Please note that Cypress is an Infineon Technologies Company.
The document following this cover page is marked as “Cypress” document as this is the company that originally developed the product. Please note that Infineon will continue to offer the product to new and existing customers as part of the Infineon product portfolio.

Continuity of document content
The fact that Infineon offers the following product as part of the Infineon product portfolio does not lead to any changes to this document. Future revisions will occur when appropriate, and any changes will be set out on the document history page.

Continuity of ordering part numbers
Infineon continues to support existing part numbers. Please continue to use the ordering part numbers listed in the datasheet for ordering.

Cypress Semiconductor
Product Qualification Report

QTP# 064302 VERSION*C
June, 2014

XO LN FLEXO DEVICE FAMILY L8C-3R TECHNOLOGY, FAB 4	
CY2VC521	Low Noise LVDS Clock Generator with VCXO
CY2VC511	27 MHZ Clock Generator with VCXO
CY2XP01	Fibre Channel Crystal to LVPECL Clock Generator
CY2XP11	106.25MHz / 100MHz Crystal to LVPECL Clock Generator
CY2XP21	125 MHZ LVPECL Clock Generator
CY2XP22/24/41/51	Crystal to LVPECL Clock Generator
CY2XP31	312.5 MHZ LVPECL Clock Generator
CY2XP81	Crystal to LVPECL Clock Generator with Frequency Margining – I2C Control
CY2XP91	Crystal to LVPECL Clock Generator with Frequency Margining – Pin Control
CY2XL01	Fibre Channel Crystal to LVDS Clock Generator
CY2XL11	100 MHZ LVDS Clock Generator
CY2XL22/23/31/51	Crystal to LVDS Clock Generator
CY2XL71	Sata/SAS Crystal to LVDS Clock Generator
CY2X013	LVDS Crystal Oscillator (XO)
CY2X012	Low Jitter Crystal Oscillator
CY2X014	Low Jitter LVPECL Crystal Oscillator

XO LN FLEXO DEVICE FAMILY L8C-3R TECHNOLOGY, FAB 4	
CY2XF23	**High Performance LVDS Oscillator With Frequency Margining - I2C Control**
CY2XF24	**High Performance LVPECL Oscillator With Frequency Margining - I2C Control**
CY2XF32	**High Performance CMOS Oscillator With Frequency Margining - Pin Control**
CY2XF33	**High Performance LVDS Oscillator With Frequency Margining - Pin Control**
CY2XF34	**High Performance LVPECL Oscillator With Frequency Margining - Pin Control**
CY2V014	**LVPECL Voltage Controlled Crystal Oscillator (VCXO)**
CY2V013	**Low Jitter LVDS Voltage Controlled Crystal Oscillator**
CY2V012	**Voltage Controlled Crystal Oscillator**
CY2XP61	**125 MHZ LVPECL Clock Generator**
CY2X0147	**Low jitter LVPECL crystal oscillator**
CY2X0137	**High performance LVDS crystal oscillator**
CY2XF327	**High performance CMOS crystal oscillator**

FOR ANY QUESTIONS ON THIS REPORT, PLEASE CONTACT
reliability@cypress.com or via a CYLINK CRM CASE

Prepared By:
Josephine Pineda
Reliability Engineer

Reviewed By:
Zhaomin Ji
Reliability Manager

Approved By:
Richard Oshiro
Reliability Director

PRODUCT QUALIFICATION HISTORY

Qual Report	Description of Qualification Purpose	Date Comp
042106	7C82877A DDR2 PLL New Device family on New C8Q-3R Technology, Fab4	Jan 05
053301	Qualify L8C-3R Technology Derivative of the C8 Technology at Fab4 using CY5077 Device	Sep 06
064302	Qualify XO LN Flexo Product Family on L8C-3R process at Fab4	Jun 09
091601	Qualification of Flexo LN CG PKG Derivatives (7C851012A & 7C851202A) in L8C-3R process at CMI	Jul 09
093101	Qualification of 7C851203A and 7C851204A Bond Option of Flexo Device	Aug 09
092803	Qualification of 4-Layer Minor Design Change on Flexo Device 7C85100A/ 110A/120A L8C-3R fabricated in Fab4	Sep 09
120105	Qualification of 24L QFN new package option of 7C851300A FLEXO Die (7C85120A, base die: 7C85100A), L8C-3R Technology in Fab 4.	June 13

PRODUCT DESCRIPTION (for qualification)	
Qualification Purpose: Qualify XO LN Flexo Product Family on L8C-3R process at Fab4	
Marketing Part #:	CY2VC521xx, CY2VC511xx, CY2XP01xx, CY2XP11xx, CY2XP21xx, CY2XP22xx, CY2XP24xx, CY2XP31xx, CY2XP41xx, CY2XP51xx, CY2XP81xx, CY2XP91xx, CY2XL01xx, CY2XL11xx, CY2XL22xx, CY2XL23xx, CY2XL31xx, CY2XL51xx, CY2XL71xx, CY2X013xx, CY2X012xx, CY2X014xx, CY2XF23xx, CY2XF24xx, CY2XF32xx, CY2XF33xx, CY2XF34xx, CY2V014xx, CY2V013xx, CY2V012xx, CY2XP61xx, CY2X0147xx, CY2X0137xx, CY2XF327xx
Device Description:	Low Noise XO/VCXO/VCO Crystal Oscillator and Clock Generator
Cypress Division:	Cypress Semiconductor Corporation – MPD

