

		APPLICATION FOR EXTENSION OF ESCC QUALIFICATION APPROVAL			Page 1 Appl. No. 266M	
Component Title: THERMISTORS, (THERMALLY SENSITIVE RESISTORS), NTC, BASED ON TYPES G15K4D489 AND *K3A35*		Executive Member: Enterprise Ireland		Date: 23/04/2026		
Components (including series and families) submitted for Extension of Qualification Approval: 1						
ESCC COMPONENT NO.	VARIANTS	RANGE OF COMPONENTS	BASED ON	TEST VEHICLE / S	COMPONENT SIMILAR	
400601301 to 400601307;	Variants 01; 02; 03; 04; 05; 06 and 07	1000 to 100000 OHMS	1K3A351, 2K3A352, 3K3A353, 4K3A354, 5K3A355, 10K3A739, 100K6A441	10K3A739 (Variant 06) and 100K6A441 (Variant 07)	Variants 01, 02, 03, 04, 05 (different resistance values only) Variant 07 (structurally similar – different ceramic material)	
400601408; 400601409; and 400601413	Variants 08; 09; and 13	10000 OHMS (Variant 09); 15000 OHMS (Variants 08 and 13)	G15K4D489; G10K4D453; and G15K4D589	G15K4D489 (Variant 08)	Variants 09 and 13 (different resistance values and/or different qualified lead material)	
Component Manufacturer 2 TE Connectivity Formerly MEAS Ireland (Betatherm) Ltd.		Location of Manufacturing Plant(s) 3 Ballybrit Business Park Galway Ireland		Date of original qualification approval: 4 Date: 10/07/2001 Certificate Ref No. 266		
ESCC Specifications used for Maintenance of qualification testing: 5 Generic: ESCC 4006 Issue: 4 Detail(s): ESCC 4006/013 Issue: 8 ESCC 4006/014 Issue: 10		Deviations to LVT testing and Detail Specification used: 6 No <input checked="" type="checkbox"/> Yes <input type="checkbox"/> (supply details in Box 15) Deviation from current Specifications: No <input checked="" type="checkbox"/> Yes <input type="checkbox"/> (Supply details)		Qualification Extension Report reference and date: 7 Extension of ESCC Qualification Report for ESCC 4006/013 Variants 01 to 07 & Appendices 04/03/2024 Extension of ESCC Qualification Report for ESCC 4006/014 Variants 08; 09 and 13 & Appendices 01/03/2024		
Summary of procurement or equivalent test results during current validity period in support of this application (those to ESCC listed first) 8						
Project Name	Testing Level	LAT	Date code	Quantity Delivered		
				(see section 1 of Extension of Qualification reports)		
PID changes since start of qualification 9 None <input type="checkbox"/> Minor* <input checked="" type="checkbox"/> Major* <input checked="" type="checkbox"/> *Provide details in box:		Current PID Verified by: <u>John Brierty</u> 10 Name of Executive Representative Ref No: PROCESS IDENTIFICATION DOCUMENT (P.I.D.) FOR THERMISTORS BASED ON ESCC DETAIL SPECIFICATIONS 4006/013 & 4006/014 Issue: 19 Date: 01/05/2024 Rev Date: 01/05/2024				
PID changes since start of qualification 14						
Current Manufacturing facilities surveyed by: <u>J. Brierty (EI) and L. Farhat, F. Martínez (ESA)</u> on 29/11/2018 11 (Name of Executive Representative) (Date) Satisfactory: Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Explain Report Reference: <u>ESA-TECQES-RP-012503</u>						

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Executive Member:	Enterprise Ireland	Date:	266M
			23/04/2026

Failure Analysis, DPA, NCCS available: Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> (Supply data)	12
Ref. No's and purposes:	

The undersigned hereby certifies on behalf of the ESCC Executive - that the above information is correct; - that the appropriate documentation has been evaluated; - that full compliance to all ESCC requirements is evidence (except as stated in box 15;) - that the reports and data are available at the ESCC Executive and therefore applies on behalf of Enterprise Ireland as the responsible Executive Member for ESCC qualification status to be extended to the component(s) listed herein.	13
 <hr style="width: 20%; margin-left: auto; margin-right: 0;"/> (Signature of the Executive Coordinator)	
Date: 29/04/2026	

