

# **CYPRESS SEMICONDUCTOR CORPORATION PRODUCT RELIABILITY REPORT**

---

QUARTER 2, 1998



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

Marc Hartranft  
Reliability Manager

## STANDARD STRESS TEST DESCRIPTIONS

<u>TEST</u>	<u>DESCRIPTION</u>
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, Hermetic
PCT	Pressure Cooker Test, 121°C, 100%RH, No Bias
HAST	Hi-Accel Saturation Test, 140°C, 85%RH, 5.5V Bias
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

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

## ASSEMBLY LOCATION

<u>ID</u>	<u>COMPANY/LOCATION</u>
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	Alphatech/Thailand
THLAND-Z	Hana/Thailand

## DESCRIPTION OF DATA TABLE COLUMN HEADINGS

<u>COLUMN HEADING</u>	<u>DESCRIPTION OF COLUMN CONTENTS</u>
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  
(Q298)**

LONG TERM FAILURE RATE SUMMARY					
PROCESS	DEVICE HOURS			FAILED	FAILURE MODE
	150C	125C	TOTAL <sup>1</sup> @ 150C		
FAMOS TOTAL	17,848	236,000	94,784	0	
FLASH TOTAL	0	0	NO DATA	NO DATA	
SRAM/LOGIC TOTAL	2,021,868	2,235,848	2,750,754	4	2 PARTICLES/1 POLY DEF./1 SPEED DEGRATION
BICMOS TOTAL	0	440,500	143,603	2	2 UNKNOWN
LFR TOTAL	2,039,716	2,912,348	2,989,141	6	2 PARTICLES/1 POLY DEF./1 SPEED DEGRATION/2 UNKNOWN
EARLY FAILURE RATE SUMMARY					
PROCESS	UNITS TESTED			FAILED	FAILURE MODE
	150C	125C	TOTAL		
FAMOS TOTAL	1,039	320	1,359	0	
FLASH TOTAL	0	0	NO DATA	NO DATA	
SRAM/LOGIC TOTAL	13,457	9,192	22,649	5	1 UNKNOWN/2 PARTICLES/2 OTHERS
BICMOS TOTAL	0	729	729	0	
EFR TOTAL	14,496	10,241	24,737	5	---
HTSSL FAILURE RATE SUMMARY					
PROCESS	DEVICE HOURS			FAILED	FAILURE MODE
	150C	125C	TOTAL <sup>1</sup> @ 150C		
FAMOS TOTAL	0	59,000	19,234	0	
FLASH TOTAL	0	0	NO DATA	NO DATA	
SRAM/LOGIC TOTAL	92,232	579,172	281,042	0	
BICMOS TOTAL	0	0	NO DATA	NO DATA	
HTSSL TOTAL	92,232	638,172	300,276	0	---
TEMP CYCLE FAILURE RATE SUMMARY					
PROCESS	DEVICE CYCLE			FAILED	FAILURE MODE
	150C	125C	TOTAL <sup>1</sup> @ 150C		
FAMOS TOTAL	23,900	0	23,900	0	
FLASH TOTAL	13,800	0	13,800	0	
SRAM/LOGIC TOTAL	858,700	13,500	862,210	1	1 TOPSIDE DAMAGE
BICMOS TOTAL	67,800	0	67,800	6	6 TOPSIDE CRACKS
TC TOTAL	964,200	13,500	967,710	7	---

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

**RELIABILITY DATA SUMMARY  
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HAST FAILURE RATE SUMMARY					
PROCESS	DEVICE HOURS			FAILED	FAILURE MODE
	140C	130C	TOTAL <sup>1</sup> @ 140C		
FAMOS TOTAL	0	0	NO DATA	NO DATA	
FLASH TOTAL	0	0	NO DATA	NO DATA	
SRAM/LOGIC TOTAL	196,480	9,728	201,646	3	2 LIFTING BOND/1 TOPSIDE DAMAGE
BICMOS TOTAL	13,568	0	13,568	18	18 TOPSIDE CRACKS
HAST TOTAL	210,048	9,728	215,214	21	---
LTOL FAILURE RATE SUMMARY					
PROCESS	DEVICE HOURS		FAILED	FAILURE MODE	
FAMOS TOTAL	NO DATA		NO DATA		
FLASH TOTAL	NO DATA		NO DATA		
SRAM/LOGIC TOTAL	45,000		0		
BICMOS TOTAL	NO DATA		NO DATA		
LTOL TOTAL	45,000		0	---	
PCT FAILURE RATE SUMMARY					
PROCESS	DEVICE HOURS		FAILED	FAILURE MODE	
FAMOS TOTAL	NO DATA		NO DATA		
FLASH TOTAL	12,936		0		
SRAM/LOGIC TOTAL	259,104		14	7 LIFTING BOND/4 TOPSIDE CRACKS/3 POPCORN	
BICMOS TOTAL	11,928		0		
PCT TOTAL	283,968		14	----	
DRET FAILURE RATE SUMMARY					
PROCESS	PLASTIC (165C)		HERMETIC(250C)		FAILURE MODE
	DHR	REJ	DHR	REJ	
FAMOS TOTAL	84,000	0	0	0	
FLASH TOTAL	NO DATA	NO DATA	NO DATA	NO DATA	
SRAM/LOGIC TOTAL	78,000	0	NO DATA	NO DATA	
BICMOS	76,000	0	NO DATA	NO DATA	
DRET TOTAL	238,000	0	NO DATA	NO DATA	----