TECHNOLOGY/FAB PROCESS DESCRIPTION			
Number of Metal Layers:	4	Metal Composition:	Metal 1: 100A Ti/3,200A Al /300A TiW Metal 2: 150A Ti/4,230A Al /300A TiW Metal 3: 150A Ti/4,230A Al /300A TiW Metal 4: 150A Ti/8,000A Al /300A TiW
Passivation Type and Thickness:			TEOS 1,000A / 7,000A Si_3N_4
Generic Process Technology/Design Rule (µ-drawn):			CMOS, 0.13 µm
Gate Oxide Material/Thickness (MOS):			SiO_2 DGOX 32/55A
Name/Location of Die Fab (prime) Facility:			CMI / Bloomington MN
Die Fab Line ID/Wafer Process ID:			Fab4, L8C-3R

PACKAGE AVAILABILITY

PACKAGE	ASSEMBLY FACILITY SITE
16-Pin TSSOP	**CML-RA**
8-Pin TSSOP	**OSE-TAIWAN**
6-Pin (5x3.2mm/5x7mm) / 4-Pin LCC	**ECERA-TAIWAN**
24-Pin QFN	**ASE-TAIWAN**

MAJOR PACKAGE INFORMATION USED IN THIS QUALIFICATION	
Package Designation:	ZZ16, ZZ08
Package Outline, Type, or Name:	16-Lead Thin Shrunk Small Outline Package (TSSOP) 8-Lead Thin Shrunk Small Outline Package (TSSOP)
Mold Compound Name/Manufacturer:	CEL 9200 / Hitachi, CEL 9200HF / Hitachi
Mold Compound Flammability Rating:	UL-94 V-0
Mold Compound Alpha Emission Rate	N/A
Oxygen Rating Index:	N/A
Lead Frame Material:	Copper
Lead Finish, Composition / Thickness:	NiPdAu
Die Backside Preparation Method/Metallization:	Backgrind
Die Separation Method:	100% Saw
Die Attach Supplier:	Henkel , Hitachi
Die Attach Material:	QMI 509, 4900G
Die Attach Method:	Epoxy
Bond Diagram Designation:	001-13744
Wire Bond Method:	Thermosonic
Wire Material/Size:	Au, 1.0mil, Au, 1.2mil
Thermal Resistance Theta JA °C/W:	117°C/W, 135°C/W
Package Cross Section Yes/No:	N/A
Assembly Process Flow:	11-20028, 001-04375
Name/Location of Assembly (prime) facility:	CML-RA, OSE-T
MSL Level	3
Reflow Profile	260C

ELECTRICAL TEST / FINISH DESCRIPTION	
Test Location:	KYEC,Taiwan, CML-RA
Fault Coverage	100%

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

MAJOR PACKAGE INFORMATION USED IN THIS QUALIFICATION	
Package Designation:	LZ04, LZ06
Package Outline, Type, or Name:	4 - Leadless Chip Carrier (LCC) 6 – Leadless Chip Carrier (LCC)
Mold Compound Name/Manufacturer:	N/A
Mold Compound Flammability Rating:	N/A
Oxygen Rating Index:	N/A
Lead Frame Material:	N/A
Lead Finish, Composition / Thickness:	Ni / Au
Die Backside Preparation Method/Metallization:	Backgrind
Die Separation Method:	100% Saw
Die Attach Supplier:	Threebond
Die Attach Material:	3301F
Die Attach Method:	Epoxy
Bond Diagram Designation:	001-14533
Wire Bond Method:	Thermosonic
Wire Material/Size:	Au, 1.0mil
Thermal Resistance Theta JA °C/W:	66°C/W / 62 °C/W
Package Cross Section Yes/No:	N/A
Assembly Process Flow:	001-07965
Name/Location of Assembly (prime) facility:	eCERA
MSL Level	N/A
Reflow Profile	N/A

ELECTRICAL TEST / FINISH DESCRIPTION	
Test Location:	eCERA
Fault Coverage:	100%

RELIABILITY TESTS PERFORMED PER SPECIFICATION REQUIREMENTS

Stress/Test	Test Condition (Temp/Bias)	Result P/F
High Temperature Operating Life Early Failure Rate	Dynamic Operating Condition, Vcc Max=3.8V, 125°C Dynamic Operating Condition, Vcc Max=2.35V, 150°C Dynamic Operating Condition, Vcc Max=2.35V, 125°C Dynamic Operating Condition, Vcc Max=3.96V, 125°C JESD22-A108	P
High Temperature Operating Life Latent Failure Rate	Dynamic Operating Condition, Vcc Max=3.8V, 125°C Dynamic Operating Condition, Vcc Max=2.35V, 150°C Dynamic Operating Condition, Vcc Max=2.35V, 125°C JESD22-A108	P
Long Life Verification	Dynamic Operating Condition, Vcc Max=2.35V, 150°C JESD22-A108	P
Low Temperature Operating Life	Dynamic Operating Condition, Vcc = 4.3V, -30 C, f = 4MHz JESD22-A108	P
High Temperature Steady State life	Static Operating Condition,125°C, 2.35V/3.63V, Vcc Max JESD22-A108	P
High Accelerated Saturation Test (HAST)	JEDEC STD 22-A110: 130°C, 85%RH, 1.8V/2.35V/3.63V Precondition: JESD22 Moisture Sensitivity Level (192 Hrs., 30°C, 60% RH, 260C Reflow)	P
Temperature Cycle	MIL-STD-883, Method 1010, Condition C, -65°C to 150°C Precondition: JESD22 Moisture Sensitivity Level (192 Hrs., 30°C, 60% RH, 260C Reflow)	P
Pressure Cooker	JESD22-A102, 121°C, 100%RH, 15 PSIG Precondition: JESD22 Moisture Sensitivity Level (192 Hrs., 30°C, 60% RH, 260C Reflow)	P
Electrostatic Discharge Human Body Model (ESD-HBM)	2200V MIL-STD-883, Method 3015.7	P
Electrostatic Discharge Human Body Model (ESD-HBM)	2200V JESD22, Method A114	P
Electrostatic Discharge Charge Device Model (ESD-CDM)	500V, JESD22-C101	P
Age Bond Strength	200C, 4hrs MIL-STD-883, Method 883-2011	P
Ball Shear	JESD22-B116, Cpk : 1.33, Ppk : 1.66	P
Acoustic Microscopy	J-STD-020 Precondition: JESD22 Moisture Sensitivity Level (192 Hrs., 30°C, 60% RH, 260C Reflow)	P
Dynamic Latch-up	6.9V, In accordance with JESD78	P
High Temperature Storage	JESD22-A103:150, no bias	P
Latch up Sensitivity	125C, ± 200mA/300mA, In accordance with JESD78 85C, ± 140mA/180mA, In accordance with JESD78	P

