 05	1.57	4.01	1.52
13	Min.	-	7.36	14.17	1.12	4.75	2.56	1.65	0.63	6.35	0.90	3.76	2.36	2.92	1.32	3.94	1.27
	Max.	20.95	7.75	14.32	1.22	4.83	2.62	1.73	0.89	7.21	1.07	3.83	2.41	3.05	1.57	4.01	1.52

NOTES

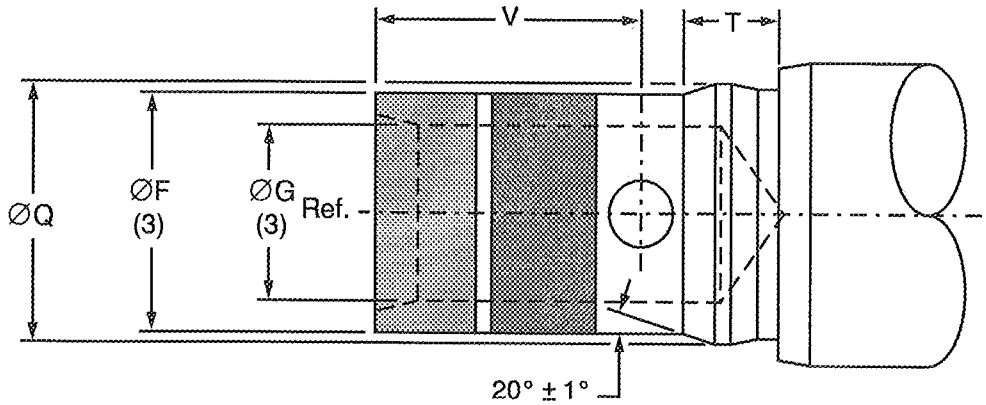
1. All dimensions are in millimetres.
2. Measurement point for plating thickness = 4.0 ± 1.0.
3. ØF and ØG to be concentric within 0.10TIR.
4. Inspection hole shall only penetrate one wall of the crimp barrel.

FIGURE 2 - PHYSICAL DIMENSIONS (CONTINUED)

VARIANTS 15-17, MALE CONTACT



CONDUCTOR BARREL SHAPE FOR VARIANT 17



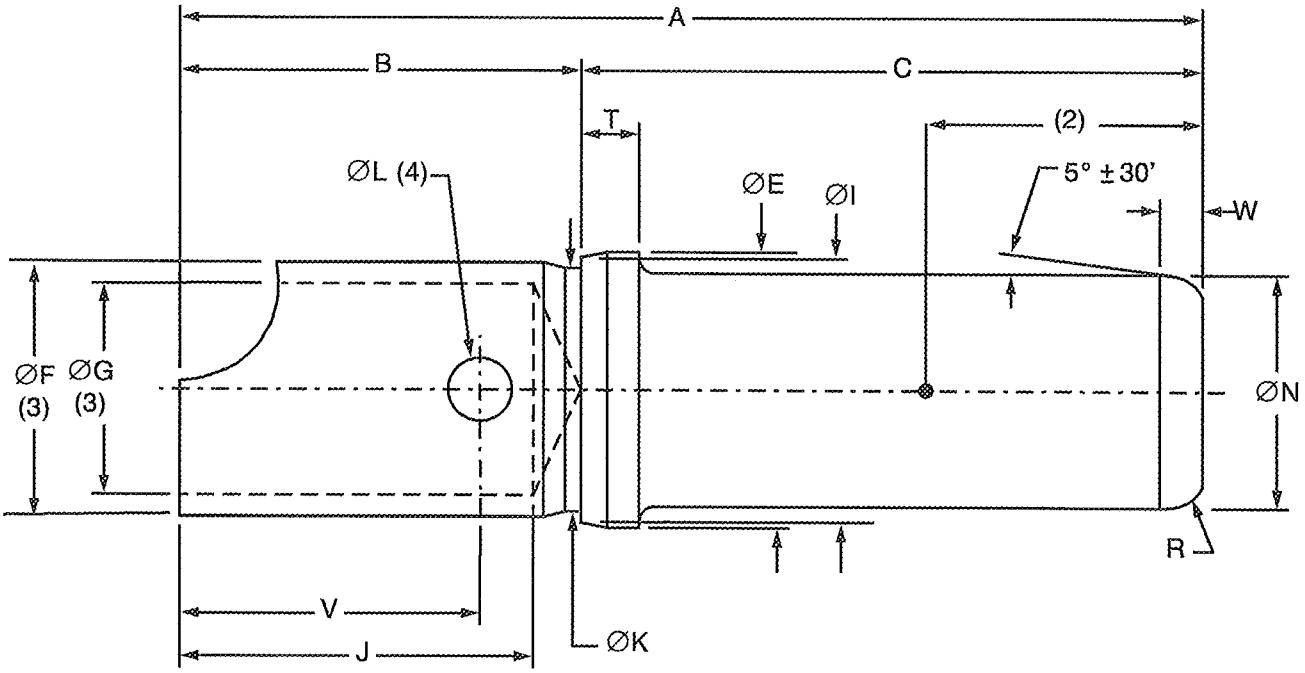
Variant	Dimensions	A	B	C	ØE	ØF	ØG	ØI	J	ØK	ØL	ØN	ØQ	R	T	V	W
15	Min.	-	8.47	13.79	6.25	5.62	4.51	6.08	7.03	5.26	1.15	4.90	-	0.50	1.41	6.13	0.75
	Max.	22.75	8.81	13.94	6.33	5.70	4.60	6.16	7.83	5.46	1.35	4.96	-	-	1.53	6.59	1.05
17	Min.	-	8.47	13.79	6 25	4.96	3.45	6.08	7.03	5.26	1.15	4.90	5.62	0.50	1.87	5.78	0.75
	Max.	22.75	8.81	13.94	6.33	5.08	3.54	6.16	7.83	5.46	1.35	4.96	5.70	-	2.13	6.04	1.05

