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|  | | APPLICATION FOR EXTENSION OF ESCC QUALIFICATION APPROVAL | | | Page 1 |
| Component Title: Capacitors, Ceramic, Chip, Type I, sizes 0603 to 2220 | | Executive Member: CNES | | | Date: 08/03/2017 |
| Appl. No. | | 323B | | | 1 |
| Components (including series and families) submitted for Extension of Qualification Approval: | | | | | |
| ESCC COMPONENT NO. | VARIANTS | RANGE OF COMPONENTS | BASED ON | TEST VEHICLE / S | COMPONENT SIMILAR |
| 3009/003 3009/004 | 06 06 | All values 16V to 100V | CEC2 02S CEC4 02S | 300900306C47C0KE 300900406C1002FC | See box 14 for qualified ranges. |
| 3009/005 3009/006 | 06 06 | All values 16V to 100V | CEC6 02S CEC7 02S | | |
| 3009/022 3009/037 | 06 06 | All values 16V to 100V | CEC12 02S CEC14 02S | | |
| 3009/040 | 01 | | CEC2 04S to CEC14 04S | 300904001C33C0JC 300904001C22C0JC | See comment in box 14 |
| Component Manufacturer EXXELIA Technologies | | Location of Manufacturing Plant(s) EXXELIA 1, rue des Temps Modernes 77600 CHANTELOUP EN BRIE FRANCE | | Date of original qualification approval: Date: 24/10/2012 Certificate Ref No. 323 | |
| ESCC Specifications used for Maintenance of qualification testing: Generic: 3009 Issue: 1 Detail(s): 3009/003 Issue: 5 3009/004 4 3009/040 1 | | Deviations to LVT testing and Detail Specification used: No <input checked="" type="checkbox"/> Yes <input type="checkbox"/> (supply details in Box 15) Deviation from current Specifications: No <input type="checkbox"/> Yes <input checked="" type="checkbox"/> (Supply details) | | Qualification Extension Report reference and date: Reports 15/0725 & 16/0735-A – CEC2 02S 47pF, 100V Reports 16/0035 & 16/0736-A – CEC4 02S 10nF, 50V Reports 16/0089 & 16/0737 – CEC14 04S 33pF, 50V Report 16/0297 – CEC14 04S 22pF, 50V | |
| Summary of procurement or equivalent test results during current validity period in support of this application (those to ESCC listed first) | | | | | |
| Project Name | Testing Level | LAT | Date code | Quantity Delivered | |
| ALTER Technology Thales Alenia Space EREMS ... | C EM B | - - - | 136 lots 6 lots 3 lots | Total 20 700 parts (85% 0603, 7% 1210, 5% 0805) | |
| PID changes since start of qualification None <input type="checkbox"/> Minor* <input type="checkbox"/> Major* <input checked="" type="checkbox"/> *Provide details in box: | | Current PID Verified by: CNES Ref No: PID 623.03.390 Issue: Rev H Rev Date: 29/02/2016 | | Name of Executive Representative Date: 16/03/2016 | |
| 19 | | 10 | | 11 | |
| Current Manufacturing facilities surveyed by: ESA, CNES on 23/03/2017 (Name of Executive Representative) (Date) | | | | | |
| Satisfactory: Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Explain | | | | | |
| Report Reference: ESA report QCS/LB/110203 dated 19/02/2011 and CR CNES 23/03/2017 | | | | | |