RELIABILITY FAILURE RATE SUMMARY

Stress/Test	Device Tested/ Device Hours	# Fails	Activation Energy	Thermal[3] A.F	Failure Rate
High Temperature Operating Life Early Failure Rate[1]	3837 Devices	0	N/A	N/A	0 PPM
High Temperature Operating Life[1,2] Long Term Failure Rate (150C)	180,000 DHRs	0	0 .7	170	12 FIT
High Temperature Operating Life[1,2] Long Term Failure Rate (125C)	860,000 DHRs	0	0.7	55	

[1] Assuming an ambient temperature of 55°C and a junction temperature rise of 15°C.
[2] Chi-squared 60% estimations used to calculate the failure rate.
[3] Thermal Acceleration Factor is calculated from the Arrhenius equation

$$AF = \exp\left[\frac{E_A}{k}\left[\frac{1}{T_2} - \frac{1}{T_1}\right]\right]$$

where:

E_A =The Activation Energy of the defect mechanism.
K = Boltzmann's constant = 8.62×10^{-5} eV/Kelvin.
T_1 is the junction temperature of the device under stress and T_2 is the junction temperature of the device at use conditions.

Reliability Test Data

QTP #: 042106

Device	Fab Lot #	Assy Lot #	Assy Loc	Duration	Samp	Rej	Failure Mechanism
STRESS: ACOUSTIC-MSL3							
CY68013A (7C681000A)	4416666	*610434406*	TAIWN-G	COMP	17	0	
CY2SSTU877 (7C87741A)	4416666B	*H20592*	TAIWN-G	COMP	16	0	
CY68013A (7C681000A)	4416701	*610434407/8*	TAIWN-G	COMP	17	0	
CY2SSTU877 (7C87740A)	4417143	*H20549*	TAIWN-G	COMP	16	0	
STRESS: AGE BOND STRENGTH							
CY68013A (7C681000A)	4416666	*610434406*	TAIWN-G	COMP	5	0	
CY68013A (7C682001A)	4416701	*610437657*	TAIWN-G	COMP	5	0	
CY2SSTU877 (7C87740A)	4417143	*H20549*	TAIWN-G	COMP	3	0	
STRESS: BALL SHEAR							
CY68013A (7C682001A)	4416701	*610437657*	TAIWN-G	COMP	5	0	
STRESS: DYNAMIC LATCH-UP TESTING (6.9V)							
CY68013A (7C682001A)	4416701	*610437657*	TAIWN-G	COMP	3	0	
STRESS: ESD-CHARGE DEVICE MODEL (500V)							
CY68013A (7C682001A)	4416666	*610437607*	TAIWN-G	COMP	9	0	
CY68013A (7C682000A)	4416666	*610437102*	TAIWN-G	COMP	9	0	
CY68013A (7C681000A)	4416701	*610434407/8*	TAIWN-G	COMP	9	0	
CY68013A (7C682000A)	4416701	*610437702*	TAIWN-G	COMP	9	0	
CY2SSTU877 (7C87740A)	4417143	*H20549*	TAIWN-G	COMP	9	0	
STRESS: ESD-HUMAN BODY CIRCUIT PER JESD22, METHOD A114, 2200V							
CY68013A (7C682001A)	4416666	*610437607*	TAIWN-G	COMP	9	0	
CY68013A (7C681000A)	4416701	*610434407/8*	TAIWN-G	COMP	9	0	
CY2SSTU877 (7C82877A)	4413035	*H19747*	TAIWN-G	COMP	9	0	
CY2SSTU877 (7C87740A)	4417143	*H20549*	TAIWN-G	COMP	9	0	
STRESS: ESD-HUMAN BODY CIRCUIT PER MIL STD 883, METHOD 3015, 2200V							
CY68013A (7C682001A)	4416666	*610437607*	TAIWN-G	COMP	3	0	
CY68013A (7C681000A)	4416701	*610434407/8*	TAIWN-G	COMP	3	0	
CY2SSTU877 (7C82877A)	4413035	*H19747*	TAIWN-G	COMP	3	0	
CY2SSTU877 (7C87740A)	4417143	*H20549*	TAIWN-G	COMP	3	0	

