RESISTORS, FIXED, FILM

NON-HERMETICALLY SEALED

BASED ON TYPE RS92N (RNC 90)

ESCC Detail Specification No. 4001/011

ISSUE 1

October 2002

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space components
coordination group

Issue/Rev.	Date	Approved by	
		SCCG Chairman	ESA Director General or his Deputy
Issue 4	June 1996		

DOCUMENTATION CHANGE NOTICE

Rev. Letter	Rev. Date	Reference	CHANGE Item	Approved DCR No.
		This Issue supersedes Issue 3 and incorporates the changes agreed in the following DCR's:-		
		Cover Page		None
		DCN		None
		Para. 3	: Text extended	23810
		Table 1(a)	: Table format amended	221345
			: Resistance Ranges amended	221345
			: Temperature Coefficient amended	221345
		Table 1(b)	: Min./Max. columns deleted	221345
			: No. 1, in Remarks, "Note 1" added and Remarks deleted	221345
			: Nos. 2 and 3 renumbered as "5" and "4" respectively and subsequent items renumbered	221345
			: Old No. 5, in Remarks, Note "1" amended to "2"	221345
			: Old No. 6, in Remarks, Note "2" amended to "3"	221345
			: New Note 1 added	221345
			: Old Notes 1 and 2 renumbered as "2" and "3" respectively	221345
		Figure 2	: Dimension "K min" deleted	221293
		Para. 4.2.2	: First sentence rewritten	221345
		Para. 4.2.4	: Deviation (a) amended	221345
			: Existing Deviation (b) renumbered as "(d)"	221345
			: New Deviations (b) and (c) added	221345
		Para. 4.2.5	: New Deviation (a) added	221345
			: Existing Deviation (a) renumbered as "(b)"	221345
		Para. 4.3.3	: Test details added	23810
		Para. 4.4.2	: Title amended	21025
		Para. 4.5.1	: Rewritten	23810
		Para. 4.5.3.1	: Table and Notes amended	221345
		Para. 4.7.3	: Title and text amended	23810
		Table 3	: Tests renumbered	221345
		Table 5	: Reformatted	221345
		Paras 4.8 to 4.8.3	: Rewritten	23810
		Table 6	: Rewritten and expanded	221345

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APPENDICES (Applicable to specific Manufacturers only)
None.

1. GENERAL

1.1 SCOPE

This specification details the ratings, physical and electrical characteristics, test and inspection data for Resistors, Fixed, Film, Non-hermetically Sealed, based on Type RS92N (RNC 90). It shall be read in conjunction with ESA/SCC Generic Specification No. 4001, the requirements of which are supplemented herein.

1.2 RANGE OF COMPONENTS

The range of resistors and type variants 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 resistors specified herein, are as scheduled in Table 1(b).

1.4 PARAMETER DERATING INFORMATION

The parameter derating information applicable to the resistors specified herein is given in Figure 1.

1.5 PHYSICAL DIMENSIONS

The physical dimensions of the resistors specified herein, are shown in Figure 2.

1.6 FUNCTIONAL DIAGRAM

The functional diagram for the resistors specified herein, is shown in Figure 3.

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. 4001, Resistors, Fixed, Film.

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. In addition, the following symbols are used:-

V_T = Test Voltage.
TC = Temperature Coefficient.

TABLE 1(a) - RANGE OF COMPONENTS

(1) No.	Resistance Range (2) (Notes 1 and 2)		(3) Tolerance (±%)	(4) Value Series	(5) Temperature Coefficient (10^{-6}/°C) (Applicable to all Tolerances)
	MIN. (Ω)	MAX. (kΩ)			
01	1.0	150	0.005	E192	1.0Ω ≤ R < 5.0Ω : ±20 (T ≤ +125°C)
02	1.0	150	0.01	E192	: ±25(+125°C < T ≤ +175°C)
03	1.0	150	0.02	E192	5.0Ω ≤ R < 10Ω : ±15 (T ≤ +125°C)
04	1.0	150	0.05	E192	: ±20(+125°C < T ≤ +175°C)
05	1.0	150	0.1	E192	10Ω ≤ R < 20Ω : ±10 (T ≤ +125°C)
06	1.0	150	0.2	E192	: ±15(+125°C < T ≤ +175°C)
07	1.0	150	0.5	E192	20Ω ≤ R < 33Ω : ±7.5 (T ≤ +125°C)
08	1.0	150	1.0	E192	: ±12.5(+125°C < T ≤ +175°C)
					33Ω ≤ R : ±5.0 (T ≤ +125°C)
					: ±10(+125°C < T ≤ +175°C)