NOTES

1. All dimensions are in millimetres.
2. Measurement point for plating thickness = 4.0 ± 1.0.
3. ØF and ØG to be concentric within 0.10TIR.
4. Inspection hole shall only penetrate one wall of crimp barrel.

FIGURE 2 - PHYSICAL DIMENSIONS (CONTINUED)

VARIANT 19, MALE CONTACT



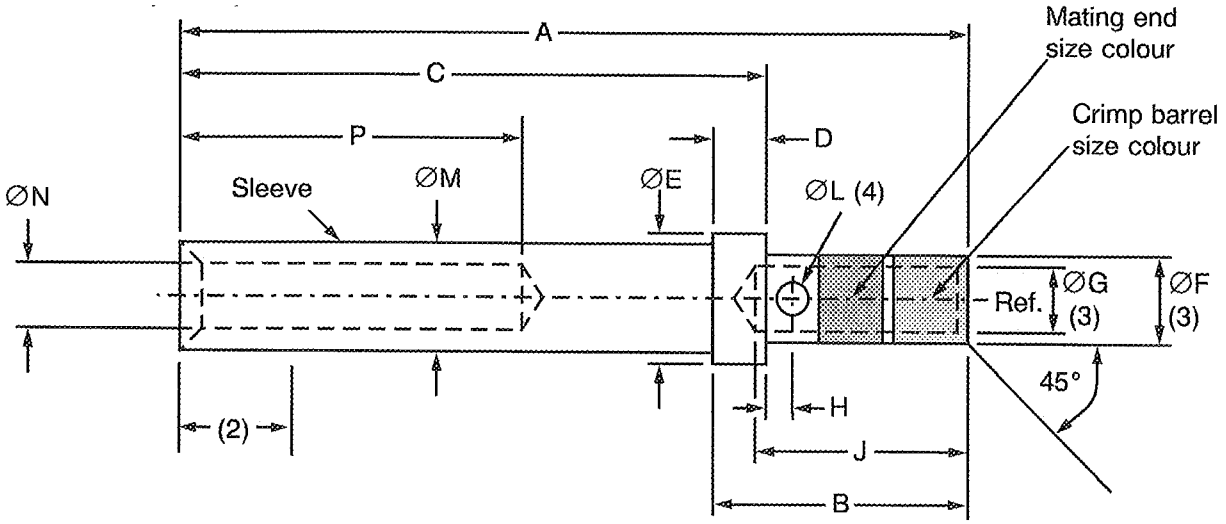
Variant	Dimensions	A	B	C	ØE	ØF	ØG	ØI	J	ØK	ØL	ØN	ØQ	R	T	V	W
19	Min.	-	8.47	13.79	6.25	5.62	4.51	6.08	7.15	5.26	1.15	4.90	-	-	1.41	6.13	0.75
	Max.	22.75	8.81	13.94	6.33	5.70	4.60	6.16	7.65	5.46	1.35	4.96	-	0.50	1.53	6.59	1.05