Reliability Test Data

QTP #: 042106

Device	Fab Lot #	Assy Lot #	Assy Loc	Duration	Samp	Rej	Failure Mechanism
STRESS: HIGH TEMP STEADY STATE LIFE TEST (150C, 3.63V)							
CY68013A (7C682005A)	4416701	*610438121*	TAIWN-G	80	80	0	
CY68013A (7C682005A)	4416701	*610438121*	TAIWN-G	168	80	0	
STRESS: HIGH TEMP DYNAMIC OPERATING LIFE-EARLY FAILURE RATE (125C, 3.8V, Vcc Max)							
CY68013A (7C682001A)	4416666	*610437607*	TAIWN-G	96	499	0	
CY68013A (7C682005A)	4417143	*610443845*	TAIWN-G	96	514	0	
STRESS: HIGH TEMP DYNAMIC OPERATING LIFE-LATENT FAILURE RATE (125C, 3.8V, Vcc Max)							
CY68013A (7C682001A)	4416666	*610437607*	TAIWN-G	168	200	0	
CY68013A (7C682001A)	4416666	*610437607*	TAIWN-G	1000	194	0	
CY68013A (7C682005A)	4417143	*610443845*	TAIWN-G	168	208	0	
CY68013A (7C682005A)	4417143	*610443845*	TAIWN-G	1000	208	0	
STRESS: HIGH TEMP DYNAMIC OPERATING LIFE-EARLY FAILURE RATE (125C, 2.35V, Vcc Max)							
CY2SSTU877 (7C87741A)	4416666B	*H20592*	TAIWN-G	96	276	0	
CY2SSTU877 (7C82877A)	4416701	*H20501*	TAIWN-G	96	126	0	
CY2SSTU877 (7C87741A)	4416701	*H20500*	TAIWN-G	96	89	0	
CY2SSTU877 (7C87740A)	4416791B	*H20536*	TAIWN-G	96	169	0	
CY2SSTU877 (7C87741A)	4417975	*H20583*	TAIWN-G	96	304	0	
CY2SSTU877 (7C87741A)	4419587	*H20650*	TAIWN-G	96	500	0	
STRESS: HIGH TEMP DYNAMIC OPERATING LIFE-LATENT FAILURE RATE (125C, 3.8V, Vcc Max)							
CY2SSTU877 (7C87741A)	4416666B	*H20592*	TAIWN-G	1000	253	0	
CY2SSTU877 (7C87740A)	4417143	*H20549*	TAIWN-G	168	150	0	
CY2SSTU877 (7C87740A)	4417143	*H20549*	TAIWN-G	1000	150	0	
STRESS: HI-ACCEL SATURATION TEST (130C, 85%RH, 3.63V), PRE COND 192 HR, 30C/60%RH, MSL3							
CY68013A (7C682001A)	4416666	*610437607*	TAIWN-G	128	47	0	
CY68013A (7C682001A)	4416666	*610437607*	TAIWN-G	256	47	0	
CY68013A (7C682000A)	4416701	*610437702*	TAIWN-G	128	47	0	
CY68013A (7C682000A)	4416701	*610437702*	TAIWN-G	256	45	0	
STRESS: HI-ACCEL SATURATION TEST (130C, 85%RH, 1.8V), PRE COND 192 HR, 30C/60%RH, MSL3							
CY2SSTU877 (7C87741A)	4417975	*H20583*	TAIWN-G	128	43	0	

Reliability Test Data

QTP #: 042106

Device	Fab Lot #	Assy Lot #	Assy Loc	Duration	Samp	Rej	Failure Mechanism
STRESS: LOW TEMPERATURE OPERATING LIFE (-30C, 4.3V)							
CY68013A (7C682005A)	4416701	*610438121*	TAIWN-G	500	80	0	
STRESS: STATIC LATCH-UP TESTING (125C, 5.5V, ±300mA)							
CY2SSTU877 (7C82877A)	4413035	*H19747*	TAIWN-G	COMP	3	0	
CY2SSTU877 (7C87740A)	4417143	*H20549*	TAIWN-G	COMP	3	0	
STRESS: STATIC LATCH-UP TESTING (125C, 6.5V, ±300mA)							
CY68013A (7C682001A)	4416666	*610437607*	TAIWN-G	COMP	3	0	
STRESS: STATIC LATCH-UP TESTING (125C, 7.5V, ±300mA)							
CY68013A (7C682001A)	4416701	*610437657*	TAIWN-G	COMP	3	0	
STRESS: PRESSURE COOKER TEST (121C, 100%RH), 15 Psig, PRE COND 192 HR, 30C/60%RH, MSL3							
CY68013A (7C681000A)	4416666	*610434406*	TAIWN-G	168	50	0	
CY68013A (7C681000A)	4416666	*610434406*	TAIWN-G	288	50	0	
CY68013A (7C681000A)	4416701	*610434407/8*	TAIWN-G	168	50	0	
CY68013A (7C681000A)	4416701	*610434407/8*	TAIWN-G	288	50	0	
CY2SSTU877 (7C82877A)	4413035	*H19747*	TAIWN-G	168	47	0	
CY2SSTU877 (7C82877A)	4413035	*H19747*	TAIWN-G	288	47	0	
CY2SSTU877 (7C87740A)	4417143	*H20549*	TAIWN-G	168	45	0	
CY2SSTU877 (7C87740A)	4417143	*H20549*	TAIWN-G	288	45	0	
STRESS: TC COND. C -65C TO 150C, PRE COND 192 HRS, 30C/60%RH, MSL3							
CY68013A (7C681000A)	4416666	*610434406*	TAIWN-G	300	50	0	
CY68013A (7C681000A)	4416666	*610434406*	TAIWN-G	500	50	0	
CY68013A (7C681000A)	4416666	*610434406*	TAIWN-G	1000	50	0	
CY68013A (7C681000A)	4416701	*610434407/8*	TAIWN-G	168	50	0	
CY68013A (7C681000A)	4416701	*610434407/8*	TAIWN-G	500	50	0	
CY68013A (7C681000A)	4416701	*610434407/8*	TAIWN-G	1000	50	0	
CY2SSTU877 (7C82877A)	4413035	*H19747*	TAIWN-G	300	46	0	
CY2SSTU877 (7C82877A)	4413035	*H19747*	TAIWN-G	500	45	0	
CY2SSTU877 (7C82877A)	4413035	*H19747*	TAIWN-G	1000	45	0	
CY2SSTU877 (7C87740A)	4417143	H20549	TAIWN-G	300	45	0	

