nexperia

Quarterly Reliability Monitoring Results

Quarters: Q1/2021 to Q4/2021

Based on structural	similarity
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Supplier Nexperia B.V.		User Part Number						
		PESD4V0X1BESF						
Name of Laboratory		Part Description						
		NXP ICN8	Protection IND	DI				
Assembly reliability labs		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	Tj = Tjmax, Vr = 100% of max. datasheet						
# 5	Bias	reverse voltage	1000 hours	43	3440	0		
	тс	JESD22-A104						
# 7	Temperature Cycling	-40 °C to 125°C	1000 cycles	67	5360	0		
		JESD22-A102						
	AC	Tamb = 121 °C, RH = 100 %						
# 8	Autoclave	Pressure = 205 kPa (29.7 psia)	96 hours	n.a.	n.a.	n.a.		
	HAST	JESD22-A110						
	Highly Accelerated Stress	Tamb = 130 °C, RH = 85%, VR = 80 % of						
# 9	Test	rated reverse voltage ^[1]	1000 hours	67	5360	0		
		MIL-STD-750 Method 1037	1000 110010	0,	5550	0		
	IOL	ton = toff, devices powered to insure ΔT_j =						
# 10	Intermittent Operating Life		1000 hours	n.a.	n.a.	n.a.		
10			1000 110015					
	RSH	JESD22-A111						
# 20	Resistance to Solder Heat		10 s	n.a.	n.a.	n.a.		
# 20	SD	200 0 - 5 0	10.5	n.a.	n.a.	11.d.		
# 21	Solderability	J-STD-002		10	120	0		
# 21	Soluerability	J-31D-002		12	120	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

NXP ICN8 Protection INDI 3440 0 1.2 8.10E+08	Wafer Fab	Technology	Quantity	Rejects	Failure Rate (FIT)	MTTF (hrs)
	NXP ICN8	Protection INDI	3440	0	1.2	8.10E+08

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