NOTES

1. Critical resistance = 180kohm.
2. For Type Variants, see Figure 2.

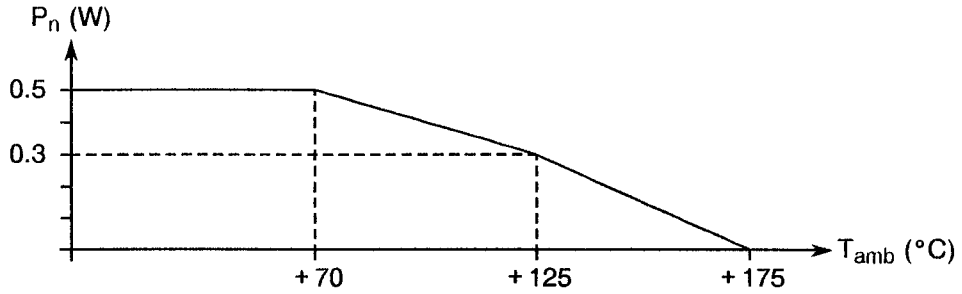
TABLE 1(b) - MAXIMUM RATINGS

No.	Characteristics	Symbol	Limits	Unit	Remarks
1	Rated Dissipation	P_n	0.5	W	Note 1
2	Rated Voltage	U_R	$\sqrt{0.5\ R_n}$	V	Note 2
3	Limiting Element Voltage	U_L	300	V	-
4	Operating Temperature Range	T_{op}	−55 to +175	°C	T_{amb}
5	Storage Temperature Range	T_{stg}	−65 to +175	°C	-
6	Soldering Temperature	T_{sol}	+260	°C	Note 3

NOTES

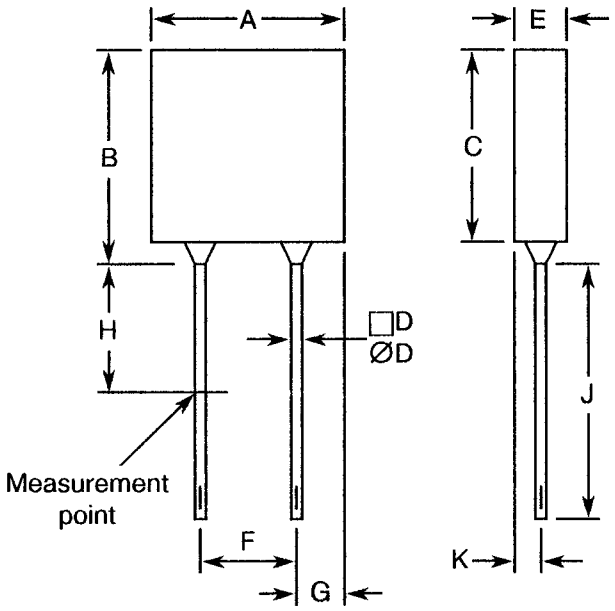
1. At $T_{amb} \leq +70°C$. For derating at $T_{amb} > +70°C$, see Figure 1.
2. Shall never exceed Limiting Element Voltage.
3. Duration 10 seconds maximum at a distance of not less than 1.6mm from the device body

