nexperia

Reliability Monitoring Results

Quarters: Q1/2021 to Q4/2021

Based on structural similarity

Suppli	er	User Part Number							
Nexperia	a B.V.	74LVT162240ADGG	74LVT162240ADGG						
Part D	escription: 16-bit inverter/	line driver with bus hold an	d 30 Ohm termir	nation (3-state)					
Pro	nction Family: LVT cess family: Sub micron kage family: TSSOP								
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	863	73980	0			
	HTOL EFR	JESD22-A108	48 hours						
# 5a	High Temperature	Tj = 150°C	or	122	29837	0			
	Operating Life Extrinsic	$V_{CCMAX} \le V \le 1.2 * V_{CCMAX}$	168 hours						
# 5b	HTOL IFR High Temperature Operating Life Intrinsic	JESD22-A108 Tj = 150°C VCCMAX \leq V \leq 1.2*VCCMAX	≥500 hours	70	5655	0			
# 7	TC Temperature Cycling	JESD22-A104 -65 °C to 150°C	≥500 cycles	478	37734	0			
# 9	uHAST / HAST unbiased or biased High Accelerated Stress Test	JESD22-A101 Tamb = 130 °C, RH = 85%, V = V _{CCMAX}	96 hours	462	36246	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)
LVT	TSSOP	5655	0	31	0.6	1.68 E+09

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