

# **CYPRESS SEMICONDUCTOR CORPORATION**

## **PRODUCT RELIABILITY REPORT**

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QUARTER 3, 1998



PERFORM PER THE REQUIREMENT OF 25-00008, RELIABILITY MONITOR PROGRAM SPECIFICATION

Ed Russell  
Reliability Manager

## STANDARD STRESS TEST DESCRIPTIONS

<b><u>TEST</u></b>	<b><u>DESCRIPTION</u></b>
HTOL	High Temp Op Life, 150°C, 5.75V
HTOL2	High Temp Op Life, 125°C, 5.75V
HTSSL	High Temp Steady State Life, 150°C, 5.75V
HTSSL2	High Temp Steady State Life, 125°C, 5.75V
DRET	Data Retention Test, Data Bake 165°C, Plastic
DRET2	Data Retention Test, Data Bake 250°C,
PCT	Pressure Cooker Test, 121°C, 100%RH, No
HAST	Hi-Accel Saturation Test, 140°C, 85%RH,
TC	Temp Cycle, 125°C to -40°C
TC2	Temp Cycle, 150°C to -65°C
HTS	High Temp Storage, 165°C, No Bias

## WAFER FAB AREAS

<b><u>FAB #</u></b>	<b><u>LOCATION</u></b>
CA	San Jose, California
TX	Round Rock, Texas
MN	Bloomington, Minnesota
FR	MHS, France

## ASSEMBLY LOCATION

<b><u>ID</u></b>	<b><u>COMPANY/LOCATION</u></b>
KOREA-A	Anam-Buchon/Korea
ASAT-B	Asat/Hongkong
USA-C	Cypress/USA
PHIL-D	Dynesem/Philippines
USA-E	Cypress-Minnesota/USA
INDNS-F	Astra/Indonesia
TAIWAN-G	ASE/Taiwan
KOREA-H	Hyundai/Korea
MALAY-J	ASE/Malaysia
THLAND-K	TMS/Thailand
KOREA-L	Anam-Seoul/Korea
PHIL-M	Anam/Philippines
USA-N	Express/USA
INDNS-O	Omedata/Indonesia
USA-P	Pantronix/USA
KOREA-Q	Anam-Bupyong/Korea
PHIL-R	Cypress/Philippines
USA-S	ATM/USA
TAIWAN-T	OSE/Taiwan
MALAY-U	Unisem/Malaysia
USA-V	Aplus/USA
USA-W	Toshiba/USA
ALPHA-X	Cypress Bangkok/Thailand

ALPHA-Y  
THLAND-Z

Alphatech/Thailand  
Hana/Thailand

## DESCRIPTION OF DATA TABLE COLUMN HEADINGS

### **COLUMN HEADING**

### **DESCRIPTION OF COLUMN CONTENTS**

Division	Cypress Manufacturing Division
Test	Common code for the stress performed. See table on previous page for detail.
Test Condition	Tem/humidity/bias condition for the stress. See table on previous for detail
Device ID	Cypress part number
Date Code	Week in which specific lot was marked/sealed/molded.
Lot Number	Manufacturing (assembly) lot number
Function	Generic product family at Cypress
Description	Brief description of device function
Technology	Fabrication process technology.
Process	Generic fabrication process
Pkg Material	Generic packaging material
Pkg Type	Common code for standard package configuration (PDIP=Plastic Dual-In-Line-Package).
Pkg Location	Country Location + Initial of assembly house (see table on prvious page for detail).
# Pins	Pin cont of package in which device is assembled.
Duration	Data Readpoint of stress. For Temp Cycle (TC) = Cycles; all other stresses=Hours.
# Test	Quantity of devices submitted to this stress/test.
# Failed	Quantity of devices failing at this specific readpoint.
Fail Mode	Failure analysis results from this test, if any.

## RELIABILITY DATA SUMMARY (Q398)

LONG TERM FAILURE RATE SUMMARY					
PROCESS	DEVICE HOURS			FAILED	FAILURE MODE
	150C	125C	TOTAL <sup>1</sup> @ 150C		
FAMOS TOTAL	134,640	479,000	290,794	0	
FLASH TOTAL	0	0	0	0	
SRAM/LOGIC TOTAL	938,678	917,000	1,237,620	2	2 UNKNOWN
BICMOS TOTAL	0	180,000	58,680	0	
LFR TOTAL	1,073,318	1,576,000	1,587,094	2	2 UNKNOWN
EARLY FAILURE RATE SUMMARY					
PROCESS	UNITS TESTED			FAILED	FAILURE MODE
	150C	125C	TOTAL @ 150C		
FAMOS TOTAL	500	284	784	0	
FLASH TOTAL	0	0	0	0	
SRAM/LOGIC TOTAL	31,994	23,318	55,312	5	1 SHORTED METAL (BRIDGING), 2 NON VISUAL, 2 FA PENDING
BICMOS TOTAL	999	4,910	5,909	0	
EFR TOTAL	33,493	28,512	62,005	5	1 SHORTED METAL (BRIDGING), 2 NON VISUAL, 2 FA PENDING
HTSSL FAILURE RATE SUMMARY					
PROCESS	DEVICE HOURS			FAILED	FAILURE MODE

<sup>1</sup> Equivalent Total Device Hours/Cycles. Derating factors are used for lower stress condition.

