## nexperia

## **Reliability Monitoring Results**

## Quarters: Q1/2022 to Q4/2022

Based on structural similarity

Suppli	ier	User Part Number						
Nexperia B.V.		74LVC2G04GX						
Part D	Description: Dual inverter							
Pro	nction Family: LVC ocess family: Sub micron ckage family: X2SON							
JESD4	7 Test	Test Conditions	Duration	# Lots	# Quantity	# Rejects		
	TEST	T 1 25 22				see		
#1	Pre- and Post-Stress Electrical Test	Tamb = 25 °C	N/A	see below	all parts	below		
# 2	PC	JESD22-A113	N/A	1898	65792	0		
" ~	Preconditioning	MSL 1		1050	00772	Ũ		
	HTOL EFR	JESD22-A108	48 hours					
# 5a	High Temperature	Tj = 150°C	or	380	56512	0		
	Operating Life Extrinsic	$V_{CCMAX} \leq V \leq 1.2^*V_{CCMAX}$	168 hours					
" <b>F</b> I		JESD22-A108		455	44550	0		
# 5b	High Temperature	$T_j = 150^{\circ}C$	≥500 hours	155	11552	0		
	Operating Life Intrinsic	$V_{CCMAX} \leq V \leq 1.2^* V_{CCMAX}$						
# 7	<b>TC</b> Temperature Cycling	JESD22-A104 -65 °C to 150°C	≥500 cycles	954	33368	0		
	uHAST / HAST	JESD22-A101		945	32424	0		
# 9	unbiased or biased High	Tamb = 130 °C,	96 hours					
	Accelerated Stress Test	$RH = 85\%$ , $V = V_{CCMAX}$						

## 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	X2SON	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.