NOTES

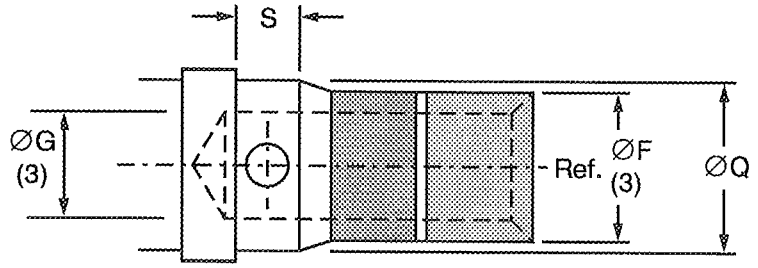
1. All dimensions are in millimetres.
2. Measurement point for plating thickness = 4.0 ± 1.0.
3. ØF and ØG to be concentric within 0.10TIR.
4. Inspection hole shall only penetrate one wall of the solder barrel.

FIGURE 2 - PHYSICAL DIMENSIONS (CONTINUED)

VARIANTS 02-04-06-08-10-12-14, FEMALE CONTACT



CONDUCTOR BARREL SHAPE FOR VARIANTS 06-10-12-14



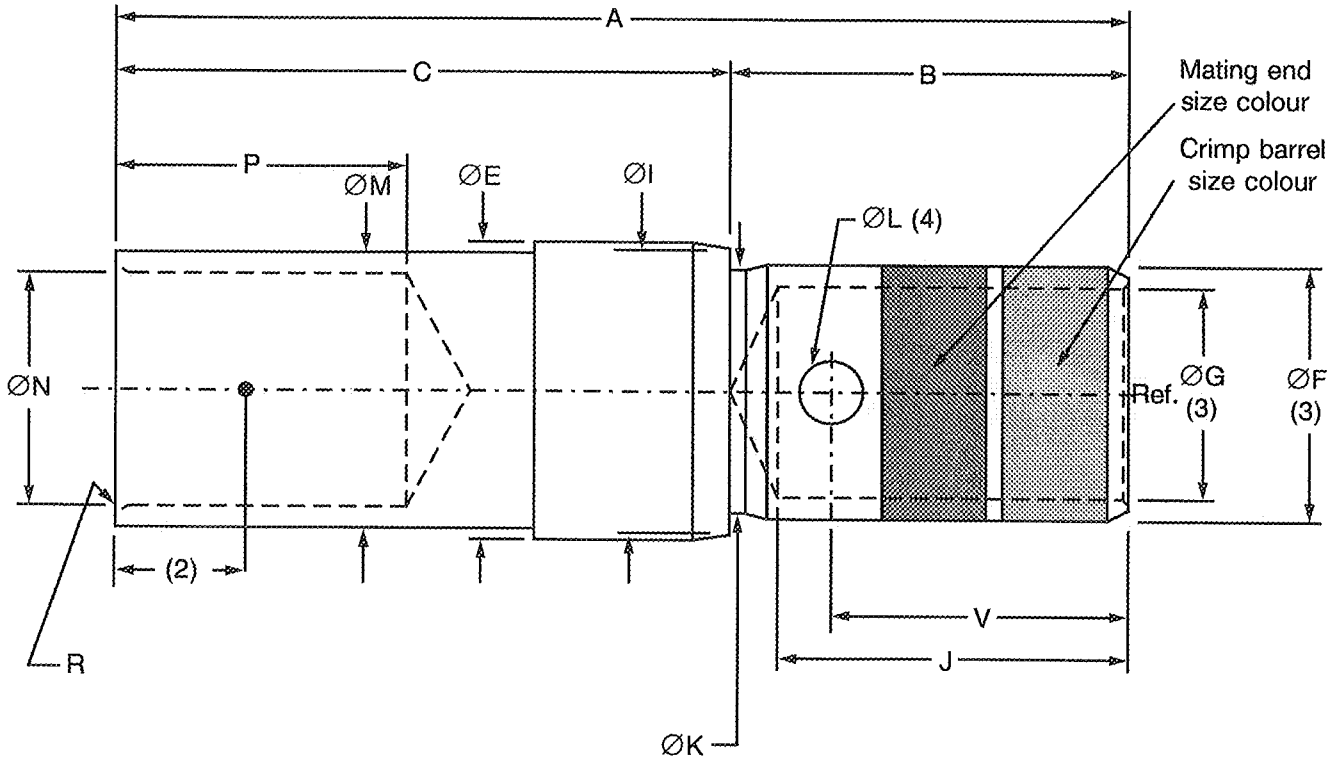
Variant	Dimensions	A	B	C	D	ØE	ØF	ØG	H	J	ØL	ØM	ØN	P	ØQ	S
02	Min.	-	4.82	12.17	0.74	2.53	1.92	1.21	0.63	4.07	0.67	1.92	1.06	8 4	-	-
	Max.	16.76	5.18	12.32	0 84	2.61	1.98	1.27	0.89	4.67	0.81	1.98	1.12	9.4	-	-
04	Min.	-	4.82	12.17	0.74	2.53	1.92	1.31	0.63	4.07	0.67	1.92	1.06	8.4	-	-
	Max.	16.76	5.18	12.32	0.84	2.61	1.98	1.37	0.89	4.67	0.81	1.98	1.12	9.4	-	-
06	Min	-	4.82	12.17	0.74	2.53	1.44	0.61	0.63	4.07	0.67	1.92	1.06	8.4	1.92	1.27
	Max.	16.76	5.18	12.32	0.84	2.61	1.49	0.67	0.89	4.67	0.81	1.98	1.12	9.4	1.98	1.52