	150C	125C	TOTAL <sup>1</sup> @ 150C		
FAMOS TOTAL	25,448	120,000	64,568	0	
FLASH TOTAL	0	0	0	0	
SRAM/LOGI C TOTAL	12,176	234,000	88,460	0	
BICMOS TOTAL	26,880	0	26,880	0	
HTSSL TOTAL	64,504	354,000	179,908	0	
<b>TEMP CYCLE FAILURE RATE SUMMARY</b>					
PROCESS	DEVICE CYCLE			FAILED	FAILURE MODE
	150C	125C	TOTAL <sup>1</sup> @ 150C		
FAMOS TOTAL	39,600	0	39,600	0	
FLASH TOTAL	0	0	0	0	
SRAM/LOGI C TOTAL	973,200	15,600	977,256	7	5 OPEN BOND LIFT/1 MIXED REJECT/1 TOPSIDE CRACK
BICMOS TOTAL	60,000	0	60,000	0	
TC TOTAL	1,072,800	15,600	1,076,856	7	5 OPEN BOND LIFT/1 MIXED REJECT/1 TOPSIDE CRACK

## RELIABILITY DATA SUMMARY (Q398)

HAST FAILURE RATE SUMMARY					
PROCESS	DEVICE HOURS			FAILED	FAILURE MODE
	150C	125C	TOTAL <sup>1</sup> @ 150C		
FAMOS TOTAL	0	11,264	5,981	0	
FLASH TOTAL	0	0	0	0	
SRAM/LOGI C TOTAL	255,104	36,992	274,747	1	1 POLY FUSE DEFECT
BICMOS TOTAL	0	6,144	3,262	0	
HAST TOTAL	255,104	54,400	283,990	1	1POLY FUSE DEFECT
LTOL FAILURE RATE SUMMARY					
PROCESS	DEVICE HOURS		FAILED	FAILURE MODE	
FAMOS TOTAL	NO DATA		NO DATA		
FLASH TOTAL	NO DATA		NO DATA		
SRAM/LOGI C TOTAL	NO DATA		NO DATA		
BICMOS TOTAL	NO DATA		NO DATA		
LTOL TOTAL	NO DATA		NO DATA		
PCT FAILURE RATE SUMMARY					
PROCESS	DEVICE HOURS		FAILED	FAILURE MODE	
FAMOS TOTAL	27,360		0		



FLASH TOTAL	0		0		
SRAM/LOGI C TOTAL	312,360		0		
BICMOS TOTAL	21,168		0		
PCT TOTAL	360,888		0		
DRET FAILURE RATE SUMMARY					
PROCESS	PLASTIC (165C)		HERMETIC(250C)		FAILURE MODE
	DHR	REJ	DHR	REJ	
FAMOS TOTAL	83,904	0	0	0	
FLASH TOTAL	0	0	0	0	
SRAM/LOGI C TOTAL	162,000	0	0	0	
BICMOS	76,000	0	0	0	
DRET TOTAL	321,904	0	0	0	

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Technology	Test	Test Condition	Divi- Func- sion tion	Device	Assembly Eval#	Pro- D/C Lot No	Wfr Pkg Assy Description	No Dura Qty Loc type Loc	Qty Pin
tion Test	Fail	Fail Mode							
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BICMOS-SM1	DRET	165C/NO BIAS	DCD	CHNL	CY7B991-JC	M83027	9818 219803361	PSCB	
BiCMOS TX	PLCC	ALPHA-X	32 168	76 0					
						1000	76 0		
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HAST	130/3.63V	DCD	CHNL	CY7B9514V-AC	98051	9823 619803937	SONET/SHD	BiCMOS TX	
TQFP CSPI-R	100 128	48 0							
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HTOL	150C/4.8V	DCD	CHNL	CY7B9514V-AC	98051	9823 619803937	SONET/SHD	BiCMOS TX	
TQFP CSPI-R	100 48	500 0							
						619805327	SONET/SHD	BiCMOS TX	
							TQFP CSPI-R	100 48	499 0

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      HTOL2 125C/4.8V   DCD CHNL CY7B9514V-AC  98051  9823 619803937 SONET/SHD BiCMOS TX
TQFP CSPI-R 100  80 120  0

                                         500 120  0

                        619805327 SONET/SHD BiCMOS TX TQFP CSPI-R 100  80 120  0
                                         500 120  0

      CY7B991-VC  97501  9819 219803586L PSCB      BiCMOS TX PLCC ALPHA-X 32
48 353  0

                                         48 647  0
                                         80 120  0
                                         500 120  0

      98293  9827 219804875L PSCB      BiCMOS TX PLCC ALPHA-X 32 48
450  0

                                         48 600  0

      125C/5.75V   DCD CHNL CY7B991-JC  98221  9822 219803965 PSCB      BiCMOS TX PLCC
ALPHA-X 32 96 430  0

                                         96 570  0

      219803966 PSCB      BiCMOS TX PLCC ALPHA-X 32 96 140  0
                                         96 860  0

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		M83010 9818 219803361 PSCB		BiCMOS TX PLCC ALPHA-X 32 96	
120	0			96	380 0

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TC2 -65C TO 150C DCD CHNL CY7B9514V-AC 98051 9823 619803937 SONET/SHD BiCMOS TX  
TQFP CSPI-R 100 300 50 0

9828 619807608 SONET/SHD BiCMOS TX TQFP CSPI-R 100 300 55  
0

CY7B991-JC M83026 9818 219803361 PSCB BiCMOS TX PLCC ALPHA-X 32  
300 45 0

CY7B991-VC 97501 9819 219803586L PSCB BiCMOS TX PLCC ALPHA-X 32  
300 50 0

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Technology	Test	Test	Divi- Condition	Func- sion	tion	Device	Assembly Eval#	Pro- D/C	Wfr Pkg Lot No	Assy Description	No Loc	Dura type	Qty Loc	Qty Pin
tion	Test	Fail	Fail	Mode										
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552    76    0

45 0

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HTOL 150C/5.75V PLD 37K CY37256VP160-AC 98376 9823 619806102 256 MCEL-3V CMOS TW  
TQFP KOREA-Q 160 48 250 0

80 116 0  
500 88 0

9830 619808070 256 MCEL-3V CMOS TW TQFP KOREA-Q 160 48

50 0

48 200 0  
80 140 0  
500 140 0

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HTSSL 150C/5.5V PLD 37K CY37256VP160-AC 98376 9823 619806102 256 MCEL-3V CMOS TW  
TQFP KOREA-Q 160 80 76 0

168 76 0

9830 619808070 256 MCEL-3V CMOS TW TQFP KOREA-Q 160 80

76 0

168 75 0 1 Latch-up Induced Overst



LTOL	-30C/6.50V	PLD	37K	CY37256VP160-AC	98376	9823	619806102	256	MCEL-3V	CMOS	TW
TQFP KOREA-Q	160	230	45	0							
								500	45	0	
								750	45	0	

