MARK-UP for DCR312
(also DCR333 & DCR337)
plus extra changes from
DCR181
plus additional changes 09/7/7
agreed with Betatherm.

ESCC
European Space Components Coordination

THERMISTORS

(THERMALLY SENSITIVE RESISTORS), NTC,

RANGE 2000 TO ~~100000~~ 15000 OHMS AT +25 °C WITH

A TEMPERATURE RANGE OF -60 to +160 °C

ESCC Detail Specification No. 4006/014

BASED ON TYPE ~~G15K4D489~~, G15K4D489
G10K4D453, G2K7D411, G4K7D421

ISSUE ~~4~~ 5 (Draft B)

~~July 2005~~
July 2007

esa

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DOCUMENTATION CHANGE NOTICE

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DCR No.	CHANGE DESCRIPTION
~~181~~ 312, 333, 337	Specification upissued to incorporate editorial and technical changes per DCR.

TABLE OF CONTENTS

1. GENERAL

1.1 SCOPE

This specification details the ratings, physical and electrical characteristics, test and inspection data for Thermistors, Thermally Sensitive Resistors. NTC, Range ~~2 000~~ 2000 to ~~100 000~~ 15000 Ohms at +25°C with a Temperature Range of -60 to +160 °C. It shall be read in conjunction with ESCC Generic Specification No. 4006, the requirements of which are supplemented herein.

1.2 COMPONENT TYPE VARIANTS

(based on type [illegible], G1SK4D489, G1OK4D453, G2K7D411, G4K7D421.

Variants of the basic type thermistors specified herein, which are also 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 thermistors specified herein, are as scheduled in Table 1(b).

1.4 PARAMETER DERATING INFORMATION (FIGURE 1)

Not applicable.

1.5 PHYSICAL DIMENSIONS

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

1.6 FUNCTIONAL DIAGRAM

The functional diagram for the thermistors 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) ESCC Generic Specification No. 4006, Thermistors (Resistors, Thermally Sensitive).

(b) IEC 60410, Sampling Procedures and Tables for Inspection by Attributes.

(c) MIL-STD-202, Test Methods for Electronic and Electrical Component Parts.

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. In addition, the following symbols are used:-

NTC =Negative Temperature Coefficient.
R_Z =Zero Power Resistance.

TABLE 1(a) - TYPE VARIANTS

(1) VARIANT	(2) BASED ON TYPE	(3) R_Z (Note 1)	(4) RESISTANCE/TEMPERATURE CHARACTERISTICS (Note 2)										
			-60°C	-40°C	-20°C	0°C	+25°C	+50°C	+70°C	+100°C	+125°C	+140°C	+160°C
01	G2K7D110	NOM. (Ω)	-	43362	14658	5650	2000.0	815.0	432.0	187.40	102.00	-	-
		TOL. (±%)	-	2.90	2.54	1.57	1.34	1.17	1.05	0.90	1.13	-	-
02	G4K7D108	NOM. (Ω)	-	-	29316	11300	4000	1630.0	864.0	374.80	204.00	-	-
		TOL. (±%)	-	-	2.54	1.57	1.34	1.17	1.05	0.90	1.13	-	-
03	G4K7D114	NOM. (Ω)	-	86724	29316	11300	4000	1630.0	864.0	-	-	-	-
		TOL. (±%)	-	2.90	2.54	1.57	1.34	1.17	1.05	-	-	-	-
04	G15K4D112	NOM. (Ω)	-	-	-	44235	15000	5840	2985.0	1226.0	639.0	447.00	287.70
		TOL. (±%)	-	-	-	1.62	1.41	1.24	1.12	0.97	1.23	1.15	1.06
05	G100K6D116	NOM. (Ω)	-	-	-	-	100000	-	-	5574	2642.4	1756.3	1059.0
		TOL. (±%)	-	-	-	-	-	-	-	1.11	1.41	1.32	1.21
06	G15K4D393	NOM. (Ω)	1342000	371300	120100	44420	15000	5855	3009.0	1250.0	659.8	465.50	302.40
		TOL. (±%)	10.0%	6.3%	3.35	1.0%	1.01	1.03	1.05	1.01	1.02	1.02	1.0%
08	G15K4D489	NOM. (Ω)	1342000	371300	120100	44420	15000	5855	3009.0	1250.0	659.8	465.50	302.40
		TOL. (±%)	10.0%	6.3%	3.35	1.0%	1.01	1.03	1.05	1.01	2.0%	3.0%	4.0%

delete 01 to 06

R_Z

NOTES

1. For test purposes, when zero power is dissipated and the ambient temperature is held as specified, the value is referred to as R_Z (Zero Power Resistance).
2. The reference resistance is specified at +25°C.

