

# Cypress Semiconductor Reliability Qualification Report

QTP# Q100269, 162903 Version \*\*

## Extended AEC-Q006 Data on FL-S 65nm MirrorBit Products SO3016 Package ASE Taiwan

Extended AEC-Q006 Data on FL-S 65nm MirrorBit Products SO3016  
Package in  
Accordance with AEC-Q006

FOR ANY QUESTIONS ON THIS REPORT, PLEASE CONTACT  
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## II. Summary of Stress Test Results

Stress Test	Stress Condition	Package Type	Sample Size	Num. of Lots	Num. of Fails	Failure Rate %	Comments
<b>Data From Qualification Q100269, 162903:</b>							
<b>HTOL (EL)</b>	(3.6V, 150°C)	SO3016 <sup>2</sup>	77	1	0	0.00	168 hours
<b>HTOL (IL)</b>	(3.6V, 150°C)	SO3016 <sup>2</sup>	77	1	0	0.00	500 hours
<b>High Temp Bake</b>	(200°C)	SO3016 <sup>2</sup>	75	1	0	0.00	350 hours
<b>ESD CDM</b>	N/A	SO3016 <sup>1</sup>	15	1	Passed 1.0kV		
<b>Preconditioning</b>	(PC1/260°C, +0°C/-5°C)	SO3016 <sup>1</sup>	77	1	Passed Jedec L3 / Jeita Rank E		
	(PC9/260°C, +0°C/-5°C)	SO3016 <sup>2</sup>	723	3	Passed Jedec L3 / Jeita Rank E		
<b>Precon+Temp Cycle</b>	(PC9/260°C, -65°C/150°C)	SO3016 <sup>2</sup>	245	3	0	0.00	500 cycles
<b>Precon+Temp Cycle (Ext.)</b>	(PC9/260°C, -65°C/150°C)	SO3016 <sup>2</sup>	240	3	0	0.00	1000 cycles
<b>Precon+HAST</b>	(PC9/260°C, Biased, 130°C/85% RH)	SO3016 <sup>2</sup>	246	3	0	0.00	96 hours
<b>Precon+HAST (Ext.)</b>	(PC9/260°C, Biased, 130°C/85% RH)	SO3016 <sup>2</sup>	241	3	0	0.00	192 hours
<b>Precon+uHAST</b>	(PC9/260°C, Unbiased, 130°C/85% RH)	SO3016 <sup>2</sup>	231	3	0	0.00	96 hours
<b>Construction Analysis</b>	N/A	SO3016 <sup>2</sup>	30	1	Passed		
<b>High Temp Bake (Ext.)</b>	(200°C)	SO3016 <sup>2</sup>	70	1	0	0.00	500 Hours

**Notes / Justification:** 1) Results from Qual Q100269, S25FL256S, CS239LS (65nm) MirrorBit in 16 Lead SOIC (10.3 x 10.3 x 2.65mm)  
 2) Results from Qual 162903, S25FL512S, CS239LS (65nm) MirrorBit in 16 Lead SOIC (10.3 x 10.3 x 2.65mm)

**Preconditioning Flows:** PC1 (Exceeds JEDEC L3 and JEITA Rank E): Bake 125°C, 24hr => Soak @ 30°C/70%RH, 216hr => 3x Reflow  
 PC9 (Accelerated JEDEC L3 / JEITA Rank E): Bake 125°C, 24hr => Soak @ 60°C/70%RH, 72hr => 3x Reflow

**Reliability Tests Performed per Specification Requirements**

Stress	Condition	Specification Reference
Construction Analysis	N/A	Internal Specifications
ESD CDM	N/A	JS002 / AEC-Q100-011
High Temp Bake	(200°C)	JESD22-A103
High Temp Bake (Ext.)	(200°C)	JESD22-A103
HTOL (EL)	(3.6V, 150°C)	JESD22-A108
HTOL (IL)	(3.6V, 150°C)	JESD22-A108
Precon+HAST	(PC9/260°C, Biased, 130°C/85% RH)	JESD22-A110
Precon+HAST (Ext.)	(PC9/260°C, Biased, 130°C/85% RH)	JESD22-A110
Precon+Temp Cycle	(PC9/260°C, -65°C/150°C)	JESD22-A104
Precon+Temp Cycle (Ext.)	(PC9/260°C, -65°C/150°C)	JESD22-A104
Precon+uHAST	(PC9/260°C, Unbiased, 130°C/85% RH)	JESD22-A118
Preconditioning	(PC1/260°C, +0°C/-5°C)	J-STD-020 / EIAJ ED-4701-100 Method 104
Preconditioning	(PC9/260°C, +0°C/-5°C)	J-STD-020 / EIAJ ED-4701-100 Method 104

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### III. Revision History

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Rev.	Issue Date	ECN#	Originator	Description
**	2/1/2018	6054247	EKNG	Initial Release.

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