FIGURE 1 - PARAMETER DERATING INFORMATION



Rated Dissipation versus Temperature

FIGURE 2 - PHYSICAL DIMENSIONS

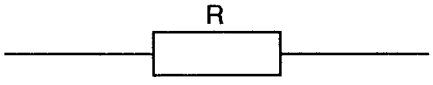


Symbol	Millimetres		Notes
	Min.	Max.	
A	-	7.50	
B	-	8.00	
C	-	7.50	
□D	0.50 × 0.25 ± 10%		Variants 01, 02, 05, 06
ØD	0.55	0.65	Variants 03, 04, 07, 08
E	-	2.50	
F	4.80	5.35	Variants 01, 03, 05, 07
	3.55	4.10	Variants 02, 04, 06, 08
G	1.00	1.50	Variants 01, 03, 05, 07
	1.60	2.10	Variants 02, 04, 06, 08
H	4.00	6.00	
J	6.00	-	Variants 01, 02, 03, 04
	20.00	-	Variants 05, 06, 07, 08
K	-	1.50	

NOTES

1. Slight variations in the shape of the package are allowed provided they remain within the dimensions of A, B and E.

FIGURE 3 - FUNCTIONAL DIAGRAM



4. REQUIREMENTS

4.1 GENERAL

The complete requirements for procurement of the resistors specified herein shall be as stated in this specification and ESA/SCC Generic Specification No. 4001. 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)

(a) Para. 9.1, Overload: The test conditions shall be:-

Voltage: $\sqrt{2.0\ R_n}$ or 450V, whichever is less.
Duration: 5 seconds.

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

(a) For 0.005 and 0.01% tolerances, components with a resistance outside the limits of Table 2, but meeting the drift requirements of Table 4, shall be rejected, but not counted for PDA.

4.2.4 Deviations from Qualification Tests (Chart IV)

(a) For 0.005 and 0.01% tolerances, components with a resistance outside the limits of Table 2, but meeting the drift requirements of Table 4, shall be rejected, but not counted as failures.

(b) Para. 9.1, Overload: Test conditions as Para. 4.2.2(a).

(c) Para. 9.8, Voltage Proof: To be performed using the Limit specified in Table 2, Item 3 of this specification.

(d) Para. 9.13: Vibration shall be performed along the 3 mutually perpendicular axes.

4.2.5 Deviations from Lot Acceptance Tests (Chart V)

(a) Para. 9.8, Voltage Proof: To be performed using the Limit specified in Table 2, Item 3 of this specification.

(b) Para. 9.13: Vibration shall be performed along the 3 mutually perpendicular axes.

4.3 MECHANICAL REQUIREMENTS

4.3.1 Dimension Check

The dimensions of the resistors specified herein shall be verified in accordance with the requirements set out in Para. 9.4 of ESA/SCC Generic Specification No. 4001 and shall conform to those shown in Figure 2 of this specification.

4.3.2 Weight

The maximum weight of the resistors specified herein shall be 1.0 grammes.

4.3.3 Robustness of Terminations

The requirements and test conditions for robustness of terminations are specified in Section 9 of ESA/SCC Generic Specification No. 4001. The test conditions shall be as follows:-

Test U_{a1}: Tensile.

Applied Force: 10 N.
Duration: 5 to 10 seconds.

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 Case

As a minimum, a thermo-setting resin moulding shall ensure the protection of the resistors.

4.4.2 Lead Material and Finish

The lead material shall be Type 'A' with Type '3 or 4' finish in accordance with the requirements of ESA/SCC Basic Specification No. 23500.

4.4.3 Films

Films shall be uniform and free from blisters, thin spots, areas inadequately bonded to the substrate, discoloured spots or other blemishes likely to cause flaking or non-uniform ribbons.

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. 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 SCC Component Number.

(b) Electrical Characteristics and Ratings.

(c) Traceability Information.

4.5.2 The SCC Component Number

Each component shall bear the SCC Component Number which shall be constituted and marked as follows:

400101101B

Detail Specification Number

Type Variant, as applicable (see Figure 2)

Testing Level (B or C, as applicable)

4.5.3 Electrical Characteristics and Ratings

The electrical characteristics and ratings to be marked in the following order of precedence are:-

(a) Numerical Value.

(b) Tolerance.

The information shall be constituted and marked as follows:

24R9B

Value (24.9 Ohms)

Tolerance (±0.1%)

4.5.3.1 Numerical Values

Numerical values shall be expressed in clear or by means of the following codes:-

The unit quantity for marking shall be in Ohms.