Add new variants 09, 10, 11 * attached

DOCUMENT CHANGE REQUEST

CONTINUATION SHEET FOR BOX [ ]

Change request No.)

CHANGE:

Page 6 Table 1(a) Add variants 09, 10 and 11 to Table, giving resistance values and appropriate resistance tolerances at temperatures - 60; - 40; -20; 0; +25; +50; +70; +100; +125; degrees C. The insertion is as follows:

VARIANT	BASED ON TYPE	R_Z	RESISTANCE/TEMPERATURE CHARACTERISTICS (NOTE 3)									
			-60 °C	-40 °C	-20 °C	0 °C	+25°C	+50°C	+70°C	+100°C	+125°C	+140°C	+160°C
09	G10K4D453	NOM (Ω)	847284	239768	78930	29490	10000	3893	1990	817.2	426.0	---	---
		TOL (+%)	7	3	2.6	2	2	1.7	1.6	3	3.5	---	---
10	G2K7D411	NOM (Ω)	---	43362	14658	5650	2000.0	815.0	432.0	187.40	102.00	---	---
		TOL (+%)	---	2.9	2.54	1.57	1.34	1.17	1.05	0.9	1.13	---	---
11	G4K7D421	NOM (Ω)	---	86724	29316	11300	4000	1630.0	864.0	374.80	204.00	--	--
		TOL (+%)	---	2.9	2.54	1.57	1.34	1.17	1.05	0.9	1.13	---	--

R_Z

JUSTIFICATION:

New variant 09 has been developed from old customer specifications to meet demand and is a 10,000 ohm device. Construction is "similar" to the newly qualified variant 08; with the improved glass tubing, the 26 AWG wire and the assembly as described in the current PID Iss. 7. There are two changes, in the physical dimensions, from that of Variant 08 – dimensions A and C – which are documented in this DCR.

Variants 10 is electrically similar to variant 01. The differences are that construction is similar to the newly qualified variant 08; with the improved glass tubing, the 26 AWG wire and the assembly as described in the current PID Iss. 7.

Variant 11 is electrically similar over the combined temperature range of variants 02 and 03. The differences, from Variants 02 and 03, are that construction is similar to the newly qualified variant 08; with the improved glass tubing, the 26 AWG wire and the assembly as described in the current PID Iss. 7.

CHANGE:

Page 7 Table 1(b) Change Note 3 **from** " – 40 °C for Variants 01 to 05 and – 60 °C for Variant 06 and 08 to the Maximum Operating Temperature specified in Column 4 of Table 1(a)" **to** " – 40 °C for Variants 01, 02, 03, 04, 05 ,10 and 11 and – 60 °C for Variants 06, 08 and 09 to the Maximum Operating Temperature specified in Column 4 of Table 1(a)"

JUSTIFICATION:

Includes new Variants 09,10 and 11

CHANGE: Change Table of Figure 2 **from**

SYMBOL	MILLIMETRES			
	VARIANTS 01 - 05		VARIANT 06,08	
	MIN	MAX	MIN	MAX
A	280.00	330.00	356.00	406.00
B	6.10	6.60	6.10	6.60
C	-	2.80	-	2.40
D	-	9.80	-	9.80
E	0.33	0.48	0.33	0.48
F	-	50.00	-	50.00
G	50.00	80.00	50.00	80.00

TABLE 1(b) - MAXIMUM RATINGS

No.	CHARACTERISTICS	SYMBOL	MAXIMUM RATINGS	UNIT	REMARKS
1	Power Dissipation	P_D	240	mW	Note 1
2	Operating Temperature Range	T_{op}	Note 2	°C	
3	Storage Temperature Range	T_{stg}	Note 3	°C	
4	Soldering Temperature	T_{sol}	+245	°C	Note 4