08	Min.	-	7.36	12.55	1.12	3.30	2.56	1.65	0.63	6.35	0.90	2.79	1.65	8.4	-	-
	Max.	19.33	7.75	12.70	1.22	3.38	2.62	1.73	0.89	7.21	1.07	2.87	1.73	9.4	-	-
10	Min.	-	7.36	12.55	1.12	3.30	1.92	1.21	0.63	6.35	0.90	2.79	1.65	8.4	2.56	1.27
	Max.	19.33	7.75	12.70	1.22	3.38	1.98	1.27	0.89	7.21	1.07	2.87	1.73	9.4	2.62	1.52
12	Min.	-	7.36	12.55	1.12	4.75	3.76	2.49	0.63	6.35	0.90	4.01	2.46	8.4	3.94	1.27
	Max.	19.33	7 75	12.70	1.22	4.83	3.83	2.59	0.89	7.21	1.07	4.09	2.54	9.4	4.01	1 52
14	Min.	-	7.36	12.55	1.12	4.75	2.56	1.65	0.63	6.35	0.90	4.01	2.46	8.4	3.94	1.27
	Max.	19.33	7.75	12.70	1.22	4.83	2.62	1.73	0.89	7.21	1.07	4.09	2.54	9.4	4.01	1.52

NOTES

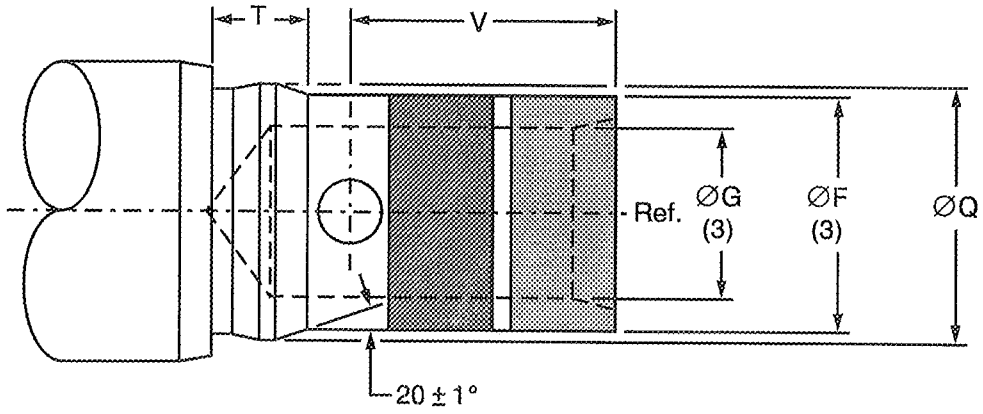
1. All dimensions are in millimetres.
2. Measurement point for plating thickness = 2.0 ± 1.0.
3. ØF and ØG to be concentric within 0.10TIR.
4. Inspection hole shall only penetrate one wall on the crimp barrel.

