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Cypress Semiconductor Package Qualification Report

**QTP# 052701 VERSION*A
September 2014**

**4-Lead LCC Package with Crystal Oscillator
(5 x 3.2mm)
Ecera-Taiwan**

**FOR ANY QUESTIONS ON THIS REPORT, PLEASE CONTACT
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PACKAGE QUALIFICATION HISTORY

QUAL REPORT	DESCRIPTION OF QUALIFICATION PURPOSE	DATE COMP.
052701	4-Lead LCC Package (5x3.2mm) with Crystal Oscillator assembled @ Ecera-Taiwan	Jan 06

MAJOR PACKAGE INFORMATION USED IN THIS QUALIFICATION	
Package Designation:	LZ04
Package Outline, Type, or Name:	4-Lead LCC Package
Mold Compound Name/Manufacturer:	NA
Mold Compound Flammability Rating:	NA
Oxygen Rating Index:	NA
Lead Frame Material:	Ceramic
Lead Finish, Composition / Thickness:	NiAu
Die Backside Preparation Method/Metallization:	Backgrinded (11mil)
Die Separation Method:	100% Saw
Die Attach Supplier:	ThreeBond
Die Attach Material:	3301F
Bond Diagram Designation	001-04422
Wire Bond Method:	Thermosonic
Wire Material/Size:	Au / 1.25mil
Thermal Resistance Theta JA °C/W:	No Data
Package Cross Section Yes/No:	NA
Assembly Process Flow:	001-03723
Name/Location of Assembly (prime) facility:	Ecera-Taiwan (ER-Taiwan)

ELECTRICAL TEST / FINISH DESCRIPTION	
Test Location:	Ecera-Taiwan (ER-Taiwan)
Fault Coverage:	100%

Note: Please contact a Cypress Representative for other packages availability.

RELIABILITY TESTS PERFORMED PER SPECIFICATION REQUIREMENT

Stress/Test	Test Condition (Temp/Bias)	Result P/F
Acoustics	J-STD-020	P
Age Bond	MIL-STD-883, Method 2011	P
Bond Pull	MIL-STD-883 – Method 2011, 90 bonds on 10 devices	P
Die Shear	MIL-STD-883, Method 2019	P
Drop Test	MIL-STD-883 - 5005, D4 75cm Height 3 times on 2mm thick stainless steel plate	P
Electrostatic Discharge Human Body Model (ESD-HBM)	2,200V JESD22, Method A114-B	P
Electrostatic Discharge Human Body Model (ESD-HBM)	2,200V MIL-STD-883, Method 3015.7	P
Electrostatic Discharge Charge Device Model (ESD-CDM)	500V JESD22-C101	P
External Visual	MIL-PRF-38535, MILSTD-883, METHOD 2009	P
Fine & Gross Leak	MIL-STD-883, Method1014	
High Temperature Operating Life/Latent Failure Rate	Dynamic Operating Condition, Vcc Max = 3.8V, 125 °C	P
High Temperature Storage	125°C, no bias	P
Internal Visual	MIL-STD-883-2014	P
Internal Water Vapor	MIL-STD-883 - 1018	P
Low Temperature Storage	-30°C /-55°C, no bias	P
Mechanical Series	MIL-STD-883 - 5005, D4	P
Mechanical Shock	JESD22-B104-C	P
Physical Dimension	MIL-STD-1835, JESD22-B100	P
Salt Atmosphere	Mil. Std. 883, Method 1009	P
Solderability	J-STD-002, JESD22-B102	P
Temperature Cycle	JEDEC22, Condition B, -55°C to 125°C	P
Thermal Series	MIL-STD-883 - 5005, D3	P
Thermal Shock	MIL-STD-883C, Method 1011	P
Resistance to Solvents	MIL-STD-883 -2015	P

Reliability Test Data

QTP #: 052701

Device	Fab Lot #	Assy Lot #	Assy Loc	Duration	Samp	Rej	Failure Mechanism
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STRESS: ACOUSTIC

CY25701FLXC (7C825701A)	2504720	610532157	TAIWN-ER	COMP	40	0	
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STRESS: AGE BOND

CY25701FLXC (7C825701A)	2504720	610532157	TAIWN-ER	COMP	6	0	
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STRESS: BOND PULL

CY25701FLXC (7C825701A)	2504720		TAIWN-ER	COMP	10	0	
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STRESS: DIE SHEAR

CY25701FLXC (7C825701A)	2504720	610532157	TAIWN-ER	COMP	20	0	
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STRESS: DROP TEST

CY25701FLXC (7C825701A)	2504720	610532157	TAIWN-ER	COMP	10	0	
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STRESS: ESD-CHARGE DEVICE MODEL, 500V

CY25701FLXC (7C825701A)	2504720		TAIWN-ER	COMP	9	0	
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STRESS: ESD-HUMAN BODY CIRCUIT PER JESD22, METHOD A114-B, 2,200V

CY25701FLXC (7C825701A)	2504720		TAIWN-ER	COMP	9	0	
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STRESS: ESD-HUMAN BODY CIRCUIT PER MIL STD 883, METHOD 3015, 2,200V