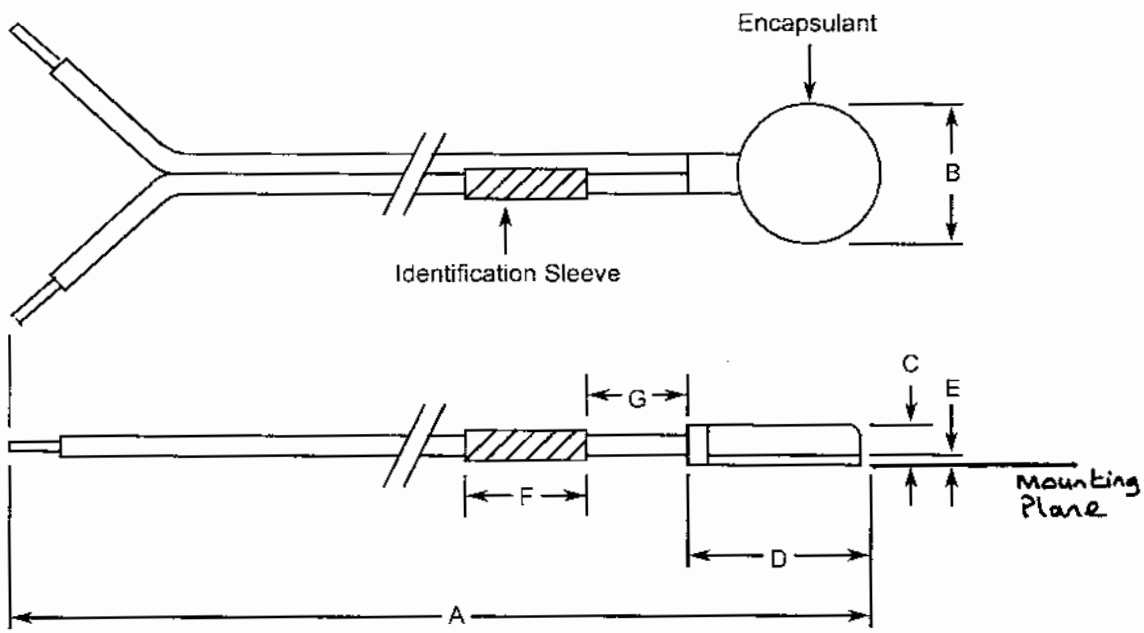
NOTES

1. Never to be exceeded in the temperature measurement mode. The thermistors specified herein shall not be used in the self-heat mode.
2. See Column 4 of Table 1(a).
3. -40°C for Variants ~~01 to 05~~ 10,11 and -60°C for Variants ~~06 and 09~~ 08,09 to the Maximum Operating Temperature specified in Column 4 of Table 1(a)
4. Duration 10 seconds maximum at a distance of not less than 10mm from the device body and the same lead shall not be resoldered until 3 minutes have elapsed.

FIGURE 1 - PARAMETER DERATING INFORMATION

Not applicable.

FIGURE 2 - PHYSICAL DIMENSIONS



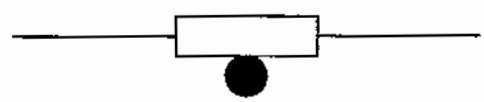
SYMBOL	MILLIMETRES					
	VARIANTS 10,11		VARIANT 08		VARIANT 09	
	MIN.	MAX.	MIN.	MAX.	MIN.	MAX
A	280	330	356	406	500	550
B	6.1	6.6	6.1	6.6	6.1	6.6
C	-	2.8	-	2.4	–	2.8
D	-	9.8	-	9.8	–	9.8
E	0.33	0.48	0.33	0.48	0.33	0.48
F	-	50	-	50	–	50
G	50	80	50	80	50	80

NOTES

1. The leads shall not be bent, or the means of fastening them cause bending in any direction from the place of the thermistor fastening disc within a distance of 15mm from the centre of the thermistor.

1. Within dimension D (housing/crimp) no part of the housing or leads shall protrude below the mounting plane by more than 0.13mm.

FIGURE 3 - FUNCTIONAL DIAGRAM



(DCR337)

4. REQUIREMENTS

4.1 GENERAL

The complete requirements for procurement of the thermistors specified herein are stated in this specification and ESCC Generic Specification No. 4006 for Thermistors (Resistors, Thermally Sensitive). 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

None.

4.2.2 Deviations from Final Production Tests (Chart II)

(a) Thermal Shock: Test Condition 'C' except that the maximum temperature shall be the maximum operating temperature specified in Column 4 of Table 1(a) of this Specification.

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

None.

4.2.4 Deviations from Qualification Tests (Chart IV)

(a) Thermal Shock: Test Condition 'C' except that the maximum temperature shall be the maximum operating temperature specified in Column 4 of Table 1(a) of this Specification.