Reliability Test Data

QTP #: 042106

Device	Fab Lot #	Assy Lot #	Assy Loc	Duration	Samp	Rej	Failure Mechanism
STRESS: TC COND. C -65C TO 150C, PRE COND 192 HRS, 30C/60%RH, MSL3 (CONTINUATION)							
CY2SSTU877 (7C87740A)	4417143	*H20549*	TAIWN-G	500	45	0	
CY2SSTU877 (7C87740A)	4417143	*H20549*	TAIWN-G	1000	45	0	
STRESS: HIGH TEMPERATURE STORAGE, 150C, no bias							
CY68013A (7C681000A)	4416701	*610434407/8*	TAIWN-G	500	50	0	
CY68013A (7C681000A)	4416701	*610434407/8*	TAIWN-G	1000	50	0	
CY2SSTU877 (7C87740A)	4417143	*H20549*	TAIWN-G	500	45	0	
CY2SSTU877 (7C87740A)	4417143	*H20549*	TAIWN-G	1000	45	0	

Reliability Test Data

QTP #: 053301

Device	Fab Lot #	Assy Lot #	Assy Loc	Duration	Samp	Rej	Failure Mechanism
STRESS: ACOUSTIC-MSL3							
CY5077 (7C850003A)	4538565	*610555083*	CML-RA	COMP	16	0	
CY5077 (7C850003A)	4550443	*61033232/3/915*	PHIL-M	COMP	15	0	
CY5077 (7C850003A)	4615715	*610637084*	PHIL-M	COMP	15	0	
STRESS: DYNAMIC LATCH-UP, 5.0V							
CY5077 (7C850003A)				COMP	2	0	
STRESS: DYNAMIC LATCH-UP, 6.25V							
CY5077 (7C850003A)				COMP	2	0	
STRESS: ESD-CHARGE DEVICE MODEL (500V)							
CY5077 (7C850003A)	4538565	*610555083*	CML-RA	COMP	9	0	
CY5077 (7C850003A)	4550443	*61033232/3/915*	PHIL-M	COMP	9	0	
CY5077 (7C850003A)	4615715	*610637084*	PHIL-M	COMP	9	0	
STRESS: ESD-HUMAN BODY CIRCUIT PER JESD22, METHOD A114, 2200V							
CY5077 (7C850003A)	4538565	*610555083*	CML-RA	COMP	9	0	
CY5077 (7C850003A)	4550443	*61033232/3/915*	PHIL-M	COMP	9	0	
CY5077 (7C850003A)	4615715	*610637084*	PHIL-M	COMP	3	0	
STRESS: ESD-HUMAN BODY CIRCUIT PER MIL STD 883, METHOD 3015, 2200V							
CY5077 (7C850003A)	4538565	*610555083*	CML-RA	COMP	3	0	
CY5077 (7C850003A)	4550443	*61033232/3/915*	PHIL-M	COMP	3	0	
CY5077 (7C850003A)	4615715	*610637084*	PHIL-M	COMP	3	0	
STRESS: HIGH TEMP DYNAMIC OPERATING LIFE-EARLY FAILURE RATE (150C, 2.35V, Vcc Max)							
CY5077 (7C850003A)	4538565	*610555083*	CML-RA	48	519	0	
CY5077 (7C850003A)	4550443	*61033232/3/915*	PHIL-M	48	1061	0	
CY5077 (7C850003A)	4615715	*610637084*	PHIL-M	48	500	0	
STRESS: HIGH TEMP STEADY STATE LIFE TEST (150C, 2.35V)							
CY5077 (7C850003A)	4538565	*610555083*	CML-RA	80	79	0	
CY5077 (7C850003A)	4538565	*610555083*	CML-RA	168	79	0	