Numerical Value	Code
X.XX	XRXX
XX.X	XXRX
XXX	XXX0
XXX10^1	XXX1
XXX10^2	XXX2
XXX10^3	XXX3

For values of 100 and above, the first 3 digits (X) represent significant figures and the last digit specifies the number of zeros to follow.

When values of less than 100 are required, the letter 'R' is used to indicate the decimal point. When the letter is used, all successive digits represent significant figures.

4.5.3.2 Tolerance

The tolerance on numerical values shall be indicated in clear or by the code letters specified hereafter:-

Tolerance (±%)	Code Letter
0.005	E
0.01	L
0.02	P
0.05	W
0.1	B
0.2	C
0.5	D
1.0	F

4.5.4 Traceability Information

Each component shall be marked in respect of traceability information 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 at room temperature are scheduled in Table 2. The measurements shall be performed at $T_{amb} = +22 \pm 3$ °C.

4.6.2 Electrical Measurements at High and Low Temperatures

The parameters to be measured on a sample basis at high and low temperatures are scheduled in Table 3. AQL shall be 0.65% out of the total production lot (Inspection Level II).

The distribution of the sample shall be as follows:

- 1/3 with the lowest resistance value,
- 1/3 with the highest resistance value,
- 1/3 with the median resistance value or the critical resistance value if procured,

of the procured range.

4.6.3 Circuits for Electrical Measurements (Figure 4)

Not applicable.

4.7 BURN-IN TESTS

4.7.1 Parameter Drift Values

The parameter drift values applicable to burn-in are specified in Table 4 of this specification. Unless otherwise stated, measurements shall be performed at $T_{amb} = +22 \pm 3$ °C. The parameter drift values (Δ) applicable to the parameters scheduled, shall not be exceeded. In addition to these drift value requirements, the appropriate limit value specified in Table 2 for a given parameter shall not be exceeded.

4.7.2 Conditions for Burn-in

The requirements for burn-in are specified in Section 7 of ESA/SCC Generic Specification No. 4001. The conditions for burn-in shall be as specified in Table 5 of this specification.

The resistors shall be tested with a d.c. voltage or a full-wave rectified a.c. voltage, provided the ripple does not exceed 5.0%.

A voltage of 300V or $\sqrt{0.5\ R_n}$, whichever is smaller, shall be applied in cycles of 90 minutes "on" and 30 minutes "off" throughout the test.

The resistors shall be connected by their terminations to suitable clips on a rack of insulating material. They shall be so arranged that the temperature of any one resistor does not appreciably influence the temperature of any other resistor. There shall be no undue draught over the resistors. After 168(+ 24 − 0) hours, the resistors shall be removed from the chamber and allowed to cool under normal atmospheric conditions for a minimum of 4 hours. They shall then be visually examined. There shall be no evidence of damage and the marking shall still be legible.

4.7.3 Electrical Circuit for Burn-in

The circuit for use in performing the burn-in test is shown in Figure 5 of this specification.

TABLE 2 - ELECTRICAL MEASUREMENTS AT ROOM TEMPERATURE

No.	Characteristics	Symbol	Spec. and/or Test Method	Test Conditions	Tolerance (±%)	Limits		Unit
						Min.	Max.	
1	Resistance	R_A	ESA/SCC Gen. Spec. No. 4001	Para. 9.5.1	0.005	0.99995 R_n	1.00005 R_n	Ω
					0.01	0.9999 R_n	1.0001 R_n	
					0.02	0.9998 R_n	1.0002 R_n	
					0.05	0.9995 R_n	1.0005 R_n	
					0.1	0.999 R_n	1.001 R_n	
					0.2	0.998 R_n	1.002 R_n	
					0.5	0.995 R_n	1.005 R_n	
					1.0	0.990 R_n	1.010 R_n	
2	Insulation	R_i	ESA/SCC Gen. Spec. No. 4001	Para. 9.6 V_T = 100V Note 1	All	1 000	-	MΩ
3	Voltage Proof	U_T	ESA/SCC Gen. Spec. No. 4001	Para. 9.8 for atm. pressure	All	425	-	Vrms

NOTES
1. Measurements on a sample basis, sample size as specified in Para. 4.6.2.

