		<b>APPLICATION FOR EXTENSION OF ESCC QUALIFICATION APPROVAL</b>				Page 1
		Component Title: RESISTOR, FIXED, SURFACE MOUNT, THIN FILM, NON-HERMETICALLY SEALED BASED ON TYPE TNPS ESCC DETAIL SPECIFICATION NO. 4001/029 Executive Member: DLR Date: 03/02/2021				Appl. No. 289F
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	
4001/029	01-03	all	TNPS 0603	4001/029-01		
			TNPS 0805	4001/029-02		
			TNPS 1206	4001/029-03		
Component Manufacturer Vishay Electronics GmbH		Location of Manufacturing Plant(s) Dr.-Felix-Tandman-Platz 1 D-95100 Selb Germany		Date of original qualification approval: Date: 01/05/2009  Certificate Ref No: 289		
ESCC Specifications used for Maintenance of qualification testing:  Generic: 4001 Issue: 5 Detail(s): 4001 / 029 Issue: 3		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 checked="" type="checkbox"/> Yes <input type="checkbox"/> (Supply details)		Qualification Extension Report reference and date:  Report Periodic tests No 289/2020/024 18/12/2020		
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		
				List of shipped TNPS last 12 month Period: May 2019 to April 2020 Date: 14/05/2020		
				Attachment to NCCS List of items to ship prior to new ESCC-Certificate of approval. Date: 28/01/2021		
PID changes since start of qualification None <input type="checkbox"/> Minor* <input type="checkbox"/> Major* <input checked="" type="checkbox"/> *Provide details in box: Annex 2 – box 19		Current PID Verified by: Burak Gökgöz, DLR Name of Executive Representative		Ref No: PID 145455 ESA Issue: 5 Revision: A1 Date: 27/01/2021 Rev Date: 15/01/2021		
Current Manufacturing facilities surveyed by: _____ on 20/01/2021 (Name of Executive Representative Agency) (Date)						11
Satisfactory: Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Explain						
Report Reference: VIS-AUD-2021						



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Executive Member: DLR Date: 03/02/2021

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Failure Analysis, DPA, NCCS available: Yes  No  (Supply data)

Ref. No's and purposes: The NCCS NC1DVIS101 has been closed out.  
The qualification of the TNPS production line in the new building has been completed successfully and approved by DLR and ESA. This NCCS formally covers the lots manufactured in the new building which have to be shipped prior to official revision of the certificate.

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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 DLR as the responsible Executive Member for ESCC qualification status to be extended to the component(s) listed herein.

Date: 03/02/2021

  
i.A. Burak Gökğöz  
(Signature of the Executive Coordinator)

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Continuation of Boxes above:



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Non compliance to ESCC requirements:

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No.:	Specification	Paragraph	Non compliance

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

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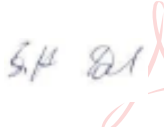
Executive Manager Disposition

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Application Approval: Yes  No

Action / Remarks:

Date:

  
Digitally signed  
by Britta Schade  
Date: 2021.02.23  
18:52:12 +01'00'

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B. Schade: Head of the Product Assurance  
and Safety Department



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

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Tests conducted in compliance with:

- ESCC 4001 generic specification; Chart F4 (for ESCC/QPL parts);
- or PID-TFD (for ESCC/QML parts)

Tests vehicle identification/description:

TNPS0603 10R0 B1, 56K2 B1, 221K B1	TNPS0805 10R0 B1, 180K B1, 422K B1
TNPS1206 10R0 B1, 160K B1, 1M0 B1	

Detail Specification reference: ESCC 4001-029, Issue 3

Chart F4	Test	Tick when done	Conditions	Date Code	Tested Qty	N° of Rejects	Comments if not performed. Comments on Rejection
Environmental / Mechanical Subgroup	Mounting	<input checked="" type="checkbox"/>	IEC 60115-1 clause 4.31	2039 A	45	0	
	Rapid Change Of Temperature	<input checked="" type="checkbox"/>	IEC 60068-2-14	2039 A	45	0	
	Vibration	<input type="checkbox"/>	IEC 60068-2-6		N/A		Deviation detail spec ESCC 4001-029, Issue 3 §2.1.1.2 for Chart F4
	Climatic test Sequence	<input checked="" type="checkbox"/>	ESCC 4001, Para 8.10	2039 A	45	0	
	Seal Test	<input type="checkbox"/>	IEC 60068-2-17		N/A		
	Mounting	<input checked="" type="checkbox"/>	IEC 60115-1 clause 4.31	2039 A	18	0	
	Robustness of Terminations	<input checked="" type="checkbox"/>	IEC 60068-2-21	2039 A	18	0	
	Climatic test Sequence	<input checked="" type="checkbox"/>	ESCC 4001, Para 8.10	2039 A	18	0	
	Seal Test	<input type="checkbox"/>	IEC 60068-2-17		N/A		
	Resistance to Soldering Heat	<input checked="" type="checkbox"/>	IEC 60068-2-20	2039 A	18	0	
	Mounting	<input checked="" type="checkbox"/>	IEC 60115-1 clause 4.31	2039 A	18	0	
	Climatic test Sequence	<input checked="" type="checkbox"/>	ESCC 4001, Para 8.10	2039 A	18	0	
	Seal Test	<input type="checkbox"/>	IEC 60068-2-17		N/A		
	Mounting	<input type="checkbox"/>	IEC 60115-1 clause 4.31		N/A		
	Insulation Resistance	<input checked="" type="checkbox"/>	ESCC 4001, Para 8.3.1.2	2039 A	45	0	
Voltage Proof	<input checked="" type="checkbox"/>	ESCC 4001, Para 8.3.1.3	2039 A	45	0		
Endurance Subgroup	Mounting	<input checked="" type="checkbox"/>	IEC 60115-1 clause 4.31	2039 A	54	0	
	Operating Life	<input checked="" type="checkbox"/>	ESCC 4001, Para 8.13	2039 A	54	0	
	Seal Test	<input type="checkbox"/>	IEC 60068-2-17		N/A		
Assembly Capability Subgroup	Solderability	<input checked="" type="checkbox"/>	IEC 60068-2-20	2039 A	18	0	
	Permanence of marking	<input checked="" type="checkbox"/>	ESCC 24800	2039 A	18	0	
	Operating Life	<input type="checkbox"/>	ESCC 4001, Para 8.13		N/A		Failure Rate Endurance Testing (8000h) not requested
	Seal Test	<input type="checkbox"/>	IEC 60068-2-17		N/A		
Additional Tests		<input type="checkbox"/>					
		<input type="checkbox"/>					
		<input type="checkbox"/>					

Remark: Tested Quantity of 45 pieces refers to 3 component types of 3 different R-values (low, medium high) = 9 test lots with 5 pieces tested per test lot.  
 Tested Quantity of 18 pieces refers to 3 component types of 3 different R-values (low, medium high) = 9 test lots with 2 pieces tested per test lot.



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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.