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PCT	121C/100%RH	PLD	37K	CY37256VP160-AC	98376	9823	619806102	256	MCEL-3V	CMOS	TW
TQFP KOREA-Q	160	168	50	0							
				288	50	0					

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Technology	Test	Divi- Test	Func- Condition	sion	tion	Device	Assembly Eval#	Pro- D/C	Wfr Lot	Pkg No	Assy Description	No cess	Dura Loc	Qty type	Qty Loc	Pin
FAMOS-E3	PCT	121C/100%RH	PLD	37K	CY37256VP160-AC	98376	9830	619808070	256	MCEL-3V						
CMOS	TW	TQFP KOREA-Q	160	168	45	0										





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HTSSL2 125C/5.5V    PLD   MAX   CY7C341-JC    M82036 9814 619803505 REPROG.PAL CMOS   TX  
PLCC KOREA-A   84   96   120   0  
  
500   120   0

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TC2   -65C TO 150C   PLD   MAX   CY7C341-RMB    97453   9743 349705389 REPROG.PAL CMOS   TX  
WPGA PHIL-M    84   100   50   0  
  
CY7C344-HMB    97457   9742 349705317 REPROG.PAL CMOS   TX CERQ PHIL-M  
28   100   46   0

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Technology	Test	Divi- Test	Func- Condition	sion	tion	Device	Assembly Eval#	Pro- D/C	Wfr Lot	Pkg No	Assy Description	No cess	Dura Loc	Qty type	Qty Loc	Pin
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FAMOS-P26	HTOL2	125C/5.75V	MPD	PROM	CY27C010-PC	M82050	9747	619709651	128K x 8	CMOS						
TX PDIP KOREA-H	32	500	120	0												

1000 120 0

2000 119 0

HTSSL2	125C/5.5V	MPD	PROM	CY27C010-PC	M82021	9747	619709651	128K x 8	CMOS	TX						
PDIP KOREA-H	32	96	120	0												

500 120 0

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Technology	Test	Divi- Func- Test Condition	tion tion	Device	Assembly Eval#	Pro- D/C	Wfr Pkg Lot No	Assy Description	No Dura cess Loc	Qty type	Qty Loc	Pin
tion Test	Fail	Fail Mode										

SRAM/LOGIC-L20 DRET 165C/NO BIAS DCD VME CY7C611A-NC M83003 9818 619804439 RISC  
CONTRL CMOS TX PQFP HK-B 160 168 82 0  
1000 82 0

TC -40C TO 125C DCD VME CY7C611A-NC M83004 9818 619804439 RISC CONTRL CMOS TX  
PQFP HK-B 160 300 52 0

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Technology	Test	Divi- Test	Func- Condition	tion	tion	Device	Assembly Eval#	Pro- D/C	Wfr Lot	Pkg No	Assy Description	No cess	Dura Loc	Qty type	Qty Loc	Pin	
SRAM/LOGIC-L27	HTOL2	125C/5.75V	DCD	CHNL	CY7C955-NI	M83007	9729	619704922	TRANSCEIVER	CMOS	MN	PQFP	KOREA-L	128	96	273	1 1 Shorted Metal (Bridging

125C/6.5V	DCD	CHNL	CY7C955-NC	98319	9833	619808961	TRANSCEIVER	CMOS	TX
PQFP KOREA-L	128	48	241	0					
					48	806	0		

PCT	121C/100%RH	DCD	CHNL	CY7C955-NI	M83034	9732	619705642	TRANSCEIVER	CMOS
MN	PQFP	KOREA-L	128	168	80	0			

TC2 -65C TO 150C DCD CHNL CY7C955-NI M83036 9732 619705642 TRANSCEIVER CMOS MN  
PQFP KOREA-L 128 300 50 0

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Technology	Test	Divi- Test	Func- Condition	tion	tion	Device	Assembly Eval#	Pro- D/C	Wfr Lot	Pkg No	Assy Description	No cess	Dura Loc	Qty type	Qty Loc	Pin
SRAM/LOGIC-L28	HAST	140C/3.63V	CPD	TTECH	CY22751PVC	M82055	9804	619800214	CLOCK SYN.							
CMOS	MN	SSOP	CSPI-R	48	128	11	0									

SRAM/LOGIC-L28 HAST 140C/3.63V CPD TTECH CY22751PVC M82055 9804 619800214 CLOCK SYN.  
CMOS MN SSOP CSPI-R 48 128 11 0  
128 69 0

140C/5.5V DCD PCLOG CY82C693-NC 98209 9828 619807947 PC CHIPSET CMOS TX PQFP  
MALAY-J 208 128 45 0  
619807948 PC CHIPSET CMOS TX PQFP MALAY-J 208 128 45  
0

HTOL 150C/5.75V CPD TTECH CY2291SC 98195 9823 34980844/7 CLOCK SYN. CMOS TX  
SOIC PHIL-M 20 48 149 0  
48 209 0

48 298 0  
48 299 0

DCD PCLOG CY82C693-NC 98209 9828 619807947 PC CHIPSET CMOS TX PQFP  
MALAY-J 208 48 168 0

80 78 0

500 75 0 3 EOS

619807948 PC CHIPSET CMOS TX PQFP MALAY-J 208 48 168

0

80 78 0  
500 73 0 5 EOS  
785 70 0

9829 619808385 PC CHIPSET CMOS TX PQFP MALAY-J 208 48 167

0

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HTS 165C/NO BIAS DCD PCLOG CY82C693-NC 98209 9828 619807948 PC CHIPSET CMOS TX  
PQFP MALAY-J 208 336 48 0

1000 48 0

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HTSSL 150C/5.5V    DCD PCLOG CY82C693-NC    98209    9828 619807948 PC CHIPSET CMOS TX  
PQFP MALAY-J 208 80 73 0  
  
168 72 0

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LTOL -30C/5.75V    CPD FCT CY74FCT543TSOC 98209 9822 619805959/ BUS SWITCH CMOS TX  
SOIC CSPI-R 24 500 45 0

