# ESCC

# APPLICATION FOR EXTENSION OF ESCC QUALIFICATION APPROVAL

Component Title:

TRANSISTORS, MICROWAVE, SMALL SIGNAL, SILICON, BIPOLAR, BASED ON TYPES BFY405, BFY420 AND BFY450

Page 1 Appl. No.

The state of the s			E	Executive Member: DLR				Date: 23/10/2018			245@	450 4				
Components	(includ	ng series	and far	nilies) sı	ubmitted fo	r Exte	nsion	of Qu	alification	Approval	:					1
ESCC COMPONENT VARIANTS NO.			s	RANGE OF COMPONENTS			E	BASED ON				COMPONENT SIMILAR				
5611/008 01 to 03			B			BFY42	BFY420		BFY640-04(ES) (See MOQ cut. 322c)	CFY6	7					
Component Manufacturer 2 Infineon Technologies AG				2	Location of Manufacturing Plant(s)  Am Campeon 1-12 D- 85579 Neubiberg Germany				Date of original qualification approval: Date: 01/06/1997  Certificate Ref No. 245							
ESCC Specifications used for Maintenance of qualification testing:				5	Deviation used:	ns to L	VT tes	sting a	and Detail	Specifica	6 tion	Qualification Extension Report reference and date:				7
Generic: 5010 Issue: 02  Detail(s): 5611/009 Issue: 02 5613/004 Issue: 02				02	No  Yes (supply details in Box 15)  Deviation from current Specifications:  No  Yes (Supply details)					LR10, Iss 1, April 2018 LR11, Iss 1, April 2018						
Summary of Project			quivale Testing		esults durin	ng curr LAT		alidity	period in	support of Date cod		pplicatio	on (those to ESCC listed Quantil	first) ty Deliver	ed	8
PID changes	s since l	ast MoQ			1 4 1			Cui by:	Current PID Verified by:			B. Gökgöz				10
None Minor* Major*		*Provide						Issi	f No: ue: v Date:	Generic Detail PI See abo	D: ve	N	ame of Executive Repre A63500-GEPID-P000, A63500-T1503-P000, Date	Issue 2c Issue 3a,	18.10.2018	
Current Man	ufacturi						(Nami		T. Kaupis			on	n 17	'-18/10/20 (Date)	018	11
Satisfactory		Yes	s 🛭		No		•=======	plain			-4.0)			(23.0)		
Report Refe	rence:	_IFX	(-AUD-:	2018			-									

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Page 2

Appl. No.

	Executive Member:	DLR		Date: 23/10/2018	2456
Failure Analysis, DPA, NCCS available:	Yes	□ No			12
Ref. No's and purposes:					
The undersigned hereby certifies on behalf that the appropriate documentation has bee (except as stated in box 15;) - that the repo DLR as the responsible Executive Member	en evaluated; - that ful orts and data are avail	I compliance to able at the ESC	all ESCC requirement C Executive and there	s is evidence fore applies on behalf of	13
				Block go	iligis
Date: 23/10/2018				B. Gökgöz (Signature of the Executive	Coordinator)
Continuation of Boxes above:					14

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Page 3

Appl. No.

Executive Member:

DLR

Date: 23/10/2018

2458 4

Non comp	pliance to ESCC requirements:			15
No.:	Specification	Paragraph	Non compliance	
1	ESCC 5010	CHART F4	No periodic repetition of Endurance Subgroup	
7	ESCCSDIO ISSUE3 (APRIL ZOIZ)		issue 2 USED FOR MAINTEMANCE OF AVALIFICATION.	
Additiona noncomp		ESCC qualification or rationale for acceptabili	ty of	16
The appro	oved Detail PIDs describe the agreed method	ology for maintenance of qualification regardin	g similarity in § 7	-
RE	rised pid Approve	D IN OCT. 2018		
Executive	e Manager Disposition			17
Application / R	on Approval: Yes 🗹 No 🗆 Remarks:			
Date:			Signature of ESA Head of Product Assuran Safety Department	ace and

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245@ H

Page 4

Appl. No.

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

Tests conducted in compliance with:

ESCC 5010 generic specification; Chart V (for ESCC/QPL parts);

Tests vehicle identification/description:

1814LR10	BFY640-04(ES), EnvMechSG, AssCapSG, DecapSG, 1709A	
1814LR11	CFY67-08(ES), AssCapSG, 1632A	

Detail Specification reference: 5613/004 and 5611/009

Chart V	Test	Tick when done	Conditions	Date Code Diffusion Lot	Tested Qty	No. of Rejects	Comments if not performed. Comments on Rejection
	Thermal Shock Test	×	MIL-STD-202 Test Method 107 Test Condition B, 100 cycle	1709A	10	0	acc. Detail Spec
sdno	Shock Test		MIL-STD-750 Test Method 2016				n.a. acc. Detail Spec
Subgi	Vibration Test		MIL-STD-750 Test Method 2056				n.a. acc. Detail Spec
Environmental/Mechanical Subgroups	Constant Acceleration		MIL-STD-750 Test Method 2006				n.a. acc. Detail Spec
	Seal Test (Fine and Gross Leak)	×	MIL-STD-750 Test Method 1071	1709A	10	0	
	Moisture Resistance	×	MIL-STD-750 Test Method 1021	1709A	10	0	
	Electrical Measurements at Room Temp.	×	Table 2 of the Detail Specification	1709A	10	0	
	External Visual Inspection	⊠	ESCC Basic Specification No. 20500	1709A	10	0	
Endurance Subgroup*	Operating Life		MIL-STD-750 Test Method 1026				Former data from Wafer available
	Electrical Measurements during Endur. Test		Table 6 of the Detail Specification				Former data from Wafer available
	External Visual Inspection		ESCC Basic Specification No. 20500				Former data from Wafer available

<sup>\*</sup> LAT2 on actual wafer was performed satisfactorily on Date Code: 0007L and 0714A

18



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Appl. No.

Page 5

245 H

Executive Member:	DLR	Date:	23/10/2018

Chart V	Test	Tick when done	Conditions	Date Code Diffusion Lot	Tested Qty	No. of Rejects	Comments if not performed. Comments on Rejection
Capability sts	Solderability Test	×	MIL-STD-750 Test Method 2026	1632A	2 4	0	
Assembly Capo	Permanence of Marking		ESCC Basic Specification No. 24800	1632A	2 4	0	
Assen	Terminal Strength		MIL-STD-750 Test Method 2036	1632A	2 4	0	
ation	Internal visual inspection	×	ESCC Basic Specification No. 20400	1632A 1709A	2 6	0	
De- encapsulation Tests	Bond Strength	×	MIL-STD-750 Test Method 2037	1632A 1709A	2 6	0	
en	Die Shear	⊠	MIL-STD-750 Test Method 2017	1632A 1709A	2 6	0	



Box 22

Additional Comments.

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Date 23/10/2018

Page 7

Appl. No.

## 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 non-conformance 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.