Continuation of Boxes above:	14
<p>[9]</p> <ol style="list-style-type: none"> 1. Section 2.1. Changed TE Connectivity Sensors Solutions Division to TE Connectivity Sensors Group. 2. Section 2.2. Updated Organisation Chart. 3. Section 2.2.1. Changed from Sales Manager to Sales team and updated text. 4. Section 3.1. Added paragraph describing outsourcing of NTC ceramic chip production to Betacera, Taiwan. 5. Section 3.2. Updated to show that Production Areas 1 and 2 no longer apply to ESCC 4006/013 devices. 6. Section 3.2. X-Ray equipment has been moved to Production Area 2. Therefore, removed reference to X-Ray room and add that X-Ray is performed in Production Area 2. 7. Section 3.2. Removed Radiographic Inspection of ESCC 4006/013 devices from 'External Operations and Testing' as this operation is always performed in-house. 8. Fig 3.2.1. Updated to remove reference to X-Ray room as X-ray is now performed in Production Area 2. 9. Section 3.3. Updated to reflect SAP order processing. 10. Fig 3.4.1. Removed as not necessary to describe order processing. 11. Section 3.4.2. Updated to reference latest revision of route-sheet. 12. Section 3.4.4. Updated to reference latest revision of route-sheet. 13. Section 3.4.5. Updated to reference latest revision of route-sheet. 14. Section 4.4. Changed from 'in the preparation of the ceramic material' to 'in the preparation of the ceramic material (ESCC 4006/014)'. 15. Section 4.4.(e) Updated to remove description of Metallisation process for ESCC 4006/013 devices. 16. Section 4.4.(f) Updated to remove reference to ESCC 4006/013 devices. 17. Table 4.4.1 Updated to show Chip purchased from Betacera instead on manufactured. 18. Table 5.5.1. Updated information to show current situation. 19. Section 5.2. Updated so that Chart I does not reference ESCC 4006/013. 20. Section 6.1. Updated Equipment List to show current situation. 21. Section 7.1. Updated Qualification status. 	



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Non compliance to ESCC requirements:

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No.:	Specification	Paragraph	Non compliance
N/A	N/A	N/A	N/A

Additional tasks required to achieve full compliance for ESCC qualification or rationale for acceptability of noncompliance:

16

N/A

Executive Manager Disposition

17

Application Approval: Yes No

Action / Remarks:

Date: 29/05/2026

A.Zadeh Head of the Avionics and EEE Division



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ANNEX 1: LIST OF TESTS DONE TO SUPPORT EXTENSION OF QUALIFICATION

Tests conducted in compliance with:

- ESCC 4006 generic specification; Chart F4 (for ESCC/QPL parts);

Tests vehicle identification/description:

Chart F4 Tests on Variant 06 devices of ESCC 4006/013 – Date Code 2546B; which also re-qualifies Variants 01, 02, 03; 04 and 05 by Structural Similarity.	Chart F4 Test – Operating Life Test of Endurance SubGroup on Variant 07 devices of ESCC 4006/013 – Date Code 2502A; carried out as this Variant has a different ceramic composition to that of Variants 01, 02, 03; 04, 05 and 06. .
Chart F4 Tests on Variant 08 devices of ESCC 4006/014 – Date Code 2531A; which also re-qualifies Variants 09 and 13 by Structural Similarity.	

Detail Specification reference: ESCC 4006/013 Iss.8 and ESCC 4006/014 Iss.10. Note that all references to MIL-STD-202 Test Methods; for the purposes of this re-qualification; relate to MIL-STD-202H – Issue Date 18th April 2015