Reliability Test Data

QTP #: 053301

Device	Fab Lot #	Assy Lot #	Assy Loc	Duration	Samp	Rej	Failure Mechanism
STRESS: HIGH TEMP DYNAMIC OPERATING LIFE-LATENT FAILURE RATE (150C, 2.35V, Vcc Max)							
CY5077 (7C850003A)	4538565	*610555083*	CML-RA	80	120	0	
CY5077 (7C850003A)	4538565	*610555083*	CML-RA	500	120	0	
CY5077 (7C850003A)	4550443	*61033232/3/915*	PHIL-M	80	120	0	
CY5077 (7C850003A)	4550443	*61033232/3/915*	PHIL-M	500	120	0	
CY5077 (7C850003A)	4615715	*610637084*	PHIL-M	80	120	0	
CY5077 (7C850003A)	4615715	*610637084*	PHIL-M	500	120	0	
STRESS: LONG LIFE VERIFICATION TEST (150C, 2.35V, Vcc Max)							
CY5077 (7C850003A)	4538565	*610555083*	CML-RA	1000	119	0	
STRESS: HI-ACCEL SATURATION TEST (130C, 85%RH, 2.35V), PRE COND 192 HR, 30C/60%RH, MSL3							
CY5077 (7C850003A)	4538565	*610555083*	CML-RA	128	48	0	
CY5077 (7C850003A)	4550443	*61033232/3/915*	PHIL-M	128	48	0	
CY5077 (7C850003A)	4550443	*61033232/3/915*	PHIL-M	256	47	0	
STRESS: HIGH TEMPERATURE STORAGE, 150C, no bias							
CY5077 (7C850003A)	4550443	*61033232/3/915*	PHIL-M	500	50	0	
CY5077 (7C850003A)	4550443	*61033232/3/915*	PHIL-M	1000	50	0	
STRESS: STATIC LATCH-UP TESTING (125C, 3.0V, ±200mA), 1.8V Option							
CY5077 (7C850003A)	4538565	*610555083*	CML-RA	COMP	3	0	
CY5077 (7C850003A)	4550443	*61033232/3/915*	PHIL-M	COMP	3	0	
CY5077 (7C850003A)	4615715	*610637084*	PHIL-M	COMP	3	0	
STRESS: STATIC LATCH-UP TESTING (125C, 6.5V, ±200mA), 3.3V Option							
CY5077 (7C850003A)	4538565	*610555083*	CML-RA	COMP	3	0	
STRESS: STATIC LATCH-UP TESTING (125C, 5.4V, ±200mA), 3.3V Option							
CY5077 (7C850003A)	4550443	*61033232/3/915*	PHIL-M	COMP	3	0	
CY5077 (7C850003A)	4615715	*610637084*	PHIL-M	COMP	3	0	

Reliability Test Data

QTP #: 053301

Device	Fab Lot #	Assy Lot #	Assy Loc	Duration	Samp	Rej	Failure Mechanism
STRESS: TC COND. C -65C TO 150C, PRE COND 192 HRS, 30C/60%RH, MSL3							
CY5077 (7C850003A)	4538565	*610555083*	CML-RA	300	50	0	
CY5077 (7C850003A)	4538565	*610555083*	CML-RA	500	50	0	
CY5077 (7C850003A)	4538565	*610555083*	CML-RA	1000	50	0	
CY5077 (7C850003A)	4550443	*61033232/3/915*	PHIL-M	300	50	0	
CY5077 (7C850003A)	4550443	*61033232/3/915*	PHIL-M	500	50	0	
CY5077 (7C850003A)	4550443	*61033232/3/915*	PHIL-M	1000	50	0	
CY5077 (7C850003A)	4615715	*610637084*	PHIL-M	300	49	0	
CY5077 (7C850003A)	4615715	*610637084*	PHIL-M	500	49	0	
CY5077 (7C850003A)	4615715	*610637084*	PHIL-M	1000	48	0	

Reliability Test Data

QTP #: 064302

Device	Fab Lot #	Assy Lot #	Assy Loc	Duration	Samp	Rej	Failure Mechanism
STRESS: ESD-CHARGE DEVICE MODEL (500V)							
CY2VC521ZXC (7C851101AC)	4803399	*610820272/270/271*	CML-RA	COMP	9	0	
CY2X012FLX (7C851001A)	4843328	*610853236*	ER	COMP	9	0	
CY2V0122FLXC (7C851003A)	4843328	*610853238*	ER	COMP	9	0	
CY2V013FLXI (7C851004A)	4843328	*610853239*	ER	COMP	9	0	
CY2X014FLXC (7C851002A)	4843328	*610853237*	ER	COMP	9	0	
CY2VC521ZXC-2 (7C851101A)	4903174	*610906515/16*	ER	COMP	9	0	
CY2VC511ZXC (7C851100A)	4903174	*610906511/12/13*	ER	COMP	9	0	
CY2XP31ZXI (7C851200A)	4903174	*610908073/75/77*	T-Taiwan	COMP	9	0	
CY2XL11ZXC (7C851201A)	4903174	*610908081/82/83*	T-Taiwan	COMP	9	0	
CY2X014FLXC (7C851002A)	4903174	*610906619*	ER	COMP	9	0	
CY2V013FLXI (7C851004A)	4903174	*610906625*	ER	COMP	9	0	
CY2V012FLXI (7C851003A)	4903174	*610906623*	ER	COMP	9	0	
CY2X012FLXC (7C851001A)	4903174	*610906621*	ER	COMP	9	0	
CY2VC511ZXC (7C851100A)	4803399	*610820266/265/263*	CML-RA	COMP	9	0	
CY2VC511ZXC (7C851001A)	4803399	*610818852*	ER	COMP	9	0	
CY2X014FLXCT (7C851002A)	4803399	*610818855*	ER	COMP	9	0	
CY2V012FLXCT (7C851003A)	4803399	*610818854*	ER	COMP	9	0	
CY2V013FLXIT (7C851004A)	4803399	*610818851*	ER	COMP	9	0	
CY2XP31ZXC (7C851010A)	4803399	*610818851*	ER	COMP	9	0	
STRESS: ESD-HUMAN BODY CIRCUIT PER JESD22, METHOD A114, 2200V							
CY2VC521ZXC (7C851101AC)	4803399	*610820272/270/271*	CML-RA	COMP	8	0	
CY2X012FLX (7C851001A)	4843328	*610853236*	ER	COMP	8	0	
CY2V0122FLXC (7C851003A)	4843328	*610853238*	ER	COMP	8	0	
CY2V013FLXI (7C851004A)	4843328	*610853239*	ER	COMP	8	0	
CY2X014FLXC (7C851002A)	4843328	*610853237*	ER	COMP	8	0	
CY2VC521ZXC-2 (7C851101A)	4903174	*610906515/16*	ER	COMP	8	0	
CY2VC511ZXC (7C851100A)	4903174	*610906511/12/13*	ER	COMP	8	0	
CY2XP31ZXI (7C851200A)	4903174	*610908073/75/77*	T-Taiwan	COMP	8	0	
CY2XL11ZXC (7C851201A)	4903174	*610908081/82/83*	T-Taiwan	COMP	8	0	