FIGURE 2 - PHYSICAL DIMENSIONS (CONTINUED)

VARIANTS 16-18, FEMALE CONTACT



CONDUCTOR BARREL SHAPE FOR VARIANT 18



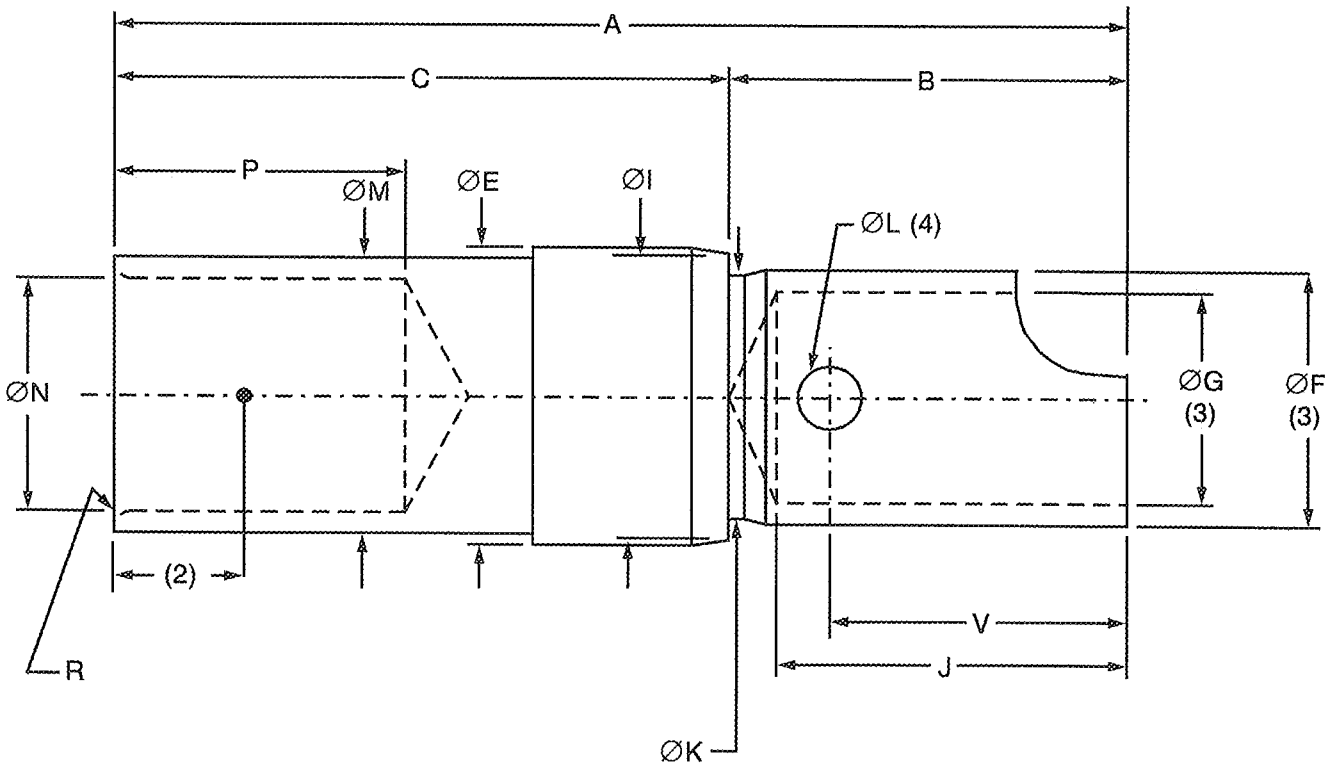
Variant	Dimensions	A	B	C	ØE	ØF	ØG	ØI	J	ØK	ØL	ØM	ØN	P	ØQ	R	T	V
16	Min.	-	8.47	13.09	6.25	5.62	4.51	6.08	7.03	5.26	1.15	6.17	4.98	6.21	-	0.12	-	6.13
	Max.	22.02	8.81	13.21	6.33	5.70	4.60	6.16	7.83	5.46	1.35	6.21	5.08	6.75	-	-	-	6.59
18	Min.	-	8.47	13.09	6.25	4.96	3.45	6.08	7 03	5.26	1.15	6.17	4.98	6.21	5.62	0.12	T.87	5.78
	Max.	22.02	8.81	13.21	6.33	5.08	3.54	6.16	7.83	5.46	1.35	6.21	5.08	6.75	5.70	-	2.13	6.04