Chart F4	Test	Tick when done	Conditions	Date Code	Tested Qty	No. of Rejects	Comments if not performed. Comments on Rejection
Environmental / Mechanical Subgroups	Shock (Specified Pulse)	<input checked="" type="checkbox"/>	MIL-STD-202-213	2546B 2502A 2531A	12 12 12	0 0 0	2546B is Variant 06 of 4006/013 2502A is Variant 07 of 4006/013 2531A is Variant 08 of 4006/014
	Vibration	<input checked="" type="checkbox"/>	MIL-STD-202-204	2546B 2502A 2531A	12 12 12	0 0 0	2546B is Variant 06 of 4006/013 2502A is Variant 07 of 4006/013 2531A is Variant 08 of 4006/014
	Dielectric Withstanding Voltages	<input checked="" type="checkbox"/>	ESCC 4006 Para. 8.9	2546B 2502A 2531A	12 12 12	0 0 0	2546B is Variant 06 of 4006/013 2502A is Variant 07 of 4006/013 2531A is Variant 08 of 4006/014
	External Visual Inspection	<input checked="" type="checkbox"/>	ESCC Basic Specification No. 20500	2546B 2502A 2531A	12 12 12	0 0 0	2546B is Variant 06 of 4006/013 2502A is Variant 07 of 4006/013 2531A is Variant 08 of 4006/014
	Thermal Shock	<input checked="" type="checkbox"/>	MIL-STD-202-107	2546B 2502A 2531A	12 12 12	0 0 0	2546B is Variant 06 of 4006/013 2502A is Variant 07 of 4006/013 2531A is Variant 08 of 4006/014
	Resistance to Soldering Heat	<input checked="" type="checkbox"/>	MIL-STD-202-210	2546B 2502A 2531A	12 12 12	0 0 0	2546B is Variant 06 of 4006/013 2502A is Variant 07 of 4006/013 2531A is Variant 08 of 4006/014
	Moisture Resistance	<input checked="" type="checkbox"/>	MIL-STD-202-106	2546B 2502A 2531A	12 12 12	0 0 0	2546B is Variant 06 of 4006/013 2502A is Variant 07 of 4006/013 2531A is Variant 08 of 4006/014
	External Visual Inspection	<input checked="" type="checkbox"/>	ESCC Basic Specification No. 20500	2546B 2502A 2531A	12 12 12	0 0 0	2546B is Variant 06 of 4006/013 2502A is Variant 07 of 4006/013 2531A is Variant 08 of 4006/014
	Dissipation Constant	<input type="checkbox"/>	ESCC 4006 Para. 8.3.1.2	N/A	N/A	N/A	Test is not applicable; reference Paragraph 2.1.1.1 of ESCC 4006/013 and ESCC 4006/014.
	Thermal Time Constant	<input checked="" type="checkbox"/>	ESCC 4006 Para. 8.3.1.3	2546B 2502A 23191	12 12 12	0 0 0	2546B is Variant 06 of 4006/013 2502A is Variant 07 of 4006/013 23191 is Variant 08 of 4006/014
	Solderability	<input checked="" type="checkbox"/>	MIL-STD-202, Test Method 208	2546B 2502A 23191	12 12 12	0 0 0	2546B is Variant 06 of 4006/013 2502A is Variant 07 of 4006/013 23191 is Variant 08 of 4006/014
	Terminal Strength	<input checked="" type="checkbox"/>	MIL-STD-202- 211	2546B 2502A 23191	12 12 12	0 0 0	2546B is Variant 06 of 4006/013 2502A is Variant 07 of 4006/013 23191 is Variant 08 of 4006/014
	External Visual Inspection	<input checked="" type="checkbox"/>	ESCC Basic Specification No. 20500	2546B 2502A 23191	12 12 12	0 0 0	2546B is Variant 06 of 4006/013 2502A is Variant 07 of 4006/013 23191 is Variant 08 of 4006/014



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Chart F4	Test	Tick when done	Conditions	Date Code	Tested Qty	No. of Rejects	Comments if not performed. Comments on Rejection
Endurance Subgroups	Short Time Load	<input type="checkbox"/>	ESCC 4006 Para. 8.16	N/A	N/A	N/A	Test is not applicable; reference Paragraph 2.1.1.1 of ESCC 4006/013 and ESCC 4006/014.
	Low Temperature Storage	<input checked="" type="checkbox"/>	ESCC 4006 Para. 8.17	2546B 2502A 2531A	20 20 20	0 0 0	2546B is Variant 06 of 4006/013 2502A is Variant 07 of 4006/013 2531A is Variant 08 of 4006/014
	Operating Life	<input checked="" type="checkbox"/>	MIL-STD-202- 108	2546B 2502A 2531A	20 20 20	0 0 0	2546B is Variant 06 of 4006/013 2502A is Variant 07 of 4006/013 2531A is Variant 08 of 4006/014
	Permanence of Marking	<input checked="" type="checkbox"/>	ESCC Basic Specification No. 24800	2531A	20	0	For devices covered by ESCC 4006/013; this test is not applicable; reference Paragraph 2.1.1.1 of ESCC 4006/013.
	External Visual Inspection	<input checked="" type="checkbox"/>	ESCC Basic Specification No. 20500	2546B 2502A 2531A	20 20 20	0 0 0	2546B is Variant 06 of 4006/013 2502A is Variant 07 of 4006/013 2531A is Variant 08 of 4006/014
	Short Time load	<input type="checkbox"/>	ESCC 4006 Para. 8.16	N/A	N/A	N/A	Test Sequence is not applicable; reference Note 3 to Chart F4 of ESCC 4006.
	Low Temperature Storage	<input type="checkbox"/>	ESCC 4006 Para. 8.17	N/A	N/A	N/A	Test Sequence is not applicable; reference Note 3 to Chart F4 of ESCC 4006.
	High Temperature Storage	<input type="checkbox"/>	ESCC 4006 Para. 8.20	N/A	N/A	N/A	Test Sequence is not applicable; reference Note 3 to Chart F4 of ESCC 4006.
	External Visual Inspection	<input type="checkbox"/>	ESCC Basic Specification No. 20500	N/A	N/A	N/A	Test Sequence is not applicable; reference Note 3 to Chart F4 of ESCC 4006.
Additional Tests		<input type="checkbox"/>					
		<input type="checkbox"/>					
		<input type="checkbox"/>					

