

## **Quarterly Reliability Monitoring Results**

## Quarters: Q1/2022 to Q4/2023

Based on structural similarity

Supplier Nexperia B.V. Name of Laboratory Assembly reliability labs		User Part Number						
		PESD9V0W1BCSF						
		Part Description						
		NXP ICN8	XP ICN8 Protection INDI					
		BD package						
Test		Test Conditions	Duration	# Lots	# Quantity	# Rejects		
	TEST							
	Pre- and Post-Stress							
# 1	Electrical Test	Tamb = 25 °C	N/A	see below	all parts	see below		
		MIL-STD-750-1						
	HTRB	M1038 Method A						
		Tj = Tjmax, Vr = 100% of max. datasheet						
# 5	Bias	reverse voltage	1000 hours	92	4040	0		
		150500 4404						
	TC	JESD22-A104						
# 7	Temperature Cycling	-40 °C to 125°C	1000 cycles	157	6880	0		
	UHAST	JESD22-A118						
# 8 <b>o</b> r	Unbiased HAST	Tamb = 130 °C, RH = 85 %						
# 6 01	Olibiased HAST		- 96 hours	n.a.	n.a.	n.a.		
	AC	JESD22-A102 Tamb = 121 °C, RH = 100 %						
<b>"</b> •	Autoclave	Pressure = 205 kPa (29.7 psia)						
# 8a	Autociave	riessule = 203 kra (29.7 psia)						
	HAST	JESD22-A110						
	Highly Accelerated Stress	Tamb = 130 °C, RH = 85%, VR = 80 % of						
# 9	Test	rated reverse voltage <sup>[1]</sup>	1000 hours	156	6840	0		
# 9		MIL-STD-750 Method 1037	1000 110013	130	0040	0		
	IOL	ton = toff, devices powered to insure $\Delta T_j$ =						
# 10	Intermittent Operating Life		1000 hours					
# 10	Intermittent Operating Life	100 C 101 15000 Cycles	1000 nours	n.a.	n.a.	n.a.		
	RSH	JESD22-A111						
# 20	Resistance to Solder Heat	260 °C ± 5 °C	10 s	n.a.	n.a.	n.a.		
	SD							
# 21	Solderability	J-STD-002		8	240	0		

<sup>[1]</sup> The maximum applied voltage is limited by test chamber set up and does not exceed 115V.

## **Calculation of FIT and MTTF**

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 (FIT)	MTTF (hrs)
NXP ICN8	Protection INDI	4040	0	1,1	9,51E+08

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