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Technology	Test	Test Condition	Divi- Func- sion tion	Device	Assembly Eval#	Pro- D/C Lot No	Wfr Pkg Assy Description cess	No Dura Qty Loc type Loc	Qty Pin
tion Test	Fail	Fail Mode							

SRAM/LOGIC-L28 PCT 121C/100%RH CPD TTECH CY22751PVC M83017 9804 619800309 CLOCK SYN.  
CMOS MN SSOP CSPI-R 48 168 78 0

DCD PCLOG CY82C693-NC 98209 9828 619807948 PC CHIPSET CMOS TX PQFP  
MALAY-J 208 168 48 0

TC2 -65C TO 150C DCD PCLOG CY82C693-NC 98209 9828 619807947 PC CHIPSET CMOS TX  
PQFP MALAY-J 208 300 47 0

0 619807948 PC CHIPSET CMOS TX PQFP MALAY-J 208 300 48

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500 116 0

619802795S 20 BIT BUF. CMOS MN TSSO TAIWAN-T 56 24 116

0

24 116 0

80 116 0

80 116 0

500 116 0

500 116 0

HTS 165C/NO BIAS CPD FCT CY74FCT163LD827 98133 9810 619802795 20 BIT BUF. CMOS MN  
TSSO TAIWAN-T 56 336 45 0

619802795S 20 BIT BUF. CMOS MN TSSO TAIWAN-T 56 336 44

0

336 47 0

CY74FCT163LD952 98298 - 619807278 16 BIT REG. CMOS MN TSSO CSPI-R 56  
336 45 0

500 45 0

T/S -55C TO 150C CPD FCT CY74FCT163LD952 98298 - 619807278 16 BIT REG. CMOS MN  
TSSO CSPI-R 56 100 45 0

200 45 0

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TC2 -65C TO 150C CPD FCT CY74FCT163LD827 98133 9810 619802795 20 BIT BUF. CMOS MN  
TSSO TAIWAN-T 56 300 45 0

619802795S 20 BIT BUF. CMOS MN TSSO TAIWAN-T 56  
300 44 0

Technology	Test tion Test	Test Fail	Divi- Test Condition	Func- sion tion	Assembly Device	Pro- D/C Lot No	Wfr Pkg Assy	No Dura Qty	Dura Qty
		Mode			Eval#	Description		Loc type Loc	Pin
-----									
-----									
SRAM/LOGIC-L31	TC2	-65C TO 150C	CPD FCT	CY74FCT163LD827	98133	9810 619802795S	20 BIT BUF.		
CMOS MN TSSO TAIWAN-T	56	300	45	0					
				CY74FCT163LD952	98298	- 619807278	16 BIT REG. CMOS	MN TSSO CSPI-R	56
300	45	0							
					619807279	16 BIT REG. CMOS	MN TSSO CSPI-R	56	300
								45	0
					619807280	16 BIT REG. CMOS	MN TSSO CSPI-R	56	300
								45	0
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Technology	Test	Divi-	Func-	sion	tion	Device	Assembly	Pro-	Wfr	Pkg	Assy	No	Dura	Qty	Qty	Pin
tion Test	Fail	Test	Condition				Eval#	D/C	Lot	No	Description	cess	Loc	type	Loc	
-----																
-----																
SRAM/LOGIC-R28	HAST	130C/5.5			DCD	FIFO	CY7C4245-AC	M82060	9981	619804361	4Kx18	FIFO	CMOS	MN	TQFP	KOREA-Q
		64	128	76	0											
	130C/5.5V		DCD	FIFO	CY7C4245-AC	M82059	9727	619704335	4Kx18	FIFO	CMOS	MN	TQFP	KOREA-Q	64	128 76 0
	140C/5.5		MPD	COMDTY	CY7C1009-VC	MR83033	9802	619711572	256K x 4	CMOS	MN	SOJ	CSPI-R	32	128 80 0	
			CY7C109-VC	MR83093	9820	519805328	128K x 8	CMOS	MN	SOJ	INDNS-O	32	128	80	0	

140C/5.5V	DCD	DPORT	CY7C136-JC	M83022	9811	519802844	2K x 8 DP	CMOS	MN	PLCC		
INDNS-O	52	128	80	0								
FIFO	CY7C4245-AC	M83016	9750	619710221	4Kx18	FIFO	CMOS	MN	TQFP	KOREA-		
Q	64	128	76	0								
MPD	COMDTY	CY7C109-ZC	97442	9735	349704960	128K x 8	CMOS	MN	TSOP			
KOREA-GQ	32	128	48	0								
	98191	9817	619803751	128K x 8	CMOS	MN	TSOP	PHIL-GW	32	128	45	
0												
							128	47	0			
	619803752	128K x 8	CMOS	MN	TSOP	PHIL-GW	32	128	46	0		
							128	46	0			
	619803753	128K x 8	CMOS	MN	TSOP	PHIL-GW	32	128	45	0		
							128	48	0			
CY7C188-VC	MR83028	9821	619805225	32K x 9	CMOS	MN	SOJ	CSPI-R	32			
128	80	0										
CY7C199-VC	98210	-	619805353	32K x 8	CMOS	MN	SOJ	PHIL-GW	28	128		
50	0											
	619805353L	32K x 8	CMOS	MN	SOJ	PHIL-GW	28	128	50	0		
							128	50	0			

		CY7C199-ZC	98301	9821	619805266	32K x 8	CMOS	MN	TSOP	CSPI-R	28	128
45	0											
		CY7C199-ZI	MR82080	9808	619802112	32K x 8	CMOS	MN	TSOP	CSPI-R	28	
128	76	0										

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HTOL2 125C/ MPD COMDTY CY7C109-VC MR83020 9820 519805328 128K x 8 CMOS MN  
SOJ INDNS-O 32 96 406 0

