

Component Title: Bipolar (PN) Power Diodes based on type BYV, BYW and STTH

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Executive Member:

CNES

Date: 18/10/2018

274G

Components (inclu	iding series and fa	ımilies) sı	ubmitted for Ext	ension	of Qual	ification	Approval:						1
ESCC COMPONENT NO.	VARIAN'	rs	RANGE OF COMPONENTS					BASED ON		TEST VEHICLE / S		COMPONENT SIMILAR	
5103/029 05, 07, 08			TO254, SMD0.5				BYW81	BYW81-200		ID33518002ZW SMD.5			
										= = = = = =	1 -		
5103/031	02, 05		TO254, TO25	BYV54-200			ID3360900301 TO254AA						
5103/032								STTH60400		ID33621007ZZ SMD1	1		
Component Manufacturer 2 STMicroelectronics			Location of Manufacturing Plant(s) 3 3, rue de Suisse BP4199, 35041 Rennes Cedex				Date of original qualification approval: Date: 01/08/2003 Certificate Ref No. 274						
Supplication and application of Williams Control	70-70 or some = 2700 or 5	5	6					0.000					7
ESCC Specification Maintenance of qu	ns used for alification testing:		Deviations to used:	LVT te	sting an	id Detail	Specification	on	Qualification Extension Report reference and date:				
Generic: 5000	Issue:	3	No ⊠ Yes ☐ (supply details in Box 15)				BYW81-200SG Lot ID335118002ZW_Chart F4 8/2/17 BYV54S200HYG Lot ID3360900301_Chart F4 8/12/17 STTH60400SAG3 Lot ID33621007ZZ_ChartF4_Sg2						
Detail(s): 5103/ 5103/ 5103/	031	9 7 1	Deviation from current Specifications:						4/5/17 Evaluation report STTH60400: RNS/SS/18-024-01				
3103/	032	~·! <u>)</u>	No ⊠	Yes		(Supply	details)						
												-	8
Summary of procu Project Name		ent test re g Level	esults during cu		alidity pe	eriod in s	support of the Date code		plication	on (those to ESCC listed	first) y Delive	rod	
See Appendix	resum	y Levei		<u>\ </u>			Date code			Quantit	y Deliver	reu	
PID changes since	start of qualificat	on		9	Curre	ent PID	Verified by	:		CNES		 [10
None					Det 1	la.	0007046 /			lame of Excutive Repres v 20 and 8122351 (speci		r Poetifier one	1
Minor* ⊠					Ref N	10.	Schottky D				iic Powe	Recuiler and	1
Major* □	*Provide detail	s in box:			Issue Rev [Date):	14/10/2018	
		20				01150					014 01004	10	11
Current Manufactu	iring facilities surv	eyea by:	·	/Nom	o of Eve	CNES	Representat	ivo)	oi	n 0	2/10/201 (Date)	18	
Satisfactory:	Yes 15		No 🗆		e or Exe plain	Journe P	Chieseillai	146)			(Date)		
Caudiaciony.	Yes 🛭		,,,, L	_^	Picini								
Report Reference	CR-Ac	tivités ST	Octobre 2018										



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1			LACCULIVE	Wichiber	. 014	LU			Date.	10/10/2010		2/4	G
													12
Failur	e Analysis, DPA	, NCCS av	ailable:	Yes		No	\boxtimes	(Supply data)					
Ref. No	's and purposes:												
													13
The und	dersigned hereby cer appropriate docume	tifies on beha	of the ESC	C Execut	tive - that	the abo	ve info	rmation is correct	; -				_ 10_
(except	as stated in box 15:)	- that the rep	orts and data	a are avai	ilable at t	he ESCO	C Exec	utive and therefor	re applies	on behalf of		2	
CNES	as the responsible Ex	ecutive Memi	ber for ESCC	qualifica	ition statu	us to be	extend	ed to the compon	ent(s) list	ed herein.	<-	Mason	
Date:	22/10/2018									JP	BUSSENOT	Γ	
									(Si	gnature of the			
Continu	ation of Boxes above):											14
=:=::::::::::::::::::::::::::::::::::::													14