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Technology	Test	Test Condition	Divi- sion	Func- tion	Device	Eval#	Assembly D/C	Lot No	Description	Pro- cess	Wfr Loc	Pkg type	Assy Loc	No Pin	Dura tion	Qty Test	Qty Fail	Fail Mode
BICMOS-SM1	DRET	165C/N/A	DCD	CHNL	CY7B991-JC	M82027	9807	219800993	PSCB	BiCMOS	TX	PLCC	ALPHA-X	32	168 1000	76 76	0 0	
	HAST	140C/5.5V	DCD	CHNL	CY7B991-JC	M74070	9733	219708729	PSCB	BiCMOS	TX	PLCC	ALPHA-X	32	128 128 128 128	12 15 21 29	0 15 0 0	15 TOPSIDE CRACKS
						M80156	9746	219711890	PSCB	BiCMOS	TX	PLCC	ALPHA-X	32	128 128	13 16	3 0	3 TOPSIDE CRACKS 2 THERMAL EOS
	HTOL2	125C/5.75V	DCD	CHNL	CY7B991-JC	M74066	9733	219708729	PSCB	BiCMOS	TX	PLCC	ALPHA-X	32	96 500 1000 2000	115 115 115 114	0 0 0 1	1 EOS/1 UNKNOWN
						M80152	9746	219711890	PSCB	BiCMOS	TX	PLCC	ALPHA-X	32	96 500 1000 2000	114 113 112 99	0 1 0 0	1 EOS/1 UNKNOWN 13 EOS
						M82006	9807	219800993	PSCB	BiCMOS	TX	PLCC	ALPHA-X	32	96 96	176 324	0 0	
	PCT	121C/100%RH	DCD	CHNL	CY7B991-JC	M82024	9807	219800993	PSCB	BiCMOS	TX	PLCC	ALPHA-X	32	168	71	0	
	TC2	150C/-65C	DCD	CHNL	CY7B991-JC	M82028	9807	219800993	PSCB	BiCMOS	TX	PLCC	ALPHA-X	32	300	45	0	
				ENET	CY7B8392-JC	M74078	9716	519704354	TRANSCEIVER	BiCMOS	TX	PLCC	INDNS-O	28	300	45	4	4 TOPSIDE CRACKS
						M74091	9708	519701901	TRANSCEIVER	BiCMOS	TX	PLCC	INDNS-O	28	300	46	0	

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BICMOS-SM1	TC2	150C/-65C	DCD	ENET	CY7B8392-JC	M80195	9752	519714771	TRANSCEIVER	BiCMOS	TX	PLCC	INDNS-O	28	300	45	1 1	TOPSIDE CRACKS
						M80196	9802	519800401	TRANSCEIVER	BiCMOS	TX	PLCC	INDNS-O	28	300	45	1 1	TOPSIDE CRACKS



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FAMOS-P20	HTOL	140C/5.75V	PLD	MAX	CY7C341-JC	97497	9748	219712389	REPROG.PAL	CMOS	TX	PLCC	ALPHA-X	84	72	251	0	
								219712390	REPROG.PAL	CMOS	TX	PLCC	ALPHA-X	84	72	212	0	
		150C/5.75V	MPD	PROM	CY7C251-TMB	97454	9746	349705494	16K x 8	CMOS	TX	WCER	PHIL-M	28	184	48	0	
	HTOL2	125C/5.75V	PLD	MAX	CY7C341-JC	97497		619804184P	REPROG.PAL	CMOS	TX	PLCC	ALPHA-X	84	96	202	0	
	TC2	150C/-65C	MPD	PROM	CY7C251-TMB	97454	9746	349705494	16K x 8	CMOS	TX	WCER	PHIL-M	28	100	48	0	

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FAMOS-P26	DRET	165C/N/A	MPD	PROM	CY27C010-PC	M82022	9747	619709651	128K x 8	CMOS	TX	PDIP	KOREA-H	32	168 1000	84 84	0 0	
	HTOL	140C/5.75V	PLD	MAX	CY7C342B-HMB	97356	9731	219708281P	REPROG.PAL	CMOS	TX	CERQ	ALPHA-X	68	72	184	0	
								9810	219801652	REPROG.PAL	CMOS	TX	CERQ	ALPHA-X	68	72	207	0 1 EOS
					CY7C342B-RMB	97356	9734	219708941	REPROG.PAL	CMOS	TX	WPGA	ALPHA-X	68	72	185	0	
		150C/5.75V	MPD	PROM	CY27H010-WMB	97458	9742	349705318	128K x 8	CMOS	TX	WCER	PHIL-M	32	184	49	0	
	HTOL2	125C/5.75V	MPD	PROM	CY27C010-PC	M80168	9738	619707247	128K x 8	CMOS	TX	PDIP	KOREA-H	32	96 500 1000 2000	118 118 118 118	0 0 0 0	
	HTSSL2	125C/5.5V	MPD	PROM	CY27C010-PC	M80169	9738	619707247	128K x 8	CMOS	TX	PDIP	KOREA-H	32	96 500	118 118	0 0	
	TC2	150C/-65C	MPD	PROM	CY27C010-PC	M82023	9747	619709651	128K x 8	CMOS	TX	PDIP	KOREA-H	32	300	48	0	
					CY27H010-WMB	97458	9742	349705318	128K x 8	CMOS	TX	WCER	PHIL-M	32	100	47	0	

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FLASH-FL28D	PCT	121C/100%RH	PLD	FLASH	CY7C375I-AC	M82041	9811	619802675	128 MCEL FL CMOS		TX	TQFP	KOREA-Q	160	96 168	77 77	0 0	
	TC2	150C/-65C	PLD	FLASH	CY7C375I-AC	M82043	9811	619802675	128 MCEL FL CMOS		TX	TQFP	KOREA-Q	160	300	46	0	

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SRAM/LOGIC-C2AN	PCT	121C/100%RH	DCD	VME	VIC068A-BC	M80164	9746	349705554	VME INTERF.	CMOS	MN	PPGA	PHIL-M	144	96 168	77 77	0 0	23 EXTERNAL CONTAMINATION
	TC2	150C/-65C	DCD	VME	VIC068A-BC	M80166	9746	349705554	VME INTERF.	CMOS	MN	PPGA	PHIL-M	144	300	47	0	