125C/5.75V DCD DPORT CY7C136-JC M80121 9742 519713305 2K x 8 DP CMOS MN PLCC  
INDNS-O 52 96 12 0

96 52 0  
96 52 0  
500 116 0  
1000 116 0  
2000 116 0

M82052 9704 349700386 2K x 8 DP CMOS MN PLCC PHIL-M 52 500  
120 0

1000 120 0  
2000 120 0

M83013 9811 519802844 2K x 8 DP CMOS MN PLCC INDNS-O 52 500  
120 0

1000 120 0  
2000 120 0

MPD COMDTY CY7C1009-VC MR83001 9802 619711572 256K x 4 CMOS MN SOJ  
CSPI-R 32 96 477 0

CY7C188-VC MR83003 9821 619805225 32K x 9 CMOS MN SOJ CSPI-R 32  
96 377 0

125C/5.7V DCD DPORT CY7C136-JC M83005 9811 519802844 2K x 8 DP CMOS MN PLCC  
INDNS-O 52 96 143 0  
96 357 0

[illegible]

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PCT 121C/100%RH DCD DPORT CY7C136-JC M83020 9811 519802844 2K x 8 DP CMOS MN  
PLCC INDNS-O 52 168 80 0

MPD COMDTY CY7C109-VC MR83091 9820 519805328 128K x 8 CMOS MN SOJ  
INDNS-O 32 168 80 0

CY7C185-VC 98296 9828 619807754 SML/64K CMOS TX SOJ CSPI-R 28 168  
50 0

CY7C188-VC MR83029 9821 619805225 32K x 9 CMOS MN SOJ CSPI-R 32  
168 70 0

CY7C197-VC 98236 9827 519807749 256K x 1 CMOS TX SOJ CSPI-R 24 168  
48 0

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T/S -55C TO 150C MPD COMDTY CY7C109-ZC 98191 9817 619803751 128K x 8 CMOS MN  
TSOP PHIL-GW 32 100 45 0

200 45 0

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TC2 -65C TO 150C DCD DPORT CY7C136-JC M83021 9811 519802844 2K x 8 DP CMOS MN  
PLCC INDNS-O 52 300 50 0

FIFO CY7C4245-AC M83008 9750 619710221 4Kx18 FIFO CMOS MN TQFP KOREA-  
Q 64 300 48 0

Cypress Semiconductor Corporation  
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Technology	Test	Divi- Test	Func- Condition	sion	tion	Assembly Device	Pro- Eval#	Wfr Pkg D/C Lot No	Assy Description	No cess	Dura Loc	Qty type	Qty Loc	Pin
tion Test	Fail	Fail	Mode											
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SRAM/LOGIC-R28	TC2	-65C	TO 150C	MPD	COMDTY	CY7C1009-VC	MR82063	9807	619711668	256K x 4				
CMOS	MN	SOJ	CSPI-R	32	300	43	5	5	Open- Bond Lift (Die)					
							MR83035	9802	619711572	256K x 4	CMOS	MN	SOJ	CSPI-R
											32	300	50	
0														
							CY7C109-ZC	97442	9735	349704960	128K x 8	CMOS	MN	TSOP KOREA-GQ
300	48	0												
							349704961	128K x 8	CMOS	MN	TSOP KOREA-GQ	32	300	48
														0
							349704962	128K x 8	CMOS	MN	TSOP KOREA-GQ	32	300	48
														1
1 Mixed Reject														
							98191	9817	619803751	128K x 8	CMOS	MN	TSOP PHIL-GW	32
0														300
														45
							619803752	128K x 8	CMOS	MN	TSOP PHIL-GW	32	300	45
														0

				619803753	128K x 8	CMOS	MN	TSOP	PHIL-GW	32	300	45	0
48	0		CY7C185-VC	98296	9828 619807754	SML/64K	CMOS	TX	SOJ	CSPI-R	28	300	
50	0		CY7C199-VC	98210	- 619805353	32K x 8	CMOS	MN	SOJ	PHIL-GW	28	300	
				619805353L	32K x 8	CMOS	MN	SOJ	PHIL-GW	28	300	50	0
											300	50	0
300	50	0	CY7C199-ZI	MR83067	9819 619805260	32K x 8	CMOS	MN	TSOP	CSPI-R	28		

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Technology	Test	Divi- Test	Func- Condition	sion	tion	Device	Assembly Eval#	Pro- D/C	Wfr Lot	Pkg No	Assy Description	No cess	Dura Loc	Qty type	Qty Loc	Pin
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SRAM/LOGIC-R3	HAST	140C/5.5V	MPD	COMDTY	CY7C1020-VC	98222	9801	619711135	32K	x16						
CMOS	MN	SOJ	CSPI-R	44	128	45	0									

					CY7C199-VC	MR83082	9816	619804270	256K		CMOS	MN	SOJ	CSPI-R	28	
128	80	0														

HTOL	150C/6.5V	DCD	FIFO	CY7C4265-JC	97415	9710	619700831S	16KX18	FIFO	CMOS	MN					
PLCC	PHIL-M	68	48	428	0											

						9711	619700973S	16KX18	FIFO	CMOS	MN	PLCC	PHIL-M	68	48	363
1	1	Non	Visual													

					CY7C4271-JC	97415	9737	619707057S	32Kx9	FIFO	CMOS	MN	PLCC	KOREA-A		
32	48	382	0													



9819 219803518P 32Kx9 FIFO CMOS MN PLCC KOREA-A 32 48 863

0

HTOL2 125C/5.75V MPD COMDTY CY7C1021-ZSC MR83044 9825 619806720 64K x16 CMOS MN  
TSOP CSPI-R 44 96 530 0

CY7C199-VC M80193 9802 619711953 256K CMOS MN SOJ CSPI-R 28 96  
111 0 5 EOS

500 103 0  
1000 103 1 1 Unknown Cause  
2000 102 0

HTS 165C/NO BIAS MPD COMDTY CY7C1020-VC 98222 9801 619711135 32K x16 CMOS MN  
SOJ CSPI-R 44 336 45 0

HTSSL2 125C/5.5V MPD COMDTY CY7C199-VC M82005 9802 619711953 256K CMOS MN  
SOJ CSPI-R 28 96 108 0

500 108 0

52 96 120 0 SYNC CY7C1031-JC M82046 9804 519800339 64K x 18 CMOS MN PLCC INDNS-O  
500 120 0

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PCT 121C/100%RH MPD COMDTY CY7C199-VC MR83080 9816 619804270 256K CMOS MN  
SOJ CSPI-R 28 168 80 0

