## nexperia

## **Reliability Results for Product Type PBSS4021SP**

Time period: Q1/2018 to Q4/2018

**Test Results** 

Test		Conditions	Duration	Quantity	Rejects				
# 1	<b>TEST</b> Pre- and Post-Stress Electrical Test	T <sub>amb</sub> = 25 °C	N/A	all parts	see below				
# 2	<b>PC</b> Preconditioning	JESD22-A113 Bake $T_{amb}$ = 125 °C Soak $T_{amb}$ = 85 °C, RH = 85% Reflow soldering	24 hours 168 hours 3 cycles	35200	0				
# 5	<b>HTRB</b> High Temperature Reverse Bias	MIL-STD-750-1 M1038 Method A $T_j = T_{jmax}$ , Vr = 100% of max. datasheet reverse voltage	1000 hours	9680	0				
# 7	<b>TC</b> Temperature Cycling	JESD22-A104 -55 °C to T <sub>jmax</sub> , not to exceed 150°C	1000 cycles	8800	0				
# 8	<b>AC</b> Autoclave	JESD22-A102 T <sub>amb</sub> = 121 °C, RH = 100 % Pressure = 205 kPa (29.7 psia)	96 hours	8800	0				
# 9	<b>H3TRB</b> High Humidity High Temperature Reverse Bias	JESD22-A101 $T_{amb}$ = 85 °C, RH = 85%, V_R > 80 % of rated reverse voltage	1000 hours	8800	0				
# 10	<b>IOL</b> Intermittent Operating Life	MIL-STD-750 Method 1037 $t_{on}$ = $t_{off}$ , devices powered to insure $\Delta T_j$ = 100 °C for 15000 cycles	1000 hours	8800	0				
# 20	<b>RSH</b> Resistance to Solder Heat	JESD22-A111 260 °C ± 5 °C	10 s	2760	0				
# 21	<b>SD</b> Solderability	J-STD-002 Test method B and D		1950	0				

## **Calculation of FIT and MTBF**

Test considered for FIT calculation: High Temperature Reverse Bias (HTRB, Test # 5) Confidence level 60%, derated to 55 °C, activation energy 0.7 eV, test time 168 to 1000 hours

Wafer Fab	Technology	Quantity	Rejects	Failure Rate	e MTBF
Nexperia DHAM	Small Signal Bipolar	9680	0	0.44 FIT	260034 years

## © 2019 Nexperia B.V.

All rights reserved. Reproduction in whole or in part is prohibited without the prior written consent of the copyright owner. The information presented in this document does not form part of any quotation or contract, is believed to be accurate and reliable and may be changed without notice. No liability will be accepted by the publisher for any consequence of its use. Publication thereof does not convey nor imply any license under patent- or other industrial or intellectual property rights.