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SRAM/LOGIC-L1	HTOL	150C/5.75V	DCD	VME	CY7C9101-LMB	97459	9741	349705366	16-BITS SLI	CMOS	TX	LCC	PHIL-M	68	184	49	0	

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SRAM/LOGIC-L20	PCT	121C/100%RH	DCD	VME	CY7C611A-NC	M80182	9731	349704147	RISC CONTRL	CMOS	TX	PQFP	HK-B	160	96 168	78 71	7 4 7 7	TOPSIDE CRACKS/3 LIFTING BOND POPCOR

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SRAM/LOGIC-L27	PCT	121C/100%RH	CPD	FCT	CY74FCT2574TQC	MR81076	9806	619801650	8 BIT REG.	CMOS	MN	SSOP	CSPI-R	20	96 168	76 76	0 0	

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SRAM/LOGIC-L28	HAST	140C/3.63V	CPD	TTECH	CY2310NZPVC	98108	9811	349800519	SDRAM BUFF.	CMOS	MN	SSOP	PHIL-M	28	128	47	0	
	HTS	165C/N/A	CPD	TTECH	CY2310NZPVC	98108	9811	349800519	SDRAM BUFF.	CMOS	MN	SSOP	PHIL-M	28	336	47	0	
	PCT	121C/100%RH	CPD	TTECH	CY22751PVC	M82054	9804	619800214	CLOCK SYN.	CMOS	MN	SSOP	CSPI-R	48	168	80	0	
	T/S	150C/-55C	CPD	TTECH	CY2310NZPVC	98108	9811	349800519	SDRAM BUFF.	CMOS	MN	SSOP	PHIL-M	28	100 200	47 47	0 0	
	TC2	150C/-65C	CPD	TTECH	CY2310NZPVC	98108	9811	349800519	SDRAM BUFF.	CMOS	MN	SSOP	PHIL-M	28	300	47	0	
								349800520	SDRAM BUFF.	CMOS	MN	SSOP	PHIL-M	28	300	47	0	
								349800521	SDRAM BUFF.	CMOS	MN	SSOP	PHIL-M	28	300	47	0	



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Technology	Test	Test Condition	Divi- sion	Func- tion	Device	Eval#	D/C	Assembly Lot No	Description	Pro- cess	Wfr Loc	Pkg type	Assy Loc	No Pin	Dura tion	Qty Test	Qty Fail	Fail Mode
SRAM/LOGIC-L31	HAST	140C/3.63V	CPD	FCT	CY74FCT163LD952	98074	9747	349705947	16 BIT REG.	CMOS	MN	TSSO	MALAY-U	56	128	48	0	
	HTS	165C/N/A	CPD	FCT	CY74FCT163LD952	98074	9747	349705947	16 BIT REG.	CMOS	MN	TSSO	MALAY-U	56	336 1000	48 48	0 0	
	T/S	150C/-55C	CPD	FCT	CY74FCT163LD952	98074	9747	349705947	16 BIT REG.	CMOS	MN	TSSO	MALAY-U	56	100 200	48 48	0 0	
	TC2	150C/-65C	CPD	FCT	CY74FCT163LD952	98074	9747	349705947	16 BIT REG.	CMOS	MN	TSSO	MALAY-U	56	300	48	0	
								349705948	16 BIT REG.	CMOS	MN	TSSO	MALAY-U	56	300	48	0	
								349705949	16 BIT REG.	CMOS	MN	TSSO	MALAY-U	56	300	48	0	

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SRAM/LOGIC-R21	HAST	140C/3.3V	MPD	COMDTY	CY7C188-VC	MR82049	9529	349514426	32K x 9	CMOS	TX	SOJ	KOREA-L	32	128	76	0	
	HTOL2	125C/3.65V	MPD	COMDTY	CY7C188-VC	MR82048	9529	349514426	32K x 9	CMOS	TX	SOJ	KOREA-L	32	96	500	0	
		125C/5.75V	MPD	COMDTY	CY7C185-VC	M80145	9745	619709631	SML/64K	CMOS	TX	SOJ	CSPI-R	28	96	116	0	
															500	116	0	
															1000	114	0	2 EOS
															2000	114	0	
	HTSSL2	125C/5.5V	MPD	COMDTY	CY7C185-VC	M80146	9745	619709631	SML/64K	CMOS	TX	SOJ	CSPI-R	28	96	116	0	
															500	116	0	
	PCT	121C/100%RH	MPD	COMDTY	CY7C188-VC	MR82087	9529	349514426	32K x 9	CMOS	TX	SOJ	KOREA-L	32	96	80	0	
															168	80	0	

