

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						
		PESD5V0HS2-SF						
		Part Description						
		NXP 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						
	High Temperature Reverse Bias	Tj = Tjmax, Vr = 100% of max. datasheet				_		
# 5	DidS	reverse voltage	1000 hours	92	4040	0		
	тс	JECD22 A104						
, -	Temperature Cycling	JESD22-A104 -40 °C to 125°C	1000	4.50				
# 7	remperature Cycling	-40 °C to 125°C	1000 cycles	157	6880	0		
	UHAST	JESD22-A118						
# 8 o r	Unbiased HAST	Tamb = 130 °C, RH = 85 %						
# 8 0 F	Ulibiaseu HAST		- 96 hours	n.a.	n.a.	n.a.		
	40	JESD22-A102						
	AC Autoclave	Tamb = 121 °C, RH = 100 % Pressure = 205 kPa (29.7 psia)						
# 8a	Autoclave	Plessure = 203 kPa (29.7 psia)						
		JESD22-A110						
	HAST Highly Accelerated Stress	Tamb = 130 °C, RH = 85%, VR = 80 % of						
# 9	Test	rated reverse voltage ^[1]	1000 hours	156	6840	0		
# 9	1630	· · · · · · · · · · · · · · · · · · ·	1000 nours	136	0840	U		
	IOL	MIL-STD-750 Method 1037						
# 10	Intermittent Operating Life	ton = toff, devices powered to insure ΔTj =	1000					
# 10	The mittent Operating Life	100 C 101 13000 Cycles	1000 hours	n.a.	n.a.	n.a.		
	RSH	JESD22-A111						
# 20	RSH Resistance to Solder Heat		10 -					
# 20	SD	200 C ± 3 C	10 s	n.a.	n.a.	n.a.		
# 21	SD Solderability	J-STD-002		0	240	0		
# 21	30idel ability	J-31D-002		8	240	0		

^[1] 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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