(b) Para. 9.3.1.2, Dissipation Constant: Not applicable.

(c) Para. 9.15, Short Time Overload: Not applicable.

(d) Para. 9.17, High Temperature Storage: Not applicable.

4.2.5 Deviations from Lot Acceptance Tests (Chart V)

(a) Thermal Shock: Test Condition 'C' except that the maximum temperature shall be the maximum operating temperature specified in Column 4 of Table 1(a) of this Specification.

4.3 MECHANICAL REQUIREMENTS

4.3.1 Dimension Check

The dimensions of the thermistors specified herein shall be verified in accordance with the requirements set out in Para. 9.4 of ESCC Generic Specification No. 4006 and they shall conform to those shown in Figure 2 of this specification.

4.3.2 Weight

The maximum weight of the thermistors specified herein shall be 4[illegible] grammes, with the exception of Variant[illegible] 08, whose maximum weight shall be 2.3 grammes.

4.3.3 Terminal Strength

The requirements for terminal strength testing are specified in Para. 9.13 of ESCC Generic Specification No. 4006. The test conditions shall be as follows:-

Applied Force: 4.45 (+1.1 -0)N.
Duration: 5 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 thermistors 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

The housing shall be aluminium filled with a black epoxy encapsulant.

4.4.2 Lead Material and Finish

03

The lead material shall be in accordance with ESCC Detail Specification No. 3901/012 Variant ~~04 with the exception of Variants 06 and 08, which shall be in accordance with ESCC Detail Specification No. 3901/012 Variant 03~~. One lead shall carry an identification sleeve which shall carry all part marking specified in Para. 4.5.

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 the component in its primary package.

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

(a) The ESA Symbol, for qualified components only.

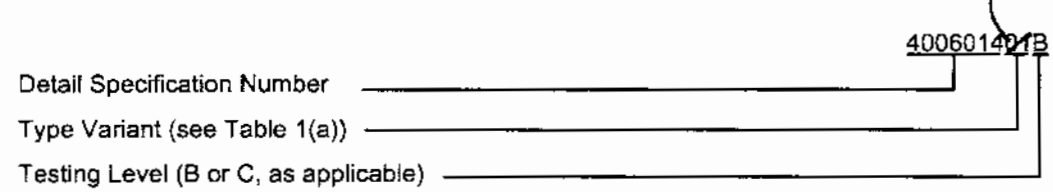
(b) The ESCC Component Number.

(c) Traceability Information.

4.5.2 The ESCC Component Number

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

08



4.5.3 Traceability Information

Each component shall be marked in respect of traceability information in accordance with the requirements of ESCC 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. Unless otherwise specified, the measurements shall be performed at T_{amb}=+25±0.01 °C.

4.6.2 Electrical Measurements at High and Low Temperatures

The parameters to be measured at high and low temperatures are scheduled in Table 3. The temperature tolerance shall be ±0.01 °C.

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}=+25±0.01°C. The parameter drift values (Δ) applicable to the parameters scheduled, shall not be exceeded. In addition to these drift value requirements for a given parameter, the appropriate limit value specified in Table 2 shall not be exceeded.

4.7.2 Conditions for Burn-in

The requirements for burn-in are specified in Section 7 of ESCC Generic Specification No. 4006. The conditions for burn-in shall be as specified in Table 5 of this specification.

4.7.3 Electrical Circuits for Burn-in (Figure 5)

Not applicable.

TABLE 2 - ELECTRICAL MEASUREMENTS AT ROOM TEMPERATURE - DC PARAMETERS

No.	CHARACTERISTICS	SYMBOL	ESCC 4006 TEST METHOD AND CONDITIONS	LIMITS		UNIT
				MIN.	MAX.	
1	Zero Power Resistance	R_Z	Para. 9.3.1.1	Note 1		Ω
2	Insulation Resistance	~~R_I~~ R_I	Para. 9.3.1.4 T_{amb}=+25 ±1°C Note 2	100	-	MΩ
3	Thermal Time Constant Variants ~~01-05~~ 09, 10, 11 Variant ~~06~~ 08	KH	Para. 9.3.1.3 T_{amb}=+25±1°C In Still Air Note 3	- -	40 25	sec.

NOTES

1. See Column 4 of Table 1(a) for resistance values.
2. If more than 20 devices have to be measured, the test shall be performed on a sample basis in accordance with Level II, Single Sampling Plan for Normal Inspection, AQL=1.0 of IEC 60410.
3. Test to be performed on 10 samples during Chart II only.