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Non compliand	e to ESCC requirements:					15
No.:	Specification		Paragraph		Non compliance	
Additional task	s required to achieve full or	ampliance for ESC(C qualification or rationale for accep	ntability of		1
noncompliance	2:			Stability of		16
TO	vironmental/mechanical su 254 package covered by te	ests on BYV54S200	in TO254AA			
SN	ID1 packaged covered by t ID.5 package covered by te	est on STPS80A15	OCSAG (see certificate 272)			
- En	durance subgroup: All dies	have done 2000h li	ife test			
Executive Man	ager Disposition					17
Application Ap	proval: Yes	No 🗆				
Action / Remai	104					
					01	
				6	DI	
Date:						
				Signature of E	SA Head of the Product Ass Safety Department	surance and



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

Tests conducted in compliance with:

ESCC 5000 generic specification; Chart F4 (for ESCC/QPL parts); or PID-TFD (for ESCC/QML parts)

Tests vehicle identification/description:

BYW81-200SG Lot ID335118002ZW_Chart F4 DC1612	STTH60400CSAG3_Chart F4 Sg2 DC1637
BYV54S200HYG Lot ID3360900301_Chart F4 DC1712	

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Detail Specification reference:

Chart F4	Test	Tick when done	Conditions	Date Code Diffusion Lot	Tested Qty	N° of Rejects	Comments if not performed Comments on Rejection
	Mechanical shock	×	MIL-STD-750 TM2016	1612 1712	15 + 15	0	
al Subgroup	Vibration	⊠	MIL-STD-750 TM2056	1612 1712	15 + 15	0	
	Constant acceleration	×	MIL-STD-750 TM2006	1612 1712	15 + 15	0	
	Seal Fine leak Gross leak	×	MIL-STD-750 TM1071	1612 1712	15 + 15	0	
	Electrical Measurement	⊠	Intermediate and End- Point Electrical Measurements	1612 1712	15 + 15	0	
hanic	External Visual	Ø	ESCC Basic Spec 20500	1612 1712	15 + 15	0	
Environmental/Mechanical Subgroup	Thermal shock		MIL-STD-750 TM1056	Click here to enter text.			Only applicable to axial lead glass diodes
	Temperature Cycling	⊠	MIL-STD-750 TM1051	1612 1712	15 + 15	0	
	Moisture Resistance	×	MIL-STD-750 TM1021	1612 1712	15 + 15	0	
	Seal Fine leak Gross leak	×	MIL-STD-750 TM1071	1612 1712	15 + 15	0	
	Electrical Measurement	×	Intermediate and End- Point Electrical Measurements	1612 1712	15 + 15	0	
	External Visual	×	ESCC Basic Spec 20500	1612 1712	15 + 15	0	
	Operating Life	\boxtimes	ESCC 5000 Para. 8.19	1612 1712	15 + 15 +15	0	
rance	Electrical Measurement	×	Intermediate and End- Point Electrical Measurements	1612 1712	15 + 15 +15	0	
Endurance Subgroup	Seal Fine leak Gross leak	×	MIL-STD-750 TM1071	1612 1712	15 + 15 + 15	0	
	External Visual Inspection	×	ESCC Basic Spec 20500	1612 1712	15 + 15 +15	0	
	Permanence of Marking		ESCC Basic Spec 24800				Not applicable on Laser marking
를 를 하	Terminal Strength	×	ESCC 5000 Para. 8.18	1612 1712	5 + 5	0	
Assembly Capability Subgroup	Internal Visual	×	ESCC Basic Spec 20400	1612 1712	5 + 5	0	
8 0 g	Bond Strength	×	MIL-STD-750 TM 2037	1612 1712	3 + 3	0	
	Die Shear	×	MIL-STD-750 TM 2017	1612 1712	3 + 3	0	



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COMMENT.	\$6108.0X	Execut	ive Member: CNES		Date: 18/10/2018 274G				
Ch art F4	Test	Tick when done	Conditions	Date Code Diffusion Lot	Tested Qty	N° of Rejects	Comm peri Comments o	ents if not formed. on Rejection	
nal									
Additional Tests									
₹									



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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.