DOCUMENT CHANGE REQUEST

ESCC European Space Components Coordination

TO BE COMPLETED BY ORIGINATOR

Originator (1)	**Originator signature** (2)	**NSA or ESA representative signature** (3)	**Change request No.** (4)
Jude Neylon Affiliation Betatherm Ireland Ltd.	Date: 19 December 2006	Date: 20 December 2006	Page 1 of [3] (5)

DOCUMENT AFFECTED

Doc. No. (6)	**Status** (7)	**Title** (8)	**Other documents affected** (10)
4006/014	**Issue** 4	THERMISTORS (THERMALLY SENSITIVE RESISTORS), NCT, RANGE 2 000 TO 100 000 OHMS AT + 25^{O}C WITH A TEMPERATURE RANGE OF – 60 TO + 160 ^{O}C	NONE

Paragraph(s) and page(s) affected (9)

Pages: 6,7,8,10,12

Paragraphs: Table 1(a); Table 1(b); Table of Figure 2; 4.2.2; Table 2.

PROPOSED WORDING OF CHANGE (11)

SEE ATTACHED PAGES

Continuation sheet(s) attached: [x] Yes [ ] No

JUSTIFICATION (12)

SEE ATTACHED PAGES

Continuation sheet(s) attached: [x] Yes [ ] No

Changes required for: Procurement (project) [x] Qualification [ ] MRB decision [ ] (13)

General Improvement of Spec. [ ] Other [ ]

RESERVED FOR USE BY SCC SECRETARIAT

Date of registration	**Order of priority for Appr. / Impl.:** 1 (high) 2 (medium) 3 (low)
Attachments	**Qualification status:** Qualified In process of qualification

RESERVED FOR USE BY APPROVING AUTHORITY

Approved	**Date and signature**	**Reference to SCCG decision**
[ ] Yes [ ] No Priority [ ]		

Approved wording, if different from box 11 or reason for rejection (14)

Continuation sheet(s) attached: [ ] Yes [ ] No

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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 (±%)	7.0	3.0	2.6	2.0	2.0	1.7	1.6	3.0	3.5	---	---
10	G2K7D411	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	---	---
11	G4K7D421	NOM (Ω)	----	86724	29316	11300	4000	1630.0	864.0	374.80	204.00	--	--
		TOL (±%)	----	2.90	2.54	1.57	1.34	1.17	1.05	0.90	1.13	---	--

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

To

SYMBOL	MILLIMETRES					
	VARIANT 01, 02, 03, 04, 05, 10, 11		VARIANT 06, 08		VARIANT 09	
	MIN	MAX	MIN	MAX	MIN	MAX
A	280.00	330.00	356.00	406.00	500.00	550.00
B	6.10	6.60	6.10	6.60	6.10	6.60
C	-	2.80	-	2.40	-	2.80
D	-	9.80	-	9.80	-	9.80
E	0.33	0.48	0.33	0.48	0.33	0.48
F	-	50.00	-	50.00	-	50.00
G	50.00	80.00	50.00	80.00	50.00	80.00

JUSTIFICATION:
Includes new Variant 09, 10 and 11. The new lead length, for Variant 09, is set according to customer demand. Dimension C, for Variant 09, is at the maximum value for Variants with the exception of Variants 06 and 08.

CHANGE:
Page 10, Paragraph 4.4.2 change **from** "The lead material shall be in accordance with ESCC Detail Specification No. 3901/012 Variant 04 with the exception of Variant 06 and 08, which shall be in accordance with ESCC Detail Specification No. 3901/012 Variant 03" **to**
"The lead material shall be in accordance with ESCC Detail Specification No. 3901/012 Variant 04 with the exception of Variants 06, 08 ,09,10 and 11 which shall be in accordance with ESCC Detail Specification No. 3901/012 Variant 03"

JUSTIFICATION:
Includes new Variant 09, 10, and 11.

CHANGE:
Page 12, Table 2, No. 3 change **from**

3	Thermal Time Constant Variants 01-05 Variant 06 , 08	KH	Para. 9.3.1.3 T_{amb} = +25 ± 1^{0}C In Still Air Note 3	 - -	 40 25	sec.

to

3	Thermal Time Constant Variants 01-05 Variants 06 ,08. Variants 09, 10, 11	KH	Para. 9.3.1.3 T_{amb} = +25 ± 1^{0}C In Still Air Note 3	 - - -	 40 25 40	sec.

JUSTIFICATION:
Includes new Variant 09, 10, and 11.