TABLE 3 - ELECTRICAL MEASUREMENTS AT HIGH AND LOW TEMPERATURES

No.	Characteristics	Symbol	Spec. and/or Test Method	Test Conditions (Note 1)	Limits		Unit
					Min.	Max.	
1(i)	Resistance Change between −55(+3−0)°C and +22±3°C	$\frac{\Delta R}{R}$	ESA/SCC Gen. Spec. No. 4001	Para. 9.5.1	−0.04	+0.04	%
1(ii)	Resistance Change between +175(+0−3)°C and +22±3°C	$\frac{\Delta R}{R}$	ESA/SCC Gen. Spec. No. 4001	Para. 9.5.1	−0.1	+0.1	%

NOTES
1. Sampling Level II, AQL = 0.65%.

FIGURE 4 - CIRCUITS FOR ELECTRICAL MEASUREMENTS

Not applicable.

TABLE 4 - PARAMETER DRIFT VALUES

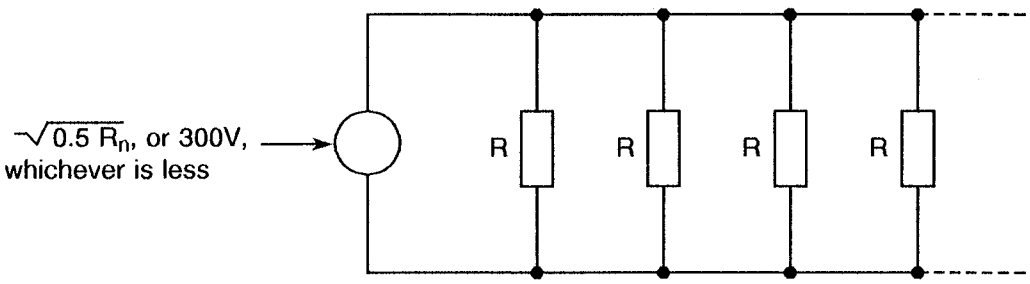
No.	Characteristics	Symbol	Spec. and/or Test Method	Test Conditions	Change Limits (Δ)	Unit
1	Resistance Change	$\frac{\Delta R}{R}$	As per Table 2	As per Table 2	± 0.01 (1) (3) ± 0.015 (2) (3)	%

NOTES
1. For 0.005% tolerance.
2. For other tolerances.
3. Or 0.01Ω, whichever is greater.

TABLE 5 - CONDITIONS FOR BURN-IN AND OPERATING LIFE TESTS

No.	Characteristics	Symbol	Condition	Unit
1	Ambient Temperature	T_{amb}	+ 70 ± 3	°C
2	Test Voltage	V_T	$\sqrt{0.5\ R_n}$, or 300V, whichever is less	V

FIGURE 5 - ELECTRICAL CIRCUIT FOR BURN-IN AND OPERATING LIFE TESTS



4.8 ENVIRONMENTAL AND ENDURANCE TESTS (CHARTS IV AND V OF ESA/SCC GENERIC SPECIFICATION No. 4001)

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 tests are scheduled in Table 6. Unless otherwise stated, the measurements shall be performed at $T_{amb} = +22 \pm 3$ °C.

4.8.2 Measurements and Inspections at Intermediate Points during Endurance Tests

The parameters to be measured and inspections to be performed at intermediate points during endurance tests are as scheduled in Table 6 of this specification. Unless otherwise stated, the measurements shall be performed at $T_{amb} = +22 \pm 3$ °C.

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 testing are as scheduled in Table 6 of this specification. Unless otherwise stated, the measurements shall be performed at $T_{amb} = +22 \pm 3$ °C.

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

The requirements for operating life testing are specified in Section 9 of ESA/SCC Generic Specification No. 4001. The conditions for operating life testing shall be as specified in Table 5 and Para. 4.7.2 of this specification.

4.8.5 Electrical Circuits for Operating Life Tests

Circuits for use in performing the operating life tests are shown in Figure 5 of this specification.

