nexperia

Reliability Monitoring Results

Quarters: Q1/2022 to Q4/2022

Based on structural similarity

Suppli	ier	User Part Number							
Nexperia B.V.		74LVC2G38GN	74LVC2G38GN						
Part D	escription: Dual 2-input NA	ND gate; open-drain							
Pro	nction Family: LVC cess family: Sub micron kage family: XSON								
JESD4	7 Test	Test Conditions	Duration	# Lots	# Quantity	# Rejects			
# 1	TEST Pre- and Post-Stress Electrical Test	Tamb = 25 °C	N/A	see below	all parts	see below			
# 2	PC Preconditioning	JESD22-A113 MSL 1	N/A	1125	29955	0			
# 5a	HTOL EFR High Temperature Operating Life Extrinsic	JESD22-A108 Tj = 150°C $V_{CCMAX} \le V \le 1.2*V_{CCMAX}$	48 hours or 168 hours	380	56512	0			
# 5b	HTOL IFR High Temperature Operating Life Intrinsic	JESD22-A108 Tj = 150°C $V_{CCMAX} \le V \le 1.2*V_{CCMAX}$	≥500 hours	155	11552	0			
# 7	TC Temperature Cycling	JESD22-A104 -65 °C to 150°C	≥500 cycles	589	16980	0			
# 9	uHAST / HAST unbiased or biased High Accelerated Stress Test	JESD22-A101 Tamb = 130 °C, RH = 85%, V = V _{CCMAX}	96 hours	536	12975	0			

Calculation of PPM, FIT and MTTF

Test considered for PPM calculation: High Temperature Operating LifeTest Extrinsic (HTOL EFR, Test # 5a above) Test considered for FIT and MTTF calculations: High Temperature Operating LifeTest Intrinsic(HTOL IFR, Test # 5b above)

Confidence level 60%, derated to 55 °C, activation energy 0.7 eV, test time 168 to 1000 hours

Product Family	Package Family	Quantity	Rejects	Extrinsic Failure Rate (PPM)	Intrinsic Failure Rate (FIT)	MTTF (hrs)
LVC	XSON	11552	0	17	0.4	2.77 E+09

All information hereunder is per Nexperia's best knowledge. This document does not provide for any representation or warranty express or implied by Nexperia. In case Nexperia has tested the product, this documentation reflects the outcome of the analysis of the actually tested parts only.