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Technology	Test	Test Condition	Division	Function	Device	Eval#	D/C	Assembly Lot No	Description	Process	Wfr Loc	Pkg type	Assy Loc	No Pin	Dura tion	Qty Test	Qty Fail	Fail Mode
SRAM/LOGIC-R28	HAST	130C/5.5V	DCD	SPCM	CY7C4245-AC	M82011	9745	619709392	4Kx18 FIFO	CMOS	MN	TQFP	KOREA-Q	64	128	76	0	
		140C/5.5	DCD	SPCM	CY7C136-JC	M82016	9704	349700386	2K x 8 DP	CMOS	MN	PLCC	PHIL-M	52	128	80	0	
			MPD	COMDTY	CY7C109-VC	MR82026	9802	519714897	128K x 8	CMOS	MN	SOJ	INDNS-O	32	128	79	0	
					CY7C199-ZC	MR81069	9808	619802243	32K x 8	CMOS	MN	TSOP	CSPI-R	28	128	76	1 1	TOPSIDE DAMAGE
		140C/5.5V	MPD	COMDTY	CY7C1009-VC	MR82062	9807	619711668	256K x 4	CMOS	MN	SOJ	CSPI-R	32	128	45	2 2	LIFTING BONDS
		140C/5.75V	MPD	COMDTY	CY7C199-VC	MR82032	9806	619801593	32K x 8	CMOS	TX	SOJ	CSPI-R	28	128	76	0	
		HTOL2 125C/3.65V	MPD	COMDTY	CY7C1009-VC	MR82010	9803	619711085	256K x 4	CMOS	MN	SOJ	CSPI-R	32	96	487	0	
					CY7C109-VC	MR82001	9802	519714897	128K x 8	CMOS	MN	SOJ	INDNS-O	32	96	496	0	
					CY7C199-VC	MR82002	9806	619801593	32K x 8	CMOS	TX	SOJ	CSPI-R	28	96	489	0	
					CY7C199-ZI	MR82014	9808	619802112	32K x 8	CMOS	MN	TSOP	CSPI-R	28	96	489	0	
		125C/5.75V	DCD	SPCM	CY7C136-JC	M82007	9704	349700386	2K x 8 DP	CMOS	MN	PLCC	PHIL-M	52	96	500	0	
			MPD	COMDTY	CY7C1009-VC	M80127	9741	619708282	256K x 4	CMOS	MN	SOJ	CSPI-R	32	96	117	0	
															500	117	0	
															1000	116	0	1 EOS
															2000	116	0	
					CY7C188-VC	M80135	9745	349705798	32K x 9	CMOS	MN	SOJ	PHIL-M	32	96	116	0	
															500	116	0	
															1000	113	0	
															2000	113	0	

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SRAM/LOGIC-R28	HTOL2	125C/5.75V	MPD	COMDTY	CY7C199-VC	M80113	9746 619709733	32K x 8	CMOS	TX	SOJ	CSPI-R	28		96	117	0
															500	117	0
															1000	117	0
															2000	117	0
						M80181	9748 619710553	32K x 8	CMOS	MN	SOJ	PHIL-GW	28		96	117	0
															500	117	0
															1000	117	0
															2000	117	0
	HTSSL2	125C/5.5V	MPD	COMDTY	CY7C1009-VC	M80128	9741 619708282	256K x 4	CMOS	MN	SOJ	CSPI-R	32		96	117	0
															500	113	0 4 EOS
					CY7C188-VC	M80136	9745 349705798	32K x 9	CMOS	MN	SOJ	PHIL-M	32		96	115	0
															500	115	0
					CY7C199-VC	M80114	9746 619709733	32K x 8	CMOS	TX	SOJ	CSPI-R	28		96	117	0
															500	117	0
						M80180	9748 619710553	32K x 8	CMOS	MN	SOJ	PHIL-GW	28		96	118	0
															500	116	0 2 EOS
	PCT	121C/100%RH	DCD	SPCM	CY7C136-JC	M82018	9704 349700386	2K x 8 DP	CMOS	MN	PLCC	PHIL-M	52		96	80	0
															168	80	0
					CY7C4245-AC	M82013	9750 619710597	4Kx18 FIFO	CMOS	MN	TQFP	KOREA-Q	64		96	77	0
															168	77	0
						M83009	9746 619710040	4Kx18 FIFO	CMOS	MN	TQFP	KOREA-Q	64		168	77	0
			MPD	COMDTY	CY7C1009-VC	MR82064	9807 619711668	256K x 4	CMOS	MN	SOJ	CSPI-R	32		96	76	0
															168	76	0
					CY7C109-VC	M80185	9749 519713657	128K x 8	CMOS	MN	SOJ	INDNS-O	32		96	76	0
															168	76	0
						MR82028	9802 519714897	128K x 8	CMOS	MN	SOJ	INDNS-O	32		96	79	0

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SRAM/LOGIC-R28	PCT	121C/100%RH	MPD	COMDTY	CY7C109-VC	MR82028	9802	519714897	128K x 8	CMOS	MN	SOJ	INDNS-O	32	168	79	0	
					CY7C199-VC	MR82034	9806	619801593	32K x 8	CMOS	TX	SOJ	CSPI-R	28	96 168	76 76	0 0	
					CY7C199-ZI	MR82082	9808	619802112	32K x 8	CMOS	MN	TSOP	CSPI-R	28	168	73	0	
	TC2	150C/-65C	MPD	COMDTY	CY7C109-VC	98071	9812	519802968	128K x 8	CMOS	MN	SOJ	INDNS-O	32	300	48	0	
								519802969	128K x 8	CMOS	MN	SOJ	INDNS-O	32	300	48	0	
								519802970	128K x 8	CMOS	MN	SOJ	INDNS-O	32	300	48	0	
						MR82027	9802	519714897	128K x 8	CMOS	MN	SOJ	INDNS-O	32	300	46	0	
					CY7C188-VC	MR81012	9748	349705698	32K x 9	CMOS	MN	SOJ	PHIL-M	32	300	45	0	
					CY7C199-DMB	97458	9745	349705478	32K x 8	CMOS	MN	CERD	PHIL-M	28	100	50	0	
					CY7C199-VC	MR82033	9806	619801593	32K x 8	CMOS	TX	SOJ	CSPI-R	28	300	45	0	
					CY7C199-ZC	MR81068	9808	619802243	32K x 8	CMOS	MN	TSOP	CSPI-R	28	300	45	0	
						MR81071	9807	619801847	32K x 8	CMOS	MN	TSOP	CSPI-R	28	300	45	0	
						MR81075	9803	619801783	32K x 8	CMOS	MN	TSOP	CSPI-R	28	300	45	0	
					CY7C199-ZI	MR82081	9808	619802112	32K x 8	CMOS	MN	TSOP	CSPI-R	28	300	45	1 1	TOPSIDE DAMAGE