NOTES

1. All dimensions are in millimetres.
2. Measurement point for plating thickness = 4.0 ± 1.0.
3. ØF and ØG to be concentric within 0.10TIR.
4. Inspection hole shall only penetrate one wall of crimp barrel.

FIGURE 2 - PHYSICAL DIMENSIONS (CONTINUED)

VARIANT 20, FEMALE CONTACT



Variant	Dimensions	A	B	C	ØE	ØF	ØG	ØI	J	ØK	ØL	ØM	ØN	P	ØQ	R	T	V
20	Min.	-	8.47	13.09	6.25	5.62	4.51	6.08	7.15	5.26	1.15	6.17	4.98	6.21	-	0.12	-	6.13
	Max.	22.02	8.81	13.21	6.33	5.70	4.60	6.16	7.65	5.46	1.35	6.21	5.08	6.75	-	-	-	6.65

NOTES

1. All dimensions are in millimetres.
2. Measurement point for plating thickness = 4.0 ± 1.0.
3. ØF and ØG to be concentric within 0.10TIR.
4. Inspection hole shall only penetrate one wall of the solder barrel.

4. REQUIREMENTS

4.1 GENERAL

The complete requirements for procurement of the contacts specified herein shall be as stated in this specification and ESA/SCC 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 ESA/SCC 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

None.

4.2.2 Deviations from Final Production Tests (Chart II)

None.

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

Not applicable.

4.2.4 Deviations from Qualification Tests (Chart IV)

(a) Para. 9.31, Solderability: Not applicable for Variants 01 to 18.

4.2.5 Deviations from Lot Acceptance Tests (Chart V)

(a) Para. 9.31, Solderability: Not applicable for Variants 01 to 18.

4.3 MECHANICAL REQUIREMENTS

4.3.1 Dimension Check

The dimensions of the contacts specified herein shall be checked and conform to those shown in Figure 2.

4.3.2 Weight

The maximum weight of the contacts specified herein shall conform to the requirements of Table 1(a).

4.3.3 Contact Capability

For the purpose of this test, the pick-up and drop weights shall be as specified in Table 1(a).

4.3.4 Contact Retention (In Insert)

The contact retention within the insert shall be as specified in Table 1(a).

4.3.5 Mating and Unmating Forces

As specified in ESA/SCC Detail Specification Nos. 3401/007 and 3401/008.

4.3.6 Insert Retention (In Shell)

As specifed in ESA/SCC Detail Specification Nos. 3401/007 and 3401/008.

4.3.7 Jackscrew Retention

As specified in ESA/SCC Detail Specification Nos. 3401/007 and 3401/008.

4.3.8 Contact Insertion and Withdrawal Forces

The contact insertion and withdrawal forces shall be as specified in Table 1(a).

4.3.9 Engagement and Separation Forces

The diameter of the test pin and the contact engagement and separation force of the female contacts shall be as specified in Table 1(a).

4.3.10 Oversize Pin Exclusion

The diameter of the test pin and the force applied to it shall be as specified in Table 1(a).

4.3.11 Probe Damage

The probe diameter and the moment at the end of the probe shall be as specified in Table 1(a).

4.3.12 Solderability

Size A soldering iron shall be used. Only applicable to Variants 19 and 20.

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 contacts 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 Shell, Coupling Ring and Nut

As specified in ESA/SCC Detail Specification Nos. 3401/007 and 3401/008.

4.4.2 Inserts

As specified in ESA/SCC Detail Specification Nos. 3401/007 and 3401/008.