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|  | APPLICATION FOR EXTENSION OF ESCC QUALIFICATION APPROVAL Component title: Capacitors, Ceramic, Chip, Type I, sizes 0603 to 2220 Executive Member: CNES Date: 08/03/2017 | Page 2 Appl. No. 323B | | | | |
| 12 | | | | | | |
| Failure Analysis, DPA, NCCS available: Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> (Supply data) | | | | | | |
| Ref. No's and purposes: NCCS 2CETE605 dealing with delay in delivering maintenance data is appended | | | | | | |
| 13 | | | | | | |
| 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 CNES as the responsible Executive Member for ESCC qualification status to be extended to the component(s) listed herein. | | | | | | |
| Date: 21/03/2017 | |  JP. BUSSENOT (Signature of the Executive Coordinator) | | | | |
| 14 | | | | | | |
| Continuation of Boxes above: Box 1, Range of Components : | | | | | | |
| Style | Detail Spec. | Model | Variants | Capacitance Range (pF) | Rated Volt. (V) | Tolerance (pF, ±%) |
| 0805 | 3009/003 3009/040 | CEC2 02S CEC2 04S | 06 02 | 10 to 2 700 10 to 2 200 1 to 1 800 1 to 1 200 | 16 25 50 100 | < 10pF 0,25 – 0,5 – 1 (pF) |
| 1210 | 3009/004 3009/040 | CEC4 02S CEC4 04S | 06 04 | 10 to 15 000 10 to 13 000 10 to 12 000 10 to 6 800 | 16 25 50 100 | ≥ 10pF 1, 2, 5, 10 (%) |
| 1812 | 3009/005 3009/040 | CEC6 02S CEC6 04S | 06 05 | 100 to 33 000 100 to 30 000 100 to 22 000 100 to 12 000 | 16 25 50 100 | |
| 2220 | 3009/006 3009/040 | CEC7 02S CEC7 04S | 06 06 | 470 to 68 000 470 to 56 000 470 to 47 000 470 to 27 000 | 16 25 50 100 | |
| 1206 | 3009/022 3009/040 | CEC12 02S CEC12 04S | 06 03 | 10 to 6 800 10 to 6 200 1 to 5 600 1 to 3 900 | 16 25 50 100 | |
| 0603 | 3009/037 3009/040 | CEC14 02S CEC14 04S | 06 01 | 10 to 1 000 10 to 680 1 to 560 1 to 330 | 16 25 50 100 | |
| ESCC 3009/040 covering Ceruflex variants was not originally proposed with the initial qualification. Based on customers' orders and performance of Lot Acceptance test on the two CEC14 04S test vehicles, qualification might be extended to Ceruflex SnPb / NiBa variants. | | | | | | |
| Box 7. Qualification Extension Report See box 22 | | | | | | |

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|  | APPLICATION FOR EXTENSION OF ESCC QUALIFICATION APPROVAL | | Page 3 |
| | Component title: Capacitors, Ceramic, Chip, Type I, sizes 0603 to 2220 | | Appl. No. |
| | Executive Member: CNES | Date: 08/03/2017 | 323 B |
| Non compliance to ESCC requirements: | | | 15 |
| No.: | Specification | Paragraph | Non compliance |
| | | | |
| Additional tasks required to achieve full compliance for ESCC qualification or rationale for acceptability of noncompliance: | | | 16 |
| | | | |
| Executive Manager Disposition | | | 17 |
| Application Approval: Yes <input type="checkbox"/> No <input type="checkbox"/> | | | |
| Action / Remarks: | | | |
| <div style="text-align: center;">  Franco Ongaro Director of Technology, Engineering and Quality Head of ESA/ESTEC Establishment </div> | | | |
| Date: | | | |
| <div style="text-align: right;"> _____ Signature, ESA Representative </div> | | | |

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|  | APPLICATION FOR EXTENSION OF ESCC QUALIFICATION APPROVAL | Page 4 |
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| | Executive Member: CNES | Date: 08/03/2017 |

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

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Tests conducted in compliance with:

- ESCC 3009 generic specification; Chart V (for ESCC/QPL parts);
- Or PID-TFD (for ESCC/QML parts)


Tests vehicle identification/description:

| | |
|----------------------------|----------------------------|
| CEC2 02S 47pF 100V DC 1539 | CEC14 04S 33pF 50V DC 1605 |
| | CEC14 04S 22pF 50V DC 1613 |
| CEC4 02S 10nF 50V DC 1602 | |