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SRAM/LOGIC-R3	HAST	140C/	MPD	COMDTY	CY62256V-ZC	M74093	9705	349700731	32K x 8	CMOS	CA	TSOP	PHIL-M	28	128	71	0	
		140C/5.5V	MPD	COMDTY	CY7C1021-ZSC	98109	9813	619802984	64K x16	CMOS	MN	TSOP	CSPI-R	44	128	45	0	
				SYNC	CY7C1031-JC	M82049	9804	519800339	64K x 18	CMOS	MN	PLCC	INDNS-O	52	128	80	0	
	HTOL2	125C/5.75V	MPD	COMDTY	CY7C1021-ZSC	98092	9747	619709892N	64K x16	CMOS	MN	TSOP	KOREA-H	44	96	1000	0	
								619711733N	64K x16	CMOS	MN	TSOP	KOREA-H	44	96	1129	0	
								619711734N	64K x16	CMOS	MN	TSOP	KOREA-H	44	96	1118	0	
						M80159	9742	519710953	64K x 18	CMOS	MN	PLCC	INDNS-O	52	96	116	0	
																500	116	0
																1000	113	0 3 EOS
	HTS	165C/N/A	MPD	COMDTY	CY7C1021-ZSC	98109	9813	619802984	64K x16	CMOS	MN	TSOP	CSPI-R	44	336	45	0	
																1000	45	0
	HTSSL2	125C/5.5V	MPD	COMDTY	CY7C199-VC	M80194	9802	619711953	256K	CMOS	MN	SOJ	CSPI-R	28	96	116	0	
																500	116	0
				SYNC	CY7C1031-JC	M80160	9742	519710953	64K x 18	CMOS	MN	PLCC	INDNS-O	52	96	116	0	
																500	116	0
PCT		121C/100%RH	MPD	SYNC	CY7C1031-JC	M82047	9804	519800339	64K x 18	CMOS	MN	PLCC	INDNS-O	52	96	80	0	
															168	80	0	

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SRAM/LOGIC-R3	T/S	150C/-55C	MPD	COMDTY	CY7C1021-ZSC	98109	9813	619802984	64K x16	CMOS	MN	TSOP	CSPI-R	44	100 200	45 45	0 0	
	TC2	150C/-65C	MPD	COMDTY	CY7C1021-ZSC	98109	9813	619802984	64K x16	CMOS	MN	TSOP	CSPI-R	44	300	45	0	
								619803206	64K x16	CMOS	MN	TSOP	CSPI-R	44	300	45	0	
								619803207	64K x16	CMOS	MN	TSOP	CSPI-R	44	300	45	0	
					CY7C199-VC	MR81043	9802	619711953	256K	CMOS	MN	SOJ	CSPI-R	28	300	45	0	
						MR81044		619716685	256K	CMOS	MN	TSOP	CSPI-R	28	300	45	0	
				SYNC	CY7C1031-JC	M82048	9804	519800339	64K x 18	CMOS	MN	PLCC	INDNS-O	52	300	50	0	

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SRAM/LOGIC-R31	HTOL2	125C/3.45V	MPD	SYNC	CY7C1399-VC	M80109	9744	619709194	32K x 8	CMOS	MN	SOJ	PHIL-M	28	96	117	0	
															500	117	0	
															1000	114	0	3 EOS
															2000	114	0	



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SRAM/LOGIC-R32	HAST	140C/5.5	MPD	COMDTY	CY7C109-VC	MR82044	9807	519801541	128K x 8(5)	CMOS	MN	SOJ	INDNS-O	32	128	80	0	
		140C/5.5V	MPD	COMDTY	CY62128-ZAC	98107	9816	619802494	128K x 8	CMOS	MN	STSO	CSPI-R	32	128	45	0	
	HTOL	150C/3.8V	MPD	COMDTY	CY62256V-NSC	98042	9806	519801279	32K x 8	CMOS	MN	NSOI	INDNS-O	28	48	513	0	
								519801280	32K x 8	CMOS	MN	NSOI	INDNS-O	28	48	513	0	
								519801295	32K x 8	CMOS	MN	NSOI	INDNS-O	28	48	513	0	
								519801296	32K x 8	CMOS	MN	NSOI	INDNS-O	28	48	513	0	
								519801310	32K x 8	CMOS	MN	NSOI	INDNS-O	28	48	513	0	
								519801311	32K x 8	CMOS	MN	NSOI	INDNS-O	28	48	513	0	
	HTOL2	125C/3.65V	MPD	COMDTY	CY7C109-VC	MR82004	9807	519801541	128K x 8(5)	CMOS	MN	SOJ	INDNS-O	32	96	202	0	
		125C/5.75V	MPD	COMDTY	CY62256-SNC	M80117	9744	519710283	32K x 8	CMOS	CA	NSOI	INDNS-O	28	96	117	0	
																500	116	0
																1000	114	2 1 POLY DEFECT/1 SPEED DEG
																2000	113	0
					CY7C109-VC	M80131	9745	519712223	128K x 8(5)	CMOS	MN	SOJ	INDNS-O	32	96	117	0	
																500	117	0
																1000	117	0
																2000	117	0
	HTS	165C/N/A	MPD	COMDTY	CY62128-ZAC	98107	9816	619802494	128K x 8	CMOS	MN	STSO	CSPI-R	32	336	45	0	