Reliability Test Data

QTP #: 064302

Device	Fab Lot #	Assy Lot #	Assy Loc	Duration	Samp	Rej	Failure Mechanism
STRESS: ESD-HUMAN BODY CIRCUIT PER JESD22, METHOD A114, 2200V (CONTINUATION)							
CY2X014FLXC (7C851002A)	4903174	*610906619*	ER	COMP	8	0	
CY2V013FLXI (7C851004A)	4903174	*610906625*	ER	COMP	8	0	
CY2V012FLXI (7C851003A)	4903174	*610906623*	ER	COMP	8	0	
CY2X012FLXC (7C851001A)	4903174	*610906621*	ER	COMP	8	0	
CY2VC511ZXC (7C851100A)	4803399	*610820266/265/263*	CML-RA	COMP	8	0	
CY2VC511ZXC (7C851001A)	4803399	*610818852*	ER	COMP	8	0	
CY2X014FLXCT (7C851002A)	4803399	*610818855*	ER	COMP	8	0	
CY2V012FLXCT (7C851003A)	4803399	*610818854*	ER	COMP	8	0	
CY2V013FLXIT (7C851004A)	4803399	*610818851*	ER	COMP	8	0	
CY2XP31ZXC (7C851010A)	4803399	*610818851*	ER	COMP	8	0	
STRESS: HIGH TEMP DYNAMIC OPERATING LIFE-LATENT FAILURE RATE (125C, 2.35V, Vcc Max)							
CY2FLEXO-LV (7C851009A)	4903174	*610906225/28/33*	CML-R	168	624	0	
CY2FLEXO-LV (7C851009A)	4903174	*610906225/28/33*	CML-R	1000	624	0	
CY2FLEXO-LV (7C851009A)	4803399	*610818721/715/705*	CML-R	168	120	0	
CY2FLEXO-LV (7C851009A)	4803399	*610818721/715/705*	CML-R	1000	120	0	
CY2FLEXO-LV (7C851009A)	4843328	*610853381/9/4*	CML-R	168	116	0	
CY2FLEXO-LV (7C851009A)	4843328	*610853381/9/4*	CML-R	1000	116	0	
STRESS: HIGH TEMP DYNAMIC OPERATING LIFE-EARLY FAILURE RATE (125C, 2.35V, Vcc Max)							
CY2FLEXO-LV (7C851009A)	4903174	*610906225/28/33*	CML-R	96	1500	0	
CY2FLEXO-LV (7C851009A)	4803399	*610818721/715/705*	CML-R	96	1006	0	
CY2FLEXO-LV (7C851009A)	4843328	*610853381/9/4*	CML-R	96	1238	0	
STRESS: HIGH TEMP DYNAMIC OPERATING LIFE-EARLY FAILURE RATE (125C, 3.96V, Vcc Max)							
CY2FLEXO-HV (7C851010A)	4903174	*610906226*	CML-R	96	48	0	
CY2FLEXO-HV (7C851010A)	4843328	*610853387/85/80*	CML-R	96	45	0	
STRESS: PRESSURE COOKER TEST (121C, 100%RH), 15 Psig, PRE COND 192 HR, 30C/60%RH, MSL3							
CY2VC521ZXC (7C851101AC)	4803399	*610820272/270/271*	CML-RA	168	80	0	
CY2VC521ZXC (7C851101AC)	4803399	*610820272/270/271*	CML-RA	288	72	0	

Reliability Test Data

QTP #: 064302

Device	Fab Lot #	Assy Lot #	Assy Loc	Duration	Samp	Rej	Failure Mechanism
STRESS: STATIC LATCH-UP TESTING (125C, ±200mA)							
CY2VC521ZXC (7C851101AC)	4803399	*610820272/270/271*	CML-RA	COMP	6	0	
CY2X012FLX (7C851001A)	4843328	*610853236*	ER	COMP	6	0	
CY2V0122FLXC (7C851003A)	4843328	*610853238*	ER	COMP	6	0	
CY2V013FLXI (7C851004A)	4843328	*610853239*	ER	COMP	6	0	
CY2X014FLXC (7C851002A)	4843328	*610853237*	ER	COMP	6	0	
CY2VC521ZXC-2 (7C851101A)	4903174	*610906515/16*	ER	COMP	6	0	
CY2VC511ZXC (7C851100A)	4903174	*610906511/12/13*	ER	COMP	6	0	
CY2XP31ZXI (7C851200A)	4903174	*610908073/75/77*	T-Taiwan	COMP	6	0	
CY2XL11ZXC (7C851201A)	4903174	*610908081/82/83*	T-Taiwan	COMP	6	0	
CY2X014FLXC (7C851002A)	4903174	*610906619*	ER	COMP	6	0	
CY2V013FLXI (7C851004A)	4903174	*610906625*	ER	COMP	6	0	
CY2V012FLXI (7C851003A)	4903174	*610906623*	ER	COMP	6	0	
CY2X012FLXC (7C851001A)	4903174	*610906621*	ER	COMP	6	0	
CY2VC511ZXC (7C851100A)	4803399	*610820266/265/263*	CML-RA	COMP	6	0	
CY2VC511ZXC (7C851001A)	4803399	*610818852*	ER	COMP	6	0	
CY2X014FLXCT (7C851002A)	4803399	*610818855*	ER	COMP	6	0	
CY2V012FLXCT (7C851003A)	4803399	*610818854*	ER	COMP	6	0	
CY2V013FLXIT (7C851004A)	4803399	*610818851*	ER	COMP	6	0	
CY2XP31ZXC (7C851010A)	4803399	*610818851*	ER	COMP	6	0	
STRESS: TC COND. C -65C TO 150C, PRE COND 192 HRS, 30C/60%RH, MSL3							
CY2VC521ZXC (7C851101AC)	4803399	*610820272/270/271*	CML-RA	300	80	0	
CY2VC521ZXC (7C851101AC)	4803399	*610820272/270/271*	CML-RA	500	80	0	
CY2VC521ZXC (7C851101AC)	4803399	*610820272/270/271*	CML-RA	1000	80	0	
CY2VC521ZXC (7C851101AC)	4803399	*610820272/270/271*	CML-RA	1500	80	0	

