

Quarterly Reliability Monitoring Results

Quarters: Q1/2022 to Q4/2023

Based on structural similarity

Nexperia SMD pac Test Cor Stress Tamb = JESD22- Bake Tar Soak Tar Reflow st MIL-STD MIL-STD	scription DHAM Reage Inditions 25 °C A113 Inditions A113 Inditions A114 Inditions A115 Inditions A116 Inditions A117 Inditions A118 Indition Inditio	Zener Duration N/A 24 hours 168 hour 3 cycles verse 1000 hot	see below	# Quantity all parts 64430	# Rejects see below
Nexperia SMD pac Test Cor Stress Tamb = JESD22- Bake Tar Soak Tar Reflow st MIL-STD MIL-STD	DHAM kkage nditions 25 °C A113 mb = 125 °C mb = 85 °C, RH = 85% oldering -750-1 lethod A lax, VR = 80 % of rated rev	N/A 24 hours 168 hour 3 cycles	see below	ı all parts	see below
SMD pac Test Con Test Con Tamb = JESD22- Bake Tar Soak Tar Reflow so MIL-STD M1038 M Tj = Tjm voltage MIL-STD	Radge Inditions 25 °C A113 Inb = 125 °C Inb = 85 °C, RH = 85% Indicating In	N/A 24 hours 168 hour 3 cycles	see below	ı all parts	see below
Test Consideration of the cons	nditions 25 °C A113 nb = 125 °C nb = 85 °C, RH = 85% oldering -750-1 lethod A lax, VR = 80 % of rated rev	N/A 24 hours 168 hour 3 cycles	see below	ı all parts	see below
Tamb = JESD22 Bake Tar Soak Tar Reflow so MIL-STD M1038 M Tj = Tjm voltage MIL-STD	25 °C A113 mb = 125 °C mb = 85 °C, RH = 85% oldering -750-1 lethod A lax, VR = 80 % of rated rev	N/A 24 hours 168 hour 3 cycles	see below	ı all parts	see below
Tamb = JESD22-, Bake Tar Soak Tar Reflow so MIL-STD M1038 M Tj = Tjm voltage MIL-STD	A113 mb = 125 °C mb = 85 °C, RH = 85% oldering750-1 fethod A ax, VR = 80 % of rated rev	24 hours 168 hour 3 cycles verse	rs		
Tamb = JESD22-, Bake Tar Soak Tar Reflow so MIL-STD M1038 M Tj = Tjm voltage MIL-STD	A113 mb = 125 °C mb = 85 °C, RH = 85% oldering750-1 fethod A ax, VR = 80 % of rated rev	24 hours 168 hour 3 cycles verse	rs		
JESD22-, Bake Tar Soak Tar Reflow so MIL-STD voltage MIL-STD	A113 mb = 125 °C mb = 85 °C, RH = 85% oldering750-1 fethod A ax, VR = 80 % of rated rev	24 hours 168 hour 3 cycles verse	rs		
Bake Tar Soak Tar Reflow so MIL-STD M1038 M Tj = Tjm voltage MIL-STD	mb = 125 °C mb = 85 °C, RH = 85% oldering -750-1 lethod A lax, VR = 80 % of rated rev	168 hour 3 cycles	rs	64430	0
Soak Tar Reflow so MIL-STD M1038 M Tj = Tjm voltage MIL-STD	mb = 85 °C, RH = 85% oldering -750-1 lethod A lax, VR = 80 % of rated rev	168 hour 3 cycles	rs	64430	0
Reflow so MIL-STD M1038 M Tj = Tjm voltage MIL-STD	oldering -750-1 lethod A lax, VR = 80 % of rated rev	3 cycles		64430	0
MIL-STD M1038 M ure Reverse Tj = Tjm voltage MIL-STD	-750-1 Method A Max, VR = 80 % of rated rev	verse	1514	64430	0
	Method A lax, VR = 80 % of rated rev				
ure Reverse $Tj = Tjm$ voltage MIL-STD	nax, VR = 80 % of rated rev				
voltage MIL-STD					
MIL-STD	750.1		urs 250	11400	0
		1000 1100	uis 250	11400	U
	-/50-1 lethod B				
	iax, Iz = 100% of max. dat	tachoot			
perational reverse o		1000 hou	urs 44	1920	0
,		1000 1100	ui 5 1 1	1520	
JESD22-	A104				
	Tjmax, not to exceed 150	0°C 1000 cyc	des 311	14080	0
		, .			
JESD22-	A118				
Tamb =	130 °C, RH = 85 %	OC have	211	14000	0
JESD22-	A102	96 Hours	311	14080	U
Tamb =	121 °C, RH = 100 %				
Pressure	= 205 kPa (29.7 psia)				
		1000 hou	urs 311	14080	0
		-			_
perating Life 100 °C fo	or 15000 cycles	1000 hou	urs 312	14120	0
150522	A111				
		10.5	260	0070	0
oluei Heat 200 °C =	-) (10 S	269	8070	0
	าว		10	6660	0
	Tamb = Pressure JESD22- digh Tamb = rated rev MIL-STD ton = to erating Life 100 °C f JESD22- older Heat 260 °C =	werse Bias rated reverse voltage ^[1] MIL-STD-750 Method 1037 ton = toff, devices powered to insurerating Life 100 °C for 15000 cycles JESD22-A111 older Heat 260 °C ± 5 °C	JESD22-A102 Tamb = 121 °C, RH = 100 % Pressure = 205 kPa (29.7 psia) JESD22-A101 Tamb = 85 °C, RH = 85%, VR = 80 % of everse Bias rated reverse voltage ^[1] 1000 hot MIL-STD-750 Method 1037 ton = toff, devices powered to insure Δ Tj = terating Life 100 °C for 15000 cycles 1000 hot JESD22-A111	Tamb = 121 °C, RH = 100 % Pressure = 205 kPa (29.7 psia) JESD22-A101 tigh Tamb = 85 °C, RH = 85%, VR = 80 % of rated reverse voltage ^[1] 1000 hours 311 MIL-STD-750 Method 1037 ton = toff, devices powered to insure Δ Tj = terating Life 100 °C for 15000 cycles 1000 hours 312 JESD22-A111 older Heat 260 °C ± 5 °C 10 s 269	JESD22-A102 Tamb = 121 °C, RH = 100 % Pressure = 205 kPa (29.7 psia) JESD22-A101 Tamb = 85 °C, RH = 85%, VR = 80 % of everse Bias rated reverse voltage ^[1] 1000 hours 311 14080 MIL-STD-750 Method 1037 ton = toff, devices powered to insure Δ Tj = terating Life 100 °C for 15000 cycles 1000 hours 312 14120 JESD22-A111 older Heat 260 °C ± 5 °C 10 s 269 8070

^[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 #B1) Confidence level 60%, derated to 55 °C, activation energy 0.7 eV, test time 168 to 1000 hours

Wafer Fab	Technology	Quantity	Rejects	Failure Rate (FIT)	MTTF (hrs)
Nexperia					
DHAM	Zener	11400	0	0,37	2,68E+09

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