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SRAM/LOGIC-R32	HTSSL2	125C/3.63V	MPD	COMDTY	CY62256V-ZC	M80143	9749	619710170	32K x 8	CMOS	MN	TSOP	CSPI-G	28	96 500	116 115	0 0	
		125C/5.5V	MPD	COMDTY	CY62256-SNC	M80118	9744	519710283	32K x 8	CMOS	CA	NSOI	INDNS-O	28	96 500	116 116	0 1 0	EOS
					CY7C109-VC	M80132	9745	519712223	128K x 8(5)	CMOS	MN	SOJ	INDNS-O	32	96 500	117 117	0 0	
	PCT	121C/100%RH	MPD	COMDTY	CY62256V-ZC	M80140	9749	619710170	32K x 8	CMOS	MN	TSOP	CSPI-G	28	96 168	77 11	0 0	
					CY7C109-VC	MR82046	9807	519801541	128K x 8(5)	CMOS	MN	SOJ	INDNS-O	32	96 168	77 77	0 0	
	T/S	150C/-55C	MPD	COMDTY	CY62128-ZAC	98107	9816	619802494	128K x 8	CMOS	MN	STSO	CSPI-R	32	100 200	45 45	0 0	
	TC2	150C/-65C	MPD	COMDTY	CY62128-ZAC	98107	-	619802568	128K x 8	CMOS	MN	STSO	CSPI-R	32	300	45	0	
							9816	619802528	128K x 8	CMOS	MN	STSO	CSPI-R	32	300	45	0	
					CY62256V-ZC	MR81048	9802	349706405	32K x 8	CMOS	MN	TSOP	PHIL-M	28	300	40	0	
					CY7C109-VC	M80100	9806	519801045	128K x 8(5)	CMOS	MN	SOJ	INDNS-O	32	300	45	0	
						M80199	9805	519800982	128K x 8(5)	CMOS	MN	SOJ	INDNS-O	32	300	45	0	

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SRAM/LOGIC-R32D	DRET	165C/N/A	MPD	COMDTY	CY7C1049-VC	M80107	9747	619709647	512K x 8	CMOS	MN	SOJ	KOREA-L	36	168 1000	78 78	0 0	
	HAST	140C/	MPD	COMDTY	CY7C1049-VC	98148	9816	619804072	512K x 8	CMOS	MN	SOJ	CSPI-R	36	128	45	0	
	HTOL	150C/5.75V	MPD	COMDTY	CY7C109-DMB	98021	9745	219711624	128K x 8	CMOS	MN	CERD	ALPHA-X	32	48 80 500	1007 120 120	1 0 0	1 UNKNOWN
					CY7C109-LMB	98021	9734	219708960	128K x 8	CMOS	MN	LCC	ALPHA-X	32	48 184	522 48	0 0	
							9803	219800288	128K x 8	CMOS	MN	LCC	ALPHA-X	32	48	1024	0	
								219800289	128K x 8	CMOS	MN	LCC	ALPHA-X	32	48 80 500	479 115 115	0 0 0	
	HTS	165C/N/A	MPD	COMDTY	CY7C1049-VC	98148	9816	619804072	512K x 8	CMOS	MN	SOJ	CSPI-R	36	336	45	0	
	HTSSL	150C/5.50V	MPD	COMDTY	CY7C109-LMB	98021	9734	219708960	128K x 8	CMOS	MN	LCC	ALPHA-X	32	80 168	78 78	0 0	
	T/S	150C/-55C	MPD	COMDTY	CY7C1049-VC	98148	9816	619804072	512K x 8	CMOS	MN	SOJ	CSPI-R	36	100 200	45 45	0 0	
	TC2	150C/-65C	MPD	COMDTY	CY7C1049-VC	98148	9816	619804072	512K x 8	CMOS	MN	SOJ	CSPI-R	36	300 300	45 45	0 0	

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SRAM/LOGIC-R32D	TC2	150C/-65C	MPD	COMDTY	CY7C1049-VC	98148	9816	619804129	512K x 8	CMOS	MN	SOJ	CSPI-R	36	300	44	0	
							9817	619804088	512K x 8	CMOS	MN	SOJ	CSPI-R	36	300	45	0	
					CY7C109-DMB	98021	9745	219711624	128K x 8	CMOS	MN	CERD	ALPHA-X	32	100 100	20 23	0 0	
					CY7C109-LMB	98021	9803	219800289	128K x 8	CMOS	MN	LCC	ALPHA-X	32	100	83	0	

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SRAM/LOGIC-R33	HAST	140C/3.63V	MPD	SYNC	CY7C1329-AC	98075	9743	619708021	64K x 32	CMOS	MN	TQFP	CSPI-R	100	128	48	0	
	HTS	165C/N/A	MPD	SYNC	CY7C1329-AC	98075	9743	619708050	64K x 32	CMOS	MN	TQFP	CSPI-R	100	336	48	0	
	TC2	150C/-65C	MPD	SYNC	CY7C1329-AC	98075	9740	619708099	64K x 32	CMOS	MN	TQFP	CSPI-R	100	300	48	0	
							9743	619708021	64K x 32	CMOS	MN	TQFP	CSPI-R	100	300	48	0	
								619708050	64K x 32	CMOS	MN	TQFP	CSPI-R	100	300	48	0	

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SRAM/LOGIC-R42	HAST	140C/3.63V	MPD	COMDTY	CY7C62127V-ZSI	97506	9810	619802140L	1 MEG SRAM	CMOS	MN	TSOP	KOREA-H	44	128	45	0	
	HTOL	150C/3.8V	MPD	COMDTY	CY7C62127V-ZSI	97506	9810	619802140L	1 MEG SRAM	CMOS	MN	TSOP	KOREA-H	44	80 500	120 120	0 0	
	TC2	150C/-65C	MPD	COMDTY	CY7C62127V-ZSI	97506	9810	619802140L	1 MEG SRAM	CMOS	MN	TSOP	KOREA-H	44	300	48	0	
					CY7C62127V-ZSIB	97506	9810	619802141	1 MEG SRAM	CMOS	MN	TSOP	KOREA-H	44	300	48	0	