4.4.3 Contacts

4.4.3.1 Body

The contact body shall be made of copper base alloy selected from raw materials with a minimum of impurities. It shall be plated as follows:

- 2.5µm minimum gold plate in accordance with MIL-G-45204 Type II Grade C over 1.5µm minimum nickel plate over 4.0 to 5.1 µm copper plate in accordance with MIL-C-14550.

4.4.3.2 Sleeves

The sleeves of female contacts shall be made of Monel.

4.4.4 Contact Retaining Clip

As specified in ESA/SCC Detail Specification Nos. 3401/007 and 3401/008.

4.4.5 Guiding and Locking Devices

Not applicable.

4.4.6 Magnetism Level

As specified in ESA/SCC Detail Specification Nos. 3401/007 and 3401/008.

4.5 MARKING

4.5.1 General

The marking of all components delivered to this specification shall be in accordance with the requirements of ESA/SCC Basic Specification No. 21700 and the following paragraphs. These components being too small to accommodate the marking, the marking requirements in full shall accompany each lot of components in its primary package.

Such marking shall comprise:-

(a) The SCC Component Number.

(b) Traceability Information.

4.5.2 The SCC Component Number

The SCC Component Number shall be constituted and marked as follows:

340100902B

Detail Specification Number
Type Variant (see Table 1(a))
Testing Level

4.5.3 Traceability Information

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

4.6 ELECTRICAL MEASUREMENTS

4.6.1 Electrical Measurements at Room Temperature

The parameters to be measured in respect of electrical characteristics are listed in Table 2. Unless otherwise specified, the measurements shall be performed at $T_{amb} = +22 \pm 3$ °C.

4.6.2 Electrical Measurements at High and Low Temperatures (Table 3)

Not applicable.

4.6.3 Circuits for Electrical Measurements (Figure 4)

Not applicable.

4.7 SCREENING TESTS (TABLES 4 AND 5)

Not applicable.

TABLE 2 - ELECTRICAL MEASUREMENTS AT ROOM TEMPERATURE

No.	CHARACTERISTICS	SYMBOL	SPEC. AND/OR TEST METHOD	TEST CONDITIONS	VARIANTS	LIMITS		UNIT
						MIN.	MAX.	
1	Contact Resistance (Low Level Current)	Rcl	ESA/SCC No. 3401 Para. 9.1.1.3	Para. 9.1.1.3	All	-	9.0	mΩ
2	Contact Resistance (Rated Current)	Rcr	ESA/SCC No. 3401 Para. 9.1.1.3	Para. 9.1.1.3	Variants 01 - 06 Variants 07 - 14 Variants 15 - 20	- - -	8.0 6.0 1.0	mΩ

TABLES 3, 4 AND 5

Not applicable.

4.8 ENVIRONMENTAL AND ENDURANCE TESTS (CHARTS IV AND V OF ESA/SCC GENERIC SPECIFICATION No. 3401)

4.8.1 Measurements and Inspections on Completion of Environmental Tests

The parameters to be measured and inspections to be performed on completion of environmental testing are scheduled in Table 6. Unless otherwise specified, the measurements shall be performed at $T_{amb} = +22 \pm 3$ °C.

4.8.2 Measurements and Inspections at Intermediate Points during Endurance Tests

Not applicable.

4.8.3 Measurements and Inspections on Completion of Endurance Tests

The parameters to be measured and inspections to be performed on completion of endurance tests shall be those specified in Table 6. Unless otherwise specified, the measurements shall be performed at $T_{amb} = +22 \pm 3$ °C.

4.8.4 Conditions for Operating Life Tests (Part of Endurance Testing)

Not applicable.

4.8.5 Electrical Circuits for Operating Life Tests

Not applicable.

4.8.6 Conditions for High Temperature Storage Test (Part of Endurance Testing)

Not applicable.