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

The requirements for the high temperature storage test are specified in ESA/SCC Generic Specification No. 4001. The conditions for high temperature storage shall be $T_{amb} = +175(+0\text{-}5)$ °C.

TABLE 6 - MEASUREMENTS AND INSPECTIONS ON COMPLETION OF ENVIRONMENTAL TESTS AND AT INTERMEDIATE POINTS AND ON COMPLETION OF ENDURANCE TESTING

NO.	ESA/SCC GENERIC SPEC. NO. 4001		MEASUREMENTS AND INSPECTIONS		SYMBOL	LIMITS		UNIT
	ENVIRONMENTAL AND ENDURANCE TESTS (1)	TEST METHOD AND CONDITIONS	IDENTIFICATION	CONDITIONS		MIN.	MAX.	
01	Overload	Para. 9.1 and Paras 4.2.2 and 4.2.4 of this spec.	**Initial Measurements** Chart IV Resistance **Final Measurements** Visual Examination Chart II Resistance Chart IV Resistance Change	 Table 2 Item 1 After a recovery period of 1-2 hrs No evidence of damage and marking legible Table 2 Item 1 Table 2 Item 1	 R_A - R_A $\Delta R_A/R_A$	 Record Values - Table 2 Item 1 $\pm(0.05+\frac{0.01\Omega\times100}{R_n})$	 - 	 - %
02	Seal Test (Hermetically Sealed only)	Para. 9.3	Not applicable					
03	Insulation Resistance (Insulated only)	Para. 9.6	**Final Measurements** Insulation Resistance	 Para. 9.6.1 of ESA/SCC 4001 (2)	 Ri	 1000	 -	 MΩ
04	Temperature Coefficient	Para. 9.7 Procedure I	Temperature Coefficient	Para. 9.5.1 of ESA/SCC 4001	TC	Note 3		10^{-6}/°C
05	Voltage Proof	Para. 9.8 and Para's 4.2.4 and 4.2.5 of this spec.	**During Test** Visual Examination	Table 2 Item 3 for 60 ± 5 sec No breakdown or flashover	 -	 -	 -	 -
06	Solderability	Para. 9.9 Procedure I	**Initial Measurements** Resistance **Final Measurements** Resistance Change	After Drying Table 2 Item 1 24 ± 4 hrs after soldering Table 2 Item 1	 R_A $\Delta R_A/R_A$	 Record Values $\pm(0.02+\frac{0.01\Omega\times100}{R_n})$	 	 %
07	Robustness of Terminations	Para. 9.10.1	**Initial Measurements** Resistance **Final Measurements** Resistance Change Visual Examination	 Table 2 Item 1 Table 2 Item 1 No evidence of damage	 R_A $\Delta R_A/R_A$ -	 Record Values $\pm(0.02+\frac{0.01\Omega\times100}{R_n})$ -	 -	 % -
08	Resistance to Soldering Heat	Para. 9.11 Procedure I	**Initial Measurements** Resistance **Final Measurements** Visual Examination Resistance Change	After Drying Table 2 Item 1 No evidence of damage and marking legible After 24 ± 4 hours Table 2 Item 1	 R_A - $\Delta R_A/R_A$	 Record Values - $\pm(0.02+\frac{0.01\Omega\times100}{R_n})$	 	 Ω - %
09	Rapid Change of Temperature	Para. 9.12	**Initial Measurements** Resistance **Final Measurements** Visual Examination Resistance Change	Table 2 Item 1 After a recovery period of 1-2 hrs No evidence of damage Table 2 Item 1	R_A - $\Delta R_A/R_A$	Record Values - $\pm(0.05+\frac{0.01\Omega\times100}{R_n})$	 - 	 - %

NOTES

1. The tests in this Table refer to either Chart IV or V and shall be used as applicable.
2. Test Voltage: $V_T = 100V$.
3. See Column 5 of Table 1(a).