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SRAM/LOGIC-R42D	HAST	140C/3.63V	DCD	SPCM	CY7C4285V-JC	97483	9807	219801126	64Kx18 FIFO	CMOS	MN	PLCC	ALPHA-X	68	128	45	0	
			MPD	SYNC	CY7C1334-AC	98075	9809	619801906	64K x 32	CMOS	MN	TQFP	CSPI-R	100	128	43	0 1	EOS
		140C/3/63	MPD	COMDTY	CY7C1041V33-VC	98043	9813	619802985	256K X 16	CMOS	MN	SOJ	CSPI-R	44	128	45	0	
			MPD	COMDTY	CY7C1020V33-VC	98131	9813	619802649	32K x16	CMOS	MN	SOJ	CSPI-R	44	128	44	0	
		140C/5.5V						619802650	32K x16	CMOS	MN	SOJ	CSPI-R	44	128	45	0	
	HTOL	150C/3.63V	MPD	COMDTY	CY7C1021V33-VC	97416	9809	619801835	64K x16	CMOS	MN	SOJ	CSPI-R	44	48	1550	0	
															80	119	0	
															500	119	0	
					CY7C1021V33-ZSC	97416	9810	619801885	64K x16	CMOS	MN	TSOP	KOREA-H	44	48	50	0	
		150C/3.8V	DCD	SPCM	CY7C4285V-JC	97483	9807	219801126	64Kx18 FIFO	CMOS	MN	PLCC	ALPHA-X	68	48	405	0 1	EOS
															80	405	0	
	HTOL2	125C/3.8V	MPD	COMDTY	CY7C1020V33-ZSC	97517	9811	619802538/	32K x16	CMOS	MN	TSOP	KOREA-H	44	96	1500	0	
															168	261	0	
		125C/5.75V	MPD	COMDTY	CY7C1020V33-VC	98131	9813	619802649	32K x16	CMOS	MN	SOJ	CSPI-R	44	80	116	0	
															500	116	0	
								619802650	32K x16	CMOS	MN	SOJ	CSPI-R	44	80	116	0	
															500	116	0	

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SRAM/LOGIC-R42D	HTS	165C/N/A	MPD	COMDTY	CY7C1020V33-VC	98131	9813	619802649	32K x16	CMOS	MN	SOJ	CSPI-R	44	336	38	0		
					CY7C1041V33-VC	98043	9813	619802985	256K X 16	CMOS	MN	SOJ	CSPI-R	44	336	45	0		
	HTSSL	150C/3.63V	DCD	SPCM	CY7C4285V-JC	97483	9807	219801126	64Kx18 FIFO	CMOS	MN	PLCC	ALPHA-X	68	80 168	76 76	0 0		
	PCT	121C/100%RH	MPD	COMDTY	CY7C1021V33-BAC	MR82013	9803	619710085	64K x16	CMOS	MN	SBGA	TAIWN-G	48	96 168	61 60	0 0		
						MR82106	9816	619804057	64K x16	CMOS	MN	SBGA	TAIWN-G	48	96 168	80 80	0 0		
					CY7C1049V33-VC	97396	9802	619711944	512K x 8	CMOS	MN	SOJ	KOREA-L	36	168	50	0		
	T/S	125C/-55C	MPD	COMDTY	CY7C1041V33-VC	98043	9813	619802985	256K X 16	CMOS	MN	SOJ	CPSI-R CSPI-R	44 44	200 100	45 45	0 0		
		150C/-55C	MPD	SYNC	CY7C1334-AC	98075	9807	619801352	64K x 32	CMOS	MN	TQFP	CSPI-R	100	100 200	48 47	0 0		
	TC	125C/-40C	MPD	SYNC	CY7C1334-AC	98075	9809	619801906	64K x 32	CMOS	MN	TQFP	CSPI-R	100	300	45	0		



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SRAM/LOGIC-R42D	TC2	150C/-65C	DCD	SPCM	CY7C4285V-JC	97483	9807	219801126	64Kx18 FIFO	CMOS	MN	PLCC	ALPHA-X	68	300	45	0	
			MPD	COMDTY	CY7C1019V33-VC	97416	9811	519801735	128K x 8	CMOS	MN	SOJ	INDNS-O	44	300	46	0	
					CY7C1020V33-VC	98131	9813	619802649	32K x16	CMOS	MN	SOJ	CSPI-R	44	300	45	0	
								619802650	32K x16	CMOS	MN	SOJ	CSPI-R	44	300	45	0	
								619802651	32K x16	CMOS	MN	SOJ	CSPI-R	44	300	45	0	
					CY7C1020V33-ZSC	97517	9811	619802538/	32K x16	CMOS	MN	TSOP	KOREA-H	44	300	48	0	
					CY7C1021V33-BAC	MR82007	9803	619710085	64K x16	CMOS	MN	SBGA	TAIWN-G	48	300	45	0	
						MR82107	9816	619804057	64K x16	CMOS	MN	SBGA	TAIWN-G	48	300	50	0	
					CY7C1021V33-VC	97416	9809	619801835	64K x16	CMOS	MN	SOJ	CSPI-R	44	300 300	48 50	0 0	
					CY7C1021V33-ZSC	MR82051	9816	619803608	64K x16	CMOS	MN	TSOP	KOREA-H	44	300	55	0	
					CY7C1041V33-VC	98043	9813	619802893	256K X 16	CMOS	MN	SLJ	CSPI-R	44	300	48	0	
								619802985	256K X 16	CMOS	MN	SOJ	CSPI-R	44	300	48	0	
								619803035	256K X 16	CMOS	MN	SOJ	CSPI-R	44	300	48	0	
				SYNC	CY7C1334-AC	98075	9809	619801906	64K x 32	CMOS	MN	TQFP	CSPI-R	100	300	45	0	

