nexperia

Reliability Monitoring Results

Quarters: Q1/2022 to Q4/2022

Based on structural similarity

Suppli	er	User Part Number							
Nexperia B.V.		74LVC1G18GV-Q100	74LVC1G18GV-Q100						
Part D	escription: 1-to-2 demultip	lexer (3-state)							
Pro	nction Family: LVC cess family: Sub micron kage family: TSOP								
JESD4	7 Test	Test Conditions	Duration	# Lots	# Quantity	# Rejects			
	TEST				,	see			
# 1	Pre- and Post-Stress Electrical Test	Tamb = 25 °C	N/A	see below	all parts	below			
# 2	PC Preconditioning	JESD22-A113 MSL 1	N/A	156	12481	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	73	5846	0			
# 9	uHAST / HAST unbiased or biased High Accelerated Stress Test	JESD22-A101 Tamb = 130 °C, RH = 85%, V = V _{CCMAX}	96 hours	83	6635	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	TSOP	11552	0	17	0.4	2.77 E+09

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