Cypress Semiconductor Corporation  
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Technology	Test	Divi- Test	Func- Condition	sion	tion	Device	Assembly Eval#	Pro- D/C	Wfr Lot	Pkg No	Assy Description	No cess	Dura Loc	Qty type	Qty Loc	Pin
tion Test	Fail	Fail	Mode													

SRAM/LOGIC-R3	T/S	-55C TO 150C	MPD	COMDTY	CY7C1020-VC	98222	9801	619711135	32K x16							
CMOS	MN	SOJ	CSPI-R	44	100	45	0									
								200	45	0						

TC2	-65C TO 150C	MPD	COMDTY	CY7C1020-VC	98222	9801	619711135	32K x16	CMOS	MN
SOJ	CSPI-R	44	300	45	0					

619711136	32K x16	CMOS	MN	SOJ	CSPI-R	44	300	45	0
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9825	619806605	32K x16	CMOS	MN	SOJ	CSPI-R	44	300	45	0
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				CY7C1021-VC	MR83053	9817	619804496	64K x16	CMOS	MN	SOJ	CSPI-R	44
300	53	0											
				CY7C199-VC	MR83081	9816	619804270	256K	CMOS	MN	SOJ	CSPI-R	28
300	50	0											

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Technology	Test tion Test	Divi- Test Fail	Func- Condition Mode	sion tion	Assembly Device Eval#	Pro- D/C Lot	Wfr Pkg No Description	Assy cess	No Dura Loc type	Qty Loc	Qty Pin
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	140C/5.5V	MPD	SYNC	CY7C1399-ZC	98206	9823	349800821	32K x 8	CMOS	MN	TSOP		
PHIL-M	28	128	45	0									
					349800822	32K x 8	CMOS	MN	TSOP	PHIL-M	28	128	45 0
					349800823	32K x 8	CMOS	MN	TSOP	PHIL-M	28	128	45 0

HTOL 150C/5.75V MPD SYNC CY7C1399-ZC 98206 9823 349800821 32K x 8 CMOS MN TSOP  
PHIL-M 28 80 116 0

349800822 32K x 8 CMOS MN TSOP PHIL-M 28 80 116 0

349800823 32K x 8 CMOS MN TSOP PHIL-M 28 80 116 0

HTOL2 125C/3.65V MPD SYNC CY7C1399-VC MR82003 9742 619708394 32K x 8 CMOS MN  
SOJ PHIL-M 28 96 493 0

HTS 165C/NO BIAS MPD SYNC CY7C1399-ZC 98206 9823 349800821 32K x 8 CMOS MN  
TSOP PHIL-M 28 336 45 0

500 40 0

349800822 32K x 8 CMOS MN TSOP PHIL-M 28 336 45 0  
500 40 0

349800823 32K x 8 CMOS MN TSOP PHIL-M 28 336 45 0  
500 40 0

MR83074 9816 619804105 32K x 8 CMOS MN SOJ PHIL-M 28 168 80

Cypress Semiconductor Corporation  
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Technology	Test	Divi- Test	Func- Condition	sion	tion	Device	Assembly Eval#	Pro- D/C	Wfr Lot	Pkg No	Assy Description	No cess	Dura Loc	Qty type	Qty Loc	Pin
tion Test	Fail	Fail	Mode													
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619808087 256K/2M ROM CMOS MN TSOP KOREA-GQ 32 48

2679 0

9830 619808759 256K/2M ROM CMOS MN TSOP KOREA-GQ 32 48

2892 0

150C/5.75V MPD COMDTY CY62128-SC 98154 9821 619805763 128K x 8 CMOS MN SOIC  
TAIWAN-G 32 80 120 0

500 120 0

619805764L 128K x 8 CMOS MN SOIC TAIWAN-G 32 80 120 0  
500 120 0

619805765L 128K x 8 CMOS MN SOIC TAIWAN-G 32 80 120 0  
500 120 0

98265 9827 619807408D 128K x 8 CMOS MN SOIC TAIWAN-G 32 48

1233 0

9828 619807508D 128K x 8 CMOS MN SOIC TAIWAN-G 32 48 1190

0

HTOL2 125C/3.8V MPD COMDTY CY62256V-ZC MR82011 9807 619801398 32K x 8 CMOS MN  
TSOP CSPI-G 28 96 484 0

MR83007 9807 619801398 32K x 8 CMOS MN TSOP CSPI-G 28 96 500  
0

125C/5.75 MPD COMDTY CY62256-SNC MR82012 9809 519802034 32K x 8 CMOS CA NSOI  
INDNS-O 28 96 150 0 3 Test Program Revision  
96 153 0

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Technology	Test	Divi- Test	Func- Condition	sion	tion	Assembly Device	Eval#	Pro- D/C	Wfr Lot	Pkg No	Assy Description	No cess	Dura Loc	Qty type	Qty Loc	Pin
tion	Test	Fail	Fail	Mode												
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SRAM/LOGIC-R32	HTOL2	125C/5.75	MPD	COMDTY	CY7C109-VC	MR83021	9825	519806900	128K	x	8(5)					
CMOS	MN	SOJ	INDNS-O	32	96	239	0									
	125C/5.75V	MPD	COMDTY	CY62256V-NSC	MR83022	9803	519800428	32K	x	8	CMOS	MN				
NSOI	INDNS-O	28	96	453	0											
	125C/6.5V	MPD	COMDTY	CY7C109-VC	97438	9745	519712349D	128K	x	8(5)	CMOS	MN	SOJ			
INDNS-O	32	96	742	0												
	9746	519712283D	128K	x	8(5)	CMOS	MN	SOJ	INDNS-O	32	96	648				
0																
	9752	519714712d	128K	x	8(5)	CMOS	MN	SOJ	INDNS-O	32	96	849	0			

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HTS 165C/NO BIAS MPD COMDTY CY62128-SC 98154 9821 619805763 128K x 8 CMOS MN  
SOIC TAIWAN-G 32 336 50 0