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NOTES ON THE COMPLETION OF THE APPLICATION FORM FOR ESCC QUALIFICATION EXTENSION APPROVAL**ENTRIES**

Form heading	shall indicate: - the title of the component as given in its detail specification or the name of the series, family; - the Executive Member; - the entering date; - the certificate number and its sequential suffix.
Box 1	shall provide details given in the table; in particular there shall be listed: - the variants or range of variants; - the range of components (the ESCC code is recommended to indicate the values or values range, the tolerance, the voltage, etc); the designation given in the detail specification as 'base on'; - under Test Vehicle enter either an ESCC code or the specific characteristic capable of identifying the component tested (e.g., voltage of coil for a relay); - under component similar enter a cross if relevant.
Box 2; 3 and 4	As per QPL entry; otherwise, an explanation of the changes must be supplied.
Box 5	Will show the ESCC Generic and Detail specifications, including issue number and revision letter, current at the time the tests reported were performed. If the specifications are different from those current on the date of the application, see Box 6.
Box 6	Will show the deviations from the Generic and Detail Specifications listed in Box 5, in particular deviations from testing. In case of deviations this must be listed in Box 15. In case the referenced specification in Box 5 have currently a different issue and/or revision indicate also whether the test data deviates or not from such current documents.
Box 7	Must reference the report(s) supplied in support of the application.
Box 8	Should provide the details of procurement to the full ESCC System, documentation of all of which should already have been delivered to the ESCC Executive under the terms of the relevant Generic Specification. An appropriate table has been drawn in this box.
Box 9	If the PID evolved after the Original Qualification or after the last Extension of Qualification, adequate details of such evolution shall be provided together with the reasons for the changes. Major changes shall be clearly marked.
Box 10	Identify the current PID issue status, date and actual date of verification. The date of verification of the current PID should be arranged as close as possible to the required date of extension.
Box 11	This box can be completed only after a physical visit to the plant to confirm that no unexplained changes occurred and that the practices, procedures, material, etc. used in manufacturing the components are as described in the PID. This survey shall be carried out in accordance with the requirements of ESCC Basic Specification No. 20200 and its findings shall be recorded.
Box 12	Provide details of, or reference to, any Destructive Physical Analysis (DPA) and Failure Analysis reports as well as any Nonconformance(s) (NCCS) occurred during the qualification validity period, stating if established corrective action have produced satisfactory results.
Box 13	Enter only the name of the Executive Member (i.e., CNES, DLR, ESTEC, etc.) and the signature of the responsible Executive Coordinator.
Box 14	To be used when there is a need to expand any of the boxes from 1 through 12. Identify box affected and reference the Box 14 in the relevant Box. Box 14 can be broken into 14a, 14b, etc. if several boxes have to be expanded.
Box 15	Fill in Table as requested.
Box 16	Any additional action deemed necessary by the Executive Member to bring the submitted data to a standard likely to be accepted by the ESCC Executive should be listed herein or the reason(s) to accept the noncompliance.
Box 17	All Executive Manager recommendations on the application itself, special conditions or restrictions, modifications of the QPL or QML entry, letters to the manufacturer, etc. shall be entered clearly in Box 19, signed by the representative for ESA, and dated.
Box 18	Fill in Table as requested.
Box 19	Confidential Details of PID changes including those of a confidential nature, shall be provided.
Box 20	State noncompliance with reference to specification(s) and paragraph(s). To simplify reference in Box 16 each nonconformance shall be sequentially numbered. If relevant state 'None'.
Box 21	Any additional action deemed necessary by the Executive Member to bring the submitted data to a standard likely to be accepted by the ESCC Executive should be listed herein or the reason(s) to accept the noncompliance.
Box 22	Additional Comments.