Detail Specification reference: 3009/003/004/040

| Chart V | Test | Tick when done | Conditions | Date Code | Tested Qty | No. of Rejects | Comments if not performed. Comments on Rejection |
|-------------------------------------|--|-------------------------------------|------------------------|------------------------------|------------------|----------------|---|
| Environmental / Mechanical Subgroup | Mounting | <input checked="" type="checkbox"/> | IEC 384-1 | 1539 1602 1605 | 12 x 3 | 0 | |
| | Adhesion | <input checked="" type="checkbox"/> | ESCC 3009, Para. 9.5 | 1539 1602 1605 | 4 x 3 | 0 | |
| | Rapid Change of Temperature | <input checked="" type="checkbox"/> | IEC 68-2-14 | 1539 1602 1605 | 8 x 3 | 0 | |
| | Visual Inspection | <input checked="" type="checkbox"/> | ESCC 3009, Para. 9.1 | 1539 1602 1605 | 12 x 3 | 0 | |
| | Climatic Test Sequence | <input checked="" type="checkbox"/> | ESCC 3009, Para. 9.8 | 1539 1602 1605 | 12 x 3 | 0 | |
| Endurance Subgroup | Mounting | <input checked="" type="checkbox"/> | IEC 384-1 | 1539 1602 1605 | 10 10 20 | 0 | |
| | Operating Life | <input checked="" type="checkbox"/> | ESCC 3009, Para. 9.10 | 1539 1602 1605 | 10 10 20 | 0 | |
| | Electrical Measurements during Endurance Testing | <input checked="" type="checkbox"/> | ESCC 3009, Para. 9.4.5 | 1539 1602 1605 | 10 10 20 | 0 | |
| Electrical Subgroup (Elect. Meas.) | Mounting | <input checked="" type="checkbox"/> | IEC 384-1 | 1539 1602 1605 1613 | 3 3 6 6 | 0 | |
| | Temperature Coefficient (Type I) | <input checked="" type="checkbox"/> | ESCC 3009, Para. 9.11 | 1539 1602 1605 1613 | 3 3 6 6 | 0 | |

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| | Temperature Characteristic (Type II) | <input type="checkbox"/> | ESCC 3009, Para. 9.12 | | | | NA |
| Electrical Subgroup (Ass. / Capab. Tests) | Solderability | <input checked="" type="checkbox"/> | IEC 68-2-20 | 1539 1602 1605 1613 | 2 2 4 4 | 0 | |
| | Permanence of Marking | <input type="checkbox"/> | ESCC 24800 | | | | NA |
| Additional Tests | | <input type="checkbox"/> | | | | | |
| | | <input type="checkbox"/> | | | | | |
| | | <input type="checkbox"/> | | | | | |

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|  | <p align="center">APPLICATION FOR EXTENSION OF ESCC QUALIFICATION APPROVAL</p> <p>Component title: Capacitors, Ceramic, Chip, Type I, sizes 0603 to 2220</p> <p>Executive Member: CNES Date: 08/03/2017</p> | <p align="center">Page 6</p> <p align="center">Appl. No. 323B</p> |
| <p align="center">NOTES ON THE COMPLETION OF THE APPLICATION FORM FOR ESCC QUALIFICATION EXTENSION APPROVAL</p> | | |
| <p>ENTRIES Form heading</p> | <p>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.</p> | |
| <p>Box 1</p> | <p>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.</p> | |
| <p>Box 2; 3 and 4</p> | <p>As per QPL entry; otherwise, an explanation of the changes must be supplied.</p> | |
| <p>Box 5</p> | <p>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.</p> | |
| <p>Box 6</p> | <p>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.</p> | |
| <p>Box 7</p> | <p>Must reference the report(s) supplied in support of the application.</p> | |
| <p>Box 8</p> | <p>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.</p> | |
| <p>Box 9</p> | <p>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.</p> | |
| <p>Box 10</p> | <p>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.</p> | |
| <p>Box 11</p> | <p>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.</p> | |
| <p>Box 12</p> | <p>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.</p> | |
| <p>Box 13</p> | <p>Enter only the name of the Executive Member (i.e., CNES, DLR, ESTEC, etc.) and the signature of the responsible Executive Coordinator.</p> | |
| <p>Box 14</p> | <p>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.</p> | |
| <p>Box 15</p> | <p>Fill in Table as requested.</p> | |
| <p>Box 16</p> | <p>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.</p> | |
| <p>Box 17</p> | <p>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.</p> | |
| <p>Box 18</p> | <p>Fill in Table as requested.</p> | |
| <p>Box 19</p> | <p>Confidential Details of PID changes including those of a confidential nature, shall be provided.</p> | |
| <p>Box 20</p> | <p>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'.</p> | |
| <p>Box 21</p> | <p>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.</p> | |
| <p>Box 22</p> | <p>Additional Comments.</p> | |