TABLE 3 - ELECTRICAL MEASUREMENTS AT HIGH AND LOW TEMPERATURES

No.	CHARACTERISTICS	SYMBOL	ESCC 4006 TEST METHOD AND CONDITIONS	LIMITS		UNIT
				MIN.	MAX.	
1	Zero Power Resistance	R_Z	Para. 9.3.1.1 At each specified temperature, over operating range	Note 1		Ω

NOTES

1. See Column 4 of Table 1(a) for resistance values.

FIGURE 4 - CIRCUITS FOR ELECTRICAL MEASUREMENTS

Not applicable.

TABLE 4 - PARAMETER DRIFT VALUES

No.	CHARACTERISTICS	SYMBOL	METHODS AND TEST CONDITIONS	CHANGE LIMITS (Δ)	UNIT
1	Zero Power Resistance Change	$\frac{\Delta R_Z}{R_Z}$	As per Table 2	±0.2	%

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

No.	CHARACTERISTICS	SYMBOL	CONDITIONS	UNIT
1	Ambient Temperature	T_{amb}	Note 1 Note 2	°C
2	Power Dissipation	P_D	24	mW

NOTES

1. Maximum Operating Temperature specified in Column 4 of Table 1(a).
2. The Temperature Tolerance = (+0 -3) °C.

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

Not applicable.

4.8 ENVIRONMENTAL AND ENDURANCE TESTS (CHARTS IV AND V OF ESCC GENERIC SPECIFICATION No. 4006)

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 2. Unless otherwise stated, the measurements shall be performed at T_{amb}=+25±0.01 °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 scheduled in Table 6. Unless otherwise stated, the measurements shall be performed at T_{amb}=+25±0.01 °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 tests are scheduled in Table 6. Unless otherwise stated, the measurements shall be performed at T_{amb}=+25±0.01 °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 ESCC Generic Specification No. 4006. The conditions for operating life testing shall be as specified in Table 5 for the burn-in test.

4.8.5 Electrical Circuits for Operating Life Tests

Not applicable.

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

No.	ESCC GENERIC SPEC. No. 4006		MEASUREMENTS AND INSPECTIONS		SYMBOL	LIMITS		UNIT
	ENVIRONMENTAL AND ENDURANCE TESTS (1)	TEST METHOD AND CONDITIONS	IDENTIFICATION	CONDITIONS		MIN.	MAX.	
01	Thermal Shock	Para. 9.2 (2)	-	-	-	-	-	-
02	Thermal Time Constant	Para. 9.3.1.3 In Still Air	**Initial Measurements** Zero Power Resistance **Final Measurements** Thermal Time Constant	 Para. 9.3.1.3(c) Para. 9.3.1.3(f)	 R_Z KH	 Record Values Table 2 Item 3		Ω
03	External Visual Inspection	Para. 9.5	ESCC 20500	-	-	-	-	-
04	Shock (Specified Pulse)	Para. 9.7	**Initial Measurements** Zero Power Resistance **During Shock** Intermittent Contact **After Shock** Zero Power Resistance Change Visual Examination	 Table 2 Item 1 No Open or Short Circuiting Table 2 Item 1 No evidence of damage	 R_Z - $\Delta R_Z/R_Z$ -	 Table 2 Item 1 - -2% -	 - +2% -	 - % -
05	Vibration	Para. 9.8	**Initial Measurements** Zero Power Resistance **During Vibration** Intermittent Contact **After Vibration** Zero Power Resistance Change Visual Examination	 Table 2 Item 1 No Open or Short Circuiting Table 2 Item 1 No evidence of damage	 R_Z - $\Delta R_Z/R_Z$ -	 Table 2 Item 1 - -2% -	 - +2% -	 - % -
06	Immersion	Para. 9.9	Visual Examination	No evidence of damage	-	-	-	-
07	Dielectric Withstanding Voltage	Para. 9.10	**During Test** Visual Examination **After Test** Visual Examination	 No evidence of breakdown or flashover No evidence of damage, arcing or breakdown	 - -	 - -	 - -	 - -
08	Resistance to Soldering Heat	Para. 9.11	**After Test** Zero Power Resistance Visual Examination	After a recovery period of 24±4 hrs Table 2 Item 1 No evidence of damage	 R_Z -	 Table 2 Item 1 -	 -	 -
09	Moisture Resistance	Para. 9.12	**Initial Measurements** Zero Power Resistance **Final Measurements** Zero Power Resistance Change Insulation Resistance	Not less than 1.5 hrs after removal from drying oven Table 2 Item 1 Within 24 hrs of removal from 1.5 to 3.5 hr conditioning Table 2 Item 1 Table 2 Item 2	 R_Z $\Delta R_Z/R_Z$ $R_{I\,pr}$	 Table 2 Item 1 -2% 100	 +2% -	 % MΩ