Reliability Test Data

QTP #: 091601

Device	Fab Lot #	Assy Lot #	Assy Loc	Duration	Samp	Rej	Failure Mechanism
STRESS: ESD-HUMAN BODY CIRCUIT PER JESD22, METHOD A114, 2200V							
CY2VC831ZXC (7C851012A)	4903174	610911034/5/6	CML-RA	COMP	8	0	
CY2XP91FZXC (7C851202A)	4903174	610911031/2/3	CML-RA	COMP	8	0	
STRESS: STATIC LATCH-UP TESTING (125C, ±200mA)							
CY2VC831ZXC (7C851012A)	4903174	610911034/5/6	CML-RA	COMP	6	0	
CY2XP91FZXC (7C851202A)	4903174	610911031/2/3	CML-RA	COMP	6	0	

Reliability Test Data

QTP #: 093101

Device	Fab Lot #	Assy Lot #	Assy Loc	Duration	Samp	Rej	Failure Mechanism
STRESS: ESD-CHARGE DEVICE MODEL (500V)							
CY2XP31ZXC (7C851203A)	4903174	610920081	TAIWAN-T	COMP	9	0	
CY2XL11ZXC (7C851204A)	4903174	610919761	TAIWAN-T	COMP	9	0	
STRESS: ESD-HUMAN BODY CIRCUIT PER JESD22, METHOD A114, 2200V							
CY2XP31ZXC (7C851203A)	4903174	610920081	TAIWAN-T	COMP	8	0	
CY2XL11ZXC (7C851204A)	4903174	610919761	TAIWAN-T	COMP	8	0	
STRESS: STATIC LATCH-UP TESTING (125C, ±200mA)							
CY2XP31ZXC (7C851203A)	4903174	610920081	TAIWAN-T	COMP	6	0	
CY2XL11ZXC (7C851204A)	4903174	610919761	TAIWAN-T	COMP	6	0	

Reliability Test Data

QTP #: 092803

Device	Fab Lot #	Assy Lot #	Assy Loc	Duration	Samp	Rej	Failure Mechanism
STRESS: E-TEST							
CY2X012FLXI (7C85100A)	4917670	N/A	N/A	COMP	COMPARABLE		
STRESS: SORT YIELD							
CY2X012FLXI (7C85100A)	4917670	N/A	N/A	COMP	COMPARABLE		

Reliability Test Data

QTP #: 120105

Device	Fab Lot #	Assy Lot #	Assy Loc	Duration	Samp	Rej	Failure Mechanism
STRESS: ESD-CHARGE DEVICE MODEL (500V)							
CY2XP61LQXI (7C851300A)	4119570	*611205893*	TAIWAN-G	COMP	9	0	
STRESS: ESD-HUMAN BODY CIRCUIT PER JESD22, METHOD A114, 2200V							
CY2XP61LQXI (7C851300A)	4119570	*611205893*	TAIWAN-G	COMP	8	0	
STRESS: STATIC LATCH-UP TESTING (85C, ±140mA)							
CY2XP61LQXI (7C851300A)	4119570	*611205893*	TAIWAN-G	COMP	6	0	

Document History Page

Document Title: QTP # 064302 : XO LN FLEXO DEVICE FAMILY (LOW NOISE XO/VCXO/VCO CRYSTAL OSCILLATOR AND CLOCK GENERATOR), L8C-3R TECHNOLOGY, FAB 4
Document Number: 001-88013

Rev.	ECN No.	Orig. of Change	Description of Change
**	4033666	ILZ	Initial Spec Release Qualification report published on Cypress.com is documented on memo HGA-951 is not in spec format. Initiated spec for QTP 064302 and all data from Memo HGA-951 was transferred to qualification report spec template. Deleted package qualification details on package qualification history table. Deleted Cypress reference Spec and replaced with Industry Standards Updated package availability based on current qualified test & assembly site.
*A	4048909	NSR	Added CY2XP61 device and QTP#120105 data. Changed MID to MPD Added 24-Pin QFN package option and ASE-TAIWAN for its assembly site. Fixed page alignment, font format and data alignment. Added Document Number in the document history page.
*B	4151939	HSTO	Added device CY2X0147, CY2X0137 & CY2XF327 in the cover page and marketing part# in MMNH-91. Update Package Availability table
*C	4417735	JYF	Sunset Review: Updated QTP title page; Updated Reliability Tests Performed table: - Added industry standard of EFR/LFR,LLV,LTOL,HTSSL,HTS, HAST,PCT - Added preconditioning step in Acoustic Microscopy

Distribution: WEB

Posting: None