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

NO.	ESA/SCC GENERIC SPEC. NO. 4001		MEASUREMENTS AND INSPECTIONS		SYMBOL	LIMITS		UNIT
	ENVIRONMENTAL AND ENDURANCE TESTS (1)	TEST METHOD AND CONDITIONS	IDENTIFICATION	CONDITIONS		MIN.	MAX.	
10	Vibration	Para. 9.13 and Para's 4.2.4 and 4.2.5 of this spec.	**Initial Measurements**					
			Resistance	Table 2 Item 1	R_A	Record Values		
			Final Measurements					
			Visual Examination	No evidence of damage	-	-	-	-
			Resistance Change	Table 2 Item 1	$\Delta R_A/R_A$	$\pm (0.02 + \frac{0.01\Omega \times 100}{R_n})$		%
11	Climatic Sequence	Para. 9.14 Procedure I	**Initial Measurements**	After Drying				
			Resistance	Table 2 Item 1	R_A	Record Values		
			Final Measurements	Following completion of D.C. load test and after a recovery period of 1-2 hrs				
			Visual Examination	No evidence of damage and marking legible	-	-	-	-
			Insulation Resistance	Para. 9.6.1 of ESA/SCC 4001 (2)	Ri	100	-	MΩ
			Resistance Change	Table 2 Item 1	$\Delta R_A/R_A$	$\pm (0.05 + \frac{0.01\Omega \times 100}{R_n})$		%
12	Operating Life	Para. 9.15 Chart IV	**Initial Measurements**					
			Resistance	Table 2 Item 1	R_A	Record Values		
			Intermediate Measurements (1000 hrs)	After a recovery period of 1-2 hrs				
			Visual Examination	No evidence of damage	-	-	-	-
			Resistance Change	Table 2 Item 1	$\Delta R_A/R_A$	$\pm (0.05 + \frac{0.01\Omega \times 100}{R_n})$		%
			Final Measurements (2000 hrs)	After a recovery period of 1-2 hrs				
			Visual Examination	No evidence of damage	-	-	-	-
			Resistance Change	Table 2 Item 1	$\Delta R_A/R_A$	$\pm (0.05 + \frac{0.01\Omega \times 100}{R_n})$		%
			Insulation Resistance	Para. 9.6.1 of ESA/SCC 4001 (2)	Ri	1000	-	MΩ
		Para. 9.15 Chart V	**Initial Measurements**					
			Resistance	Table 2 Item 1	R_A	Record Values		
			Final Measurements (1000 hrs)	After a recovery period of 1-2 hrs				
			Visual Examination	No evidence of damage	-	-	-	-
			Resistance Change	Table 2 Item 1	$\Delta R_A/R_A$	$\pm (0.05 + \frac{0.01\Omega \times 100}{R_n})$		%
			Insulation Resistance	Para. 9.6.1 of ESA/SCC 4001 (2)	Ri	1000	-	MΩ

NOTES: See Page 16.

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

NO.	ESA/SCC GENERIC SPEC. NO. 4001		MEASUREMENTS AND INSPECTIONS		SYMBOL	LIMITS		UNIT
	ENVIRONMENTAL AND ENDURANCE TESTS (1)	TEST METHOD AND CONDITIONS	IDENTIFICATION	CONDITIONS		MIN.	MAX.	
13	High Temperature Storage	Para. 9.16	**Initial Measurements** Resistance **Intermediate Measurements** (1000 hrs) Visual Examination Resistance Change **Final Measurements** (2000 hrs) Visual Examination Resistance Change Insulation Resistance	Table 2 Item 1 After a recovery period of 1-2 hrs No evidence of damage Table 2 Item 1 After a recovery period of 1-2 hrs No evidence of damage Table 2 Item 1 Para. 9.6.1 of ESA/SCC 4001 (2)	R_A - $\Delta R_A/R_A$ - $\Delta R_A/R_A$ Ri	Record Values - $\pm (0.05 + \frac{0.01\Omega \times 100}{R_n})$ - $\pm (0.05 + \frac{0.01\Omega \times 100}{R_n})$ 1000	- - - - -	- % - % MΩ
14	Permanence of Marking	Para. 9.19	-	-	-	-	-	-

NOTES: See Page 16.