CY25701FLXC (7C825701A)	2504720		TAIWN-ER	COMP	3	0	
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STRESS: EXTERNAL VISUAL

CY25701FLXC (7C825701A)	2504720	610532157	TAIWN-ER	COMP	40	0	
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CY25701FLXC (7C825701A)	2504720		TAIWN-ER	COMP	15	0	
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STRESS: FINE & GROSS LEAK

CY25701FLXC (7C825701A)	2504720	610532157	TAIWN-ER	COMP	30	0	
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STRESS: HIGH TEMP DYNAMIC OPERATING LIFE-LATENT FAILURE RATE (125C, 3.8V, Vcc Max)

CY25701FLXC (7C825701A)	2504720		TAIWN-ER	80	645	0	
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CY25701FLXC (7C825701A)	2504720		TAIWN-ER	500	600	0	
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CY25701FLXC (7C825701A)	2504720		TAIWN-ER	1000	600	0	
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CY25701FLXC (7C825701A)	2504720	610532160	TAIWN-ER	80	646	0	
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CY25701FLXC (7C825701A)	2504720	610532160	TAIWN-ER	500	600	0	
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CY25701FLXC (7C825701A)	2504720	610532160	TAIWN-ER	1000	598	1	
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STRESS: HIGH TEMPERATURE STORAGE, 125C

CY25701FLXC (7C825701A)	2504720		TAIWN-ER	500	50	0	
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CY25701FLXC (7C825701A)	2504720		TAIWN-ER	1000	50	0	
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CY25701FLXC (7C825701A)	2504720	610532157	TAIWN-ER	1000	15	0	
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Reliability Test Data

QTP #:052701

Device	Fab Lot #	Assy Lot #	Assy Loc	Duration	Samp	Rej	Failure Mechanism
STRESS: INTERNAL VISUAL							
CY25701FLXC (7C825701A)	2504720		TAIWN-ER	COMP	5	0	
STRESS: INTERNAL WATER VAPOR							
CY25701FLXC (7C825701A)	2504720	610553273	TAIWN-ER	COMP	3	0	
CY25701FLXC (7C825701A)	2504720		TAIWN-ER	COMP	3	0	
STRESS: LOW TEMPERATURE STORAGE, -30C							
CY25701FLXC (7C825701A)	2504720		TAIWN-ER	500	50	0	
CY25701FLXC (7C825701A)	2504720		TAIWN-ER	1000	50	0	
STRESS: LOW TEMPERATURE STORAGE, -55C							
CY25701FLXC (7C825701A)	2504720	610532157	TAIWN-ER	1000	15	0	
STRESS: MECHANICAL SERIES							
CY25701FLXC (7C825701A)	2504720	610553273	TAIWN-ER	COMP	16	0	
CY25701FLXC (7C825701A)	2504720		TAIWN-ER	COMP	15	0	
STRESS: MECHANICAL SHOCK							
CY25701FLXC (7C825701A)	2504720	610532157	TAIWN-ER	COMP	10	0	
STRESS: PHYSICAL DIMENSION							
CY25701FLXC (7C825701A)	2504720	610532157	TAIWN-ER	COMP	40	0	
CY25701FLXC (7C825701A)	2504720		TAIWN-ER	COMP	5	0	
STRESS: RESISTANCE TO SOLVENTS							
CY25701FLXC (7C825701A)	2504720	610532157	TAIWN-ER	COMP	15	0	
STRESS: SALT ATMOSPHERE							
CY25701FLXC (7C825701A)	2504720		TAIWN-ER	COMP	15	0	
STRESS: SOLDERABILITY							
CY25701FLXC (7C825701A)	2504720	610532157	TAIWN-ER	COMP	15	0	
CY25701FLXC (7C825701A)	2504720		TAIWN-ER	COMP	3	0	
STRESS: THERMAL SERIES							
CY25701FLXC (7C825701A)	2504720	610553273	TAIWN-ER	COMP	16	0	
CY25701FLXC (7C825701A)	2504720		TAIWN-ER	COMP	15	0	
STRESS: THERMAL SHOCK							
CY25701FLXC (7C825701A)	2504720	610532157	TAIWN-ER	100	15	0	



Reliability Test Data

QTP #: 052701

Device	Fab Lot #	Assy Lot #	Assy Loc	Duration	Samp	Rej	Failure Mechanism
STRESS: TC CONDITION B, -55C TO 125C							
CY25701FLXC (7C825701A)	2504720		TAIWN-ER	100	50	0	
CY25701FLXC (7C825701A)	2504720		TAIWN-ER	1000	50	0	
CY25701FLXC (7C825701A)	2504720	610532160	TAIWN-ER	500	50	0	
CY25701FLXC (7C825701A)	2504720	610532160	TAIWN-ER	1000	50	0	
STRESS: VIBRATION							
CY25701FLXC (7C825701A)	2504720	610532157	TAIWN-ER	COMP	10	0	

Document History Page

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Rev.	ECN No.	Orig. of Change	Description of Change
**	4142691	HSTO	Initial Spec Release Initiate report as per memo LGQ-445.
*A	4516853	HSTO	Align qualification report based on the new template in the front page

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