619805764L 128K x 8 CMOS MN SOIC TAIWAN-G 32 336 50 0

619805765L 128K x 8 CMOS MN SOIC TAIWAN-G 32 336 50 0  
1000 45 0

CY7C109-VC 98207 9815 519803680 128K x 8(5) CMOS MN SOJ INDNS-O 32  
336 45 0

1000 40 0

519804082 128K x 8(5) CMOS MN SOJ INDNS-O 32 336 45 0  
1000 40 0

519804109 128K x 8(5) CMOS MN SOJ INDNS-O 32 336 45 0  
1000 40 0

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PCT 121C/100%RH MPD COMDTY CY62256-SNC MR83097 9820 519805349 32K x 8 CMOS CA  
NSOI INDNS-O 28 168 79 0

CY62256V-NSC MR82076 9745 519712511 32K x 8 CMOS MN NSOI INDNS-O  
28 96 80 0 1 Test Program Revision



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Technology	Test	Divi- Test	Func- Condition	sion	tion	Device	Assembly Eval#	Pro- D/C	Wfr Lot	Pkg No	Assy Description	No cess	Dura Loc	Qty type	Qty Loc	Pin
tion Test	Fail	Fail	Mode													
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SRAM/LOGIC-R32	PCT	121C/100%RH	MPD	COMDTY	CY7C1009-ZC	98192	-	619804698	128K x 8(5)							
CMOS	MN	TSOP	PHIL-GW	32	168	45	0									
619804698L 128K x 8(5) CMOS MN TSOP PHIL-GW 32 168 45 0																
168 45 0																
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TC2	-65C TO 150C	MPD	COMDTY	CY62128-SC	98154	9821	619805763	128K x 8	CMOS	MN						
SOIC	TAIWAN-G	32	300	50	0											
619805764L 128K x 8 CMOS MN SOIC TAIWAN-G 32 300 50 0																
619805765L 128K x 8 CMOS MN SOIC TAIWAN-G 32 300 50 0																



	CY62256V-NSC	MR82075 9745 519712511	32K x 8	CMOS	MN	NSOI	INDNS-O	
28	300	50	0					
		MR83055 9803 499802341	32K x 8	CMOS	MN	NSOI	INDNS-O	28 300
51	0							
	CY62256V-ZC	MR82069 9807 619801398	32K x 8	CMOS	MN	TSOP	CSPI-G	28
300	50	0						
		MR83025 9807 619801398	32K x 8	CMOS	MN	TSOP	CSPI-G	28 300 50
0								
	CY7C1009-ZC	98192 - 619804698	128K x 8(5)	CMOS	MN	TSOP	PHIL-GW	32
300	45	0						
		619804698L	128K x 8(5)	CMOS	MN	TSOP	PHIL-GW	32 300 45 0
								300 45 0
	CY7C109-VC	98207 9815 519803680	128K x 8(5)	CMOS	MN	SOJ	INDNS-O	32
300	45	0						
		519804082	128K x 8(5)	CMOS	MN	SOJ	INDNS-O	32 300 45 0
		519804109	128K x 8(5)	CMOS	MN	SOJ	INDNS-O	32 300 44 1 1
Topside Crack								
		MR82045 9807 519801541	128K x 8(5)	CMOS	MN	SOJ	INDNS-O	32 300
45	0							

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Technology	Test	Divi- Test	Func- Condition	sion tion	Device	Assembly Eval#	Pro- D/C	Wfr Lot	Pkg No	Assy Description	No cess	Dura Loc	Qty type	Qty Loc	Pin
tion Test	Fail	Fail	Fail	Mode											
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-----															
SRAM/LOGIC-R33	TC2	-65C	TO 150C	MPD	COMDTY	CY7C1021V33-VC	MR83015	9731	619705415	64K x16					
CMOS	MN	SOJ	TAIWN-G	44	300	60	0								
							MR83016	9740	619707946	64K x16	CMOS	MN	SOJ	TAIWN-G	44 300
60	0														
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Technology	Test	Divi- Test	Func- Condition	sion	tion	Device	Assembly Eval#	Pro- D/C	Wfr Lot	Pkg No	Assy Description	No cess	Dura Loc	Qty type	Qty Loc	Pin
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SRAM/LOGIC-R42	HTOL	150C/3.8V	MPD	COMDTY	CY62148V-SC	98112	9826	619806743	512K	x 8						
CMOS	MN	SOIC	TAIWAN-G	32	48	188	0									

48	301	0
48	323	0
48	323	0
48	390	0

150C/5.75V	MPD	COMDTY	CY62148-SC	98111	9827	619807424	512K	x 8	CMOS	MN	SOIC
TAIWAN-G	32	500	120	0							

HTOL2	125C/5.75V	MPD	COMDTY	CY62148-SC	98111	9827	619807424	512K	x 8	CMOS	MN
SOIC	TAIWAN-G	32	96	1595	0						

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PCT 121C/100%RH MPD COMDTY CY62148-SC 98111 9827 619807424 512K x 8 CMOS MN  
SOIC TAIWAN-G 32 168 48 0

CY62148V-SC 98112 9826 619806743 512K x 8 CMOS MN SOIC TAIWAN-G 32  
168 46 0

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TC2 -65C TO 150C MPD COMDTY CY62148-SC 98111 9827 619807424 512K x 8 CMOS MN  
SOIC TAIWAN-G 32 300 48 0

CY62148V-SC 98112 9826 619806743 512K x 8 CMOS MN SOIC TAIWAN-G 32  
300 48 0

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500 390 0

9828 619807192 128K x 36 CMOS MN TQFP CSPI-R 100 48 288 0  
48 396 0  
80 396 0  
548 396 0

CY7C1352-AC 98357 9832 619809153 128K x 36 CMOS MN TQFP CSPI-R 100

48 66 0

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HTOL2 125C/3.8V MPD COMDTY CY7C1021V33-VC 98261 9833 619808408 64K x16 CMOS MN  
SOJ CSPI-R 44 96 906 0  
96 906 0