TABLE 6 - MEASUREMENTS AND INSPECTIONS ON COMPLETION OF ENVIRONMENTAL AND ENDURANCE TESTING

NO.	ESA/SCC GENERIC NO. 3401		MEASUREMENTS AND INSPECTIONS		SYMBOL	LIMITS		UNIT
	ENVIRONMENTAL AND ENDURANCE TESTS (1)	TEST METHOD AND CONDITIONS	IDENTIFICATION	CONDITIONS		MIN	MAX	
01	Seal Test	Para. 9.9	ESA/SCC 3401/007 or 3401/008					
02	Wiring	Para. 9.10 & Table 1(a) of this spec	Low Level Contact Resistance	Table 2 Item 1	Rcl	Table 2 Item 1		
03	Vibration	Para. 9.11	ESA/SCC 3401/007 or 3401/008					
04	Shock or Bump	Para. 9.12	ESA/SCC 3401/007 or 3401/008					
05	Climatic Sequence	Para. 9 13	ESA/SCC 3401/007 or 3401/008					
06	Plating Thickness	Para. 9.14	Thickness	-	-	Para. 4.4.3 of this spec		
07	Joint Strength	Para. 9.15	ESA/SCC 3401 Para 9.15					
08	Rapid Change of Temperature	Para. 9.16	ESA/SCC 3401/007 or 3401/008					
09	Contact Retention (In Insert)	Para. 9.17 & Para. 4.3.4 of this spec	Contact Displacement		-	ESA/SCC 3401 Para. 9.17		
10	Endurance	Para. 9.18	**Initial Measurements** Low Level Contact Resist **Final Measurements** Low Level Contact Resistance Drift	 Table 2 Item 1 Table 2 Item 1	 Rcl ΔRcl	 Record Values -	 3.0	 mΩ
11	Permanence of Marking	Para. 9.19	As applicable					
12	Mating/Unmating Forces	Para. 9.20	ESA/SCC 3401/007 or 3401/008					
13	High Temperature Storage	Para. 9 21	**Initial Measurements** Low Level Contact Resist **Final Measurements** Low Level Contact Resistance Drift Rated Current Contact Resistance Contact Retention (In Insert)	 Table 2 Item 1 Table 2 Item 1 Table 2 Item 2 Para. 4.3.4 of this spec.	 Rcl ΔRcl Rcr -	 Record Values - Table 2 Item 2 ESA/SCC 3401 Para. 9.17	 3.0	 mΩ
14	Corrosion	Para. 9.22	Visual Examination	-	-	-	-	

NOTES

1. The tests in this table refer to either Chart IV or V and shall be used as applicable.

TABLE 6 - MEASUREMENTS AND INSPECTIONS ON COMPLETION OF ENVIRONMENTAL AND ENDURANCE TESTING (CONT'D)

NO.	ESA/SCC GENERIC NO. 3401		MEASUREMENTS AND INSPECTIONS		SYMBOL	LIMITS		UNIT
	ENVIRONMENTAL AND ENDURANCE TESTS (1)	TEST METHOD AND CONDITIONS	IDENTIFICATION	CONDITIONS		MIN	MAX	
15	Insert Retention (In Shell)	Para. 9.23 & Para. 4.3.6 of this spec	ESA/SCC 3401/007 or 3401/008					
16	Jackscrew Retention	Para. 9.24 & Para. 4.3.7 of this spec	ESA/SCC 3401/007 or 3401/008					
17	High Temperature Measurements	Para. 9.25	ESA/SCC 3401/007 or 3401/008					
18	Overload Test	Para. 9.26	Rated Current Contact Resistance	Table 2 Item 2	Rcr	Table 2 Item 2		
19	Maintenance Aging	Para. 9.27	Visual Examination Contact Retention Contact Insertion & Withdrawal Forces	- Para. 4.3.4 of this spec. Para. 4.3.8 of this spec.	- - -	- ESA/SCC 3401 Para. 9.17 Para. 4.3.8	-	
20	Engage/Separation Forces	Para. 9.28 & Para. 4.3.9 of this spec	Force		F	Para. 4.3.9		
21	Oversize Pin Exclusion	Para. 9.29 & Para. 4.3.10 of this spec			-	ESA/SCC 3401 Para. 9.29		
22	Probe Damage	Para. 9.30 & Para 4.3.11 of this spec	Contact Separation Force	Para. 4.3.9 of this spec.	F	Para. 4.3.9		
23	Solderability	Para. 9.31 and Paras. 4.2.4 and 4.2.5 of this spec		Para. 4.3.12 of this spec.		ESA/SCC 3401 Para. 9.31		

NOTES

1. The tests in this table refer to either Chart IV or V and shall be used as applicable.