NOTES

1. The tests in this Table refer to either Chart IV or V and shall be used as applicable.
2. Thermal Shock Test Method and conditions shall use the deviation of this specification as applicable.

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

No.	ESCC GENERIC SPEC. No. 4006		MEASUREMENTS AND INSPECTIONS		SYMBOL	LIMITS		UNIT
	ENVIRONMENTAL AND ENDURANCE TESTS (1)	TEST METHOD AND CONDITIONS	IDENTIFICATION	CONDITIONS		MIN.	MAX.	
10	Terminal Strength	Para. 9.13	**Initial Measurements**					
			Zero Power Resistance	Table 2 Item 1	R_Z	Table 2 Item 1		
			Final Measurements					
			Zero Power Resistance Change	Table 2 Item 1	$\Delta R_Z/R_Z$	-2	+2	%
			Visual Examination	No evidence of damage	-	-	-	-
11	Operating Life	Para. 9.14	**Initial Measurements**					
			Zero Power Resistance	Table 2 Item 1	R_Z	Table 2 Item 1		
			Intermediate Measurements					
			Zero Power Resistance Change	Table 2 Item 1	$\Delta R_Z/R_Z$	-1	+1	%
			Insulation Resistance	Table 2 Item 2	R_I	100	-	MΩ
			Final Measurements					
			Zero Power Resistance Change	Table 2 Item 1	$\Delta R_Z/R_Z$	-1	+1	%
			Insulation Resistance	Table 2 Item 2	R_I	100	-	MΩ
12	Low Temperature Storage	Para. 9.16	**Initial Measurements**					
			Zero Power Resistance	Table 2 Item 1	R_Z	Table 2 Item 1		
			Final Measurements					
			Zero Power Resistance Change	Table 2 Item 1	$\Delta R_Z/R_Z$	-2	+2	%
			Visual Examination	No evidence of damage	-	-	-	-
13	Solderability	Para. 9.18	-	-	-	-	-	-
14	Permanence of Marking	Para. 9.20	ESCC 24800	-	-	-	-	-

NOTES

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

APPENDIX 'A' Page 1 of 1

AGREED DEVIATIONS FOR BETATHERM (IRELAND)

ITEMS AFFECTED	DESCRIPTION OF DEVIATIONS
Para. 4.2.2 Deviations from Final Production Tests ~~(Variant 08 to Testing Level B only)~~	Para. 9.2 Thermal Shock For ~~Variant 08~~ Variants 08,09,10,11 to Testing Level B, Parameter Drift Value Measurements in accordance with Para. 9.3.2 (and Para. 4.7.1 of the Detail Specification) shall be performed immediately before and after Thermal Shock.
Para. 4.2.3 Deviations from Burn-in and Electrical Measurements ~~(Variant 08 to Testing Level B only)~~	Para. 7.4/7.4.1 Check for Lot Failure / Lot Failure During 100% Testing For ~~Variant 08~~ Variants 08,09,10,11 to Testing Level B, all Parameter Drift or Limit Failures during Parameter Drift Value Measurements performed after Thermal Shock during Final Production Tests shall be included in the Check for Lot Failure Percent Defective Allowable calculation. This Percent Defective shall be referenced against the quantity of components submitted to Burn-in and Electrical Measurements plus any Parameter Drift or Limit failures during Parameter Drift Value Measurements performed after Thermal Shock.
Para. 4.2.5 Deviations from Lot Acceptance Tests ~~(Variant 08 only)~~	Para. 9.14.2 Operating Life during Lot Acceptance Testing For ~~Variant 08~~ Variants 08,09,10,11, amend (f), Data Points, to be as follows: Measurements at intermediate and end points in accordance with Table 6 of the Detail Specification at 0, 250, 500, 750 and 1000 ± 48 hours.
	Para. 9.6 Radiographic Inspection Inspection shall be with a single view such that the component's mounting plane is seated on the X-ray film holder.

(DCR333)