619808409 64K x16 CMOS MN SOJ CSPI-R 44 96 950 0  
96 950 0

619808410 64K x16 CMOS MN SOJ CSPI-R 44 96 905 0  
96 905 0

619808411 64K x16 CMOS MN SOJ CSPI-R 44 96 923 0  
96 923 0

619808412 64K x16 CMOS MN SOJ CSPI-R 44 96 979 0  
96 979 0

619808413 64K x16 CMOS MN SOJ CSPI-R 44 96 962 0

619808414	64K x16	CMOS	MN	SOJ	CSPI-R	44	96	1040	0
			96	1041	0				

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PCT 121C/100%RH MPD COMDTY CY7C1021V33-ZSC MR82052 9816 619803608 64K x16 CMOS  
MN TSOP KOREA-H 44 168 76 0

MR83085 9812 619802905 64K x16 CMOS MN TSOP KOREA-H 44 168  
80 0

SYNCHR CY7C1352-AC 98357 619808642 128K x 36 CMOS MN TQFP CSPI-R  
100 168 45 0  
288 45 0

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T/S -55C TO 150C MPD SYNCHR CY7C1350-AC 98231 9824 619805769 128K x 36 CMOS MN  
TQFP CSPI-R 100 100 45 0  
200 45 0

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TC2 -65C TO 150C MPD COMDTY CY7C1021V33-ZSC MR82052 9816 619803608 64K x16 CMOS  
MN TSOP KOREA-H 44 300 50 0

MR83086 9812 619802905 64K x16 CMOS MN TSOP KOREA-H 44 300

50 0

SYNCHR CY7C1350-AC 98231 9824 619805769 128K x 36 CMOS MN TQFP CSPI-R

100 300 45 0

619805770 128K x 36 CMOS MN TQFP CSPI-R 100 300 45 0

9828 619807192 128K x 36 CMOS MN TQFP CSPI-R 100 300 45 0

98357 9824 619805769 128K x 36 CMOS MN TQFP CSPI-R 100 300 45

0

Cypress Semiconductor Corporation  
Quarterly Reliability Report  
Quarter 3, 1998

Technology	Test	Divi- Test	Func- Condition	tion	tion	Device	Assembly Eval#	Pro- D/C	Wfr Lot	Pkg No	Assy Description	No cess	Dura Loc	Qty type	Qty Loc	Pin
SRAM/LOGIC-R42D	TC2	-65C	TO 150C	MPD	SYNCHR	CY7C1350-AC	98357	9824	619805770	128K	x 36					
CMOS	MN	TQFP	CSPI-R	100	300	45	0									
								9828	619807192	128K	x 36	CMOS	MN	TQFP	CSPI-R	100 300 45 0

[illegible]

HTOL	150C/5.75	MPD	COMDTY	CY7C1020-ZSC	98077	9816	619803865	32K x16	CMOS	MN
TSOP KOREA-H	44 48 500	0								

619803866 32K x16 CMOS MN TSOP KOREA-H 44 48 500 0

9817 619803867	32K x16	CMOS	MN	TSOP	KOREA-H	44	48	500
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150C/5.75V DCD DPORT CY7C038-AC 98368 9826 619806813 64K x 18 DP CMOS MN TQFP  
TAIWAN-G 100 48 289 0

9829 619808005 64K x 18 DP CMOS MN TQFP TAIWAN-G 100 48  
1234 0

MPD COMDTY CY7C1009-VC 98382 9834 619809780 256K x 4 CMOS MN SOJ CSPI-  
R 32 48 1000 1 \*\*\*\*\* FA IS PENDING \*\*\*\*\*

619809782 256K x 4 CMOS MN SOJ CSPI-R 32 48 1000 0

619809783 256K x 4 CMOS MN SOJ CSPI-R 32 48 1000 0

CY7C1020-ZSC 98077 9816 619803865 32K x16 CMOS MN TSOP KOREA-H 44  
80 120 0

619803866 32K x16 CMOS MN TSOP KOREA-H 44 80 120 0

9817 619803867 32K x16 CMOS MN TSOP KOREA-H 44 80 120  
0

SYNC CY7C1011-ZC 98313 9825 619806805 128K x 16 CMOS MN TSOP KOREA-H  
44 48 1021 0

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44	96	452	0	SYNC	CY7C1011-ZC	98313	9825	619806805	128K x 16	CMOS	MN	TSOP	KOREA-H
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	HTS	165C/NO BIAS	MPD	SYNC	CY7C1011-ZC	98297	9829	619807660	128K x 16	CMOS	MN
	TSOP CSPI-R	44 336 49 0									

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CY7C109-VC MR83039 9806 519801396 128K x 8(5) CMOS MN SOJ INDNS-O 32  
168 80 0

SYNC CY7C1011-ZC 98313 9817 619804340 128K x 16 CMOS MN TSOP KOREA-H  
44 168 50 0

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T/S -55C TO 150C MPD SYNC CY7C1011-ZC 98297 9829 619807660 128K x 16 CMOS MN TSOP  
CSPI-R 44 100 50 0  
200 50 0

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TC2 -65C TO 150C DCD DPORT CY7C038-AC 98368 9824 619806221 64K x 18 DP CMOS MN  
TQFP TAIWAN-G 100 300 48 0

MPD COMDTY CY7C1020-ZSC 98077 9816 619803865 32K x16 CMOS MN TSOP  
KOREA-H 44 300 45 0

619803866 32K x16 CMOS MN TSOP KOREA-H 44 300 45 0

9817 619803867 32K x16 CMOS MN TSOP KOREA-H 44 300 45

0

CY7C109-VC MR83040 9806 519801396 128K x 8(5) CMOS MN SOJ INDNS-O 32

SYNC CY7C1011-ZC 98297 9829 619807660 128K x 16 CMOS MN TSOP CSPI-R

619807703	128K x 16	CMOS	MN	TSOP	CSPI-R	44	300	50	0
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Technology	Test	Test	Divi- Func- Condition	sion tion	Device	Assembly Eval#	Pro- Wfr Pkg Assy D/C Lot No Description	No Dura Qty Loc type	Qty Loc	Pin
tion Test	Fail	Fail	Mode							

50 0