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Technology	Test	Test Condition	Division	Function	Device	Eval#	D/C	Assembly Lot No	Description	Process	Wfr Loc	Pkg type	Assy Loc	No Pin	Dura tion	Qty Test	Qty Fail	Fail Mode
SRAM/LOGIC-R42HD	HAST	140C/5.5V	MPD	COMDTY	CY7C1049-VC	98248	9805	619800740	512K x 8	CMOS	MN	SOJ	KOREA-L	36	128	47	0	
					CY7C1049-VCB	98086	9813	619803319	512K x 8	CMOS	MN	SOJ	KOREA-L	36	128	50	0	
					CY7C109-VC	98064	9745	519712560	128K x 8(5)	CMOS	MN	SOJ	INDNS-O	32	128	46	0	
							9746	519712898	128K x 8(5)	CMOS	MN	SOJ	INDNS-O	32	128 256	46 46	0 0	
							9751	519714390	128K x 8(5)	CMOS	MN	SOJ	INDNS-O	32	128	46	0	
					CY7C109-VC	98085	9811	519802689/	128K x 8(5)	CMOS	MN	SOJ	INDNS-O	32	128	46	0	
	HTOL	150C/5.75V	MPD	COMDTY	CY7C1049-VC	98248	9805	619800740	512K x 8	CMOS	MN	SOJ	KOREA-L	36	80 500	385 385	0 0	
					CY7C1049-VCB	98086	9813	619803319	512K x 8	CMOS	MN	SOJ	KOREA-L	36	48 48 48 80 80 200 500	440 490 756 55 324 378 377	0 0 0 0 1 0 1	PARTICLE
					CY7C109-VC	98248	9807	619801747	512K x 8	CMOS	MN	SOJ	KOREA-L	36	80 500	400 400	0 0	
						98064	9751	519714390	128K x 8(5)	CMOS	MN	SOJ	INDNS-O	32	80 500 1000	528 527 527	0 0 0	
					CY7C109-VC	98085	9811	519802689/	128K x 8(5)	CMOS	MN	SOJ	INDNS-O	32	48 48 48 80 500	498 1494 1664 385 383	0 2 2 0 0	PARTICLE/1 OTHERS PARTICLE/1 OTHERS

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Technology	Test	Test Condition	Division	Function	Device	Eval#	D/C	Assembly Lot No	Description	Process	Wfr Loc	Pkg type	Assy Loc	No Pin	Dura tion	Qty Test	Qty Fail	Fail Mode
SRAM/LOGIC-R42HD	HTS	165C/N/A	MPD	COMDTY	CY7C109-VC	98064	9745	519712560	128K x 8(5)	CMOS	MN	SOJ	INDNS-O	32	336 1000	46 46	0 0	
	HTSSL	150C/5.5V	MPD	COMDTY	CY7C1049-VC	98248	9805	619800740	512K x 8	CMOS	MN	SOJ	KOREA-L	36	80 168	79 79	0 1 0	EOS
					CY7C1049-VCB	98086	9813	619803319	512K x 8	CMOS	MN	SOJ	KOREA-L	36	80 168	80 80	0 0	
						98248	9807	619801747	512K x 8	CMOS	MN	SOJ	KOREA-L	36	80 168	80 80	0 0	
					CY7C109-VC	98064	9745	519712560	128K x 8(5)	CMOS	MN	SOJ	INDNS-O	32	80 168	78 78	0 0	
							9751	519714390	128K x 8(5)	CMOS	MN	SOJ	INDNS-O	32	80 168	78 78	0 0	
	LTOL	-30C/6.50V	MPD	COMDTY	CY7C109-VC	98064	9745	519712560	128K x 8(5)	CMOS	MN	SOJ	INDNS-O	32	500 1000	45 45	0 0	
	PCT	121C/100%RH	MPD	COMDTY	CY7C1021-VC	98115	9819	619804711	64K x16	CMOS	MN	SOJ	CSPI-R	44	96 168	50 50	0 0	
					CY7C1049-VCB	98086	9813	619803319	512K x 8	CMOS	MN	SOJ	KOREA-L	36	168	48	0	
					CY7C109-VC	98085	9811	519802689/	128K x 8(5)	CMOS	MN	SOJ	INDNS-O	32	96 168	46 46	0 0	
	TC2	150C/-65C	MPD	COMDTY	CY7C1021-VC	98115	9819	619804711	64K x16	CMOS	MN	SOJ	CSPI-R	44	300	50	0	
					CY7C1049-VC	98248	9805	619800740	512K x 8	CMOS	MN	SOJ	KOREA-L	36	300	47	0	

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Technology	Test	Test Condition	Divi- sion	Func- tion	Device	Eval#	D/C	Assembly Lot No	Description	Pro- cess	Wfr Loc	Pkg type	Assy Loc	No Pin	Dura tion	Qty Test	Qty Fail	Fail Mode
SRAM/LOGIC-R42HD	TC2	150C/-65C	MPD	COMDTY	CY7C1049-VCB	98086	9813	619803319	512K x 8	CMOS	MN	SOJ	KOREA-L	36	300	48	0	
						98248	9807	619801747	512K x 8	CMOS	MN	SOJ	KOREA-L	36	300	48	0	
							9812	619802812L	512K x 8	CMOS	MN	SOJ	KOREA-L	36	300	47	0	
					CY7C109-VC	98064	9745	519712560	128K x 8(5)	CMOS	MN	SOJ	INDNS-O	32	300	46	0	
							9746	519712898	128K x 8(5)	CMOS	MN	SOJ	INDNS-O	32	300	46	0	
							9751	519714390	128K x 8(5)	CMOS	MN	SOJ	INDNS-O	32	300	46	0	
						98085	9811	519802689/	128K x 8(5)	CMOS	MN	SOJ	INDNS-O	32	300	46	0	