

CYPRESS SEMICONDUCTOR CORPORATION

PRODUCT RELIABILITY REPORT

QUARTER 1, 1999



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

Ed Russell
Reliability Manager

STANDARD STRESS TEST DESCRIPTIONS

<u>TEST</u>	<u>DESCRIPTION</u>
HTOL	High Temp Op Life, 150°C, Dynamic 115% V _{CC} Nominal
HTOL2	High Temp Op Life, 125°C, Dynamic 115% V _{CC} Nominal
HTSSL	High Temp Steady State Life, 150°C, Static 115% V _{CC} Nominal
HTSSL2	High Temp Steady State Life, 125°C, Static 115% V _{CC} Nominal
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, Static 100% V _{CC} Nominal
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

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
(Q199)

LONG TERM FAILURE RATE SUMMARY					
PROCESS	DEVICE HOURS			FAILED	FAILURE MODE
	150C	125C	TOTAL* @ 150C		
FAMOS TOTAL	68,832	240,000	147,072	0	
FLASH TOTAL	0	0	0	0	
SRAM/LOGIC TOTAL	445,224	956,500	757,043	0	
BICMOS TOTAL	0	240,000	78,240	0	
LFR TOTAL	514,056	1,436,500	982,355	0	
EARLY FAILURE RATE SUMMARY					
PROCESS	UNITS TESTED			FAILED	FAILURE MODE
	150C	125C	TOTAL		
FAMOS TOTAL	1,167	124	1,291	0	
FLASH TOTAL	0	0	0	0	
SRAM/LOGIC TOTAL	16,807	12,182	28,989	3	1 BLOCKED CONTACT, 1 DELAMINATION AT OXIDE, 1 LOST UNIT
BICMOS TOTAL	0	0	0	0	
EFR TOTAL	17,974	12,306	30,280	3	1 BLOCKED CONTACT, 1 DELAMINATION AT OXIDE, 1 LOST UNIT
HTSSL FAILURE RATE SUMMARY					
PROCESS	DEVICE HOURS			FAILED	FAILURE MODE
	150C	125C	TOTAL* @ 150C		
FAMOS TOTAL	0	0	0	0	
FLASH TOTAL	0	0	0	0	
SRAM/LOGIC TOTAL	13,440	239,096	91,385	0	
BICMOS TOTAL	0	60,000	19,560	0	
HTSSL TOTAL	13,440	299,096	110,945	0	
TEMP CYCLE FAILURE RATE SUMMARY					
PROCESS	DEVICE CYCLE			FAILED	FAILURE MODE
	150C	125C	TOTAL* @ 150C		
FAMOS TOTAL	53,900	0	53,900	0	
FLASH TOTAL	15,000	0	15,000	0	
SRAM/LOGIC TOTAL	354,300	43,200	365,532	1	1 DIE CRACKING

* Equivalent Total Device Hours/Cycles. Derating factors are used for lower stress condition.

BICMOS TOTAL	0	0	0	0	
TC TOTAL	423,200	43,200	434,432	1	1 DIE CRACKING

RELIABILITY DATA SUMMARY
(Q199)

HAST FAILURE RATE SUMMARY					
PROCESS	DEVICE HOURS			FAILED	FAILURE MODE
	140C	130C	TOTAL* @ 140C		
FAMOS TOTAL	0	0	0	0	
FLASH TOTAL	0	5,632	2,991	0	
SRAM/LOGIC TOTAL	99,584	24,832	112,770	9	1 TOPSIDE DEFECT/1 TOPSIDE CRACK/1 PINHOLES IN TOPSIDE/4 ASSEMBLY DEFECT/1OPEN BOND LIFT/1 UNKNOWN
BICMOS TOTAL	0	0	0	0	
HAST TOTAL	99,584	30,464	115,760	9	1 TOPSIDE DEFECT/1 TOPSIDE CRACK/1 PINHOLES IN TOPSIDE/4 ASSEMBLY DEFECT/1OPEN BOND LIFT/1 UNKNOWN
LTOL FAILURE RATE SUMMARY					
PROCESS	DEVICE HOURS		FAILED	FAILURE MODE	
FAMOS TOTAL	0		0		
FLASH TOTAL	0		0		
SRAM/LOGIC TOTAL	47,000		0		
BICMOS TOTAL	0		0		
LTOL TOTAL	47,000		0		
PCT FAILURE RATE SUMMARY					
PROCESS	DEVICE HOURS		FAILED	FAILURE MODE	
FAMOS TOTAL	14,400		0		
FLASH TOTAL	7,392		0		
SRAM/LOGIC TOTAL	200,808		2	1 UNKNOWN/1 OPEN BOND LIFT	
BICMOS TOTAL	0		0		
PCT TOTAL	222,600		2	1 UNKNOWN/1 OPEN BOND LIFT	
DRET FAILURE RATE SUMMARY					
PROCESS	PLASTIC (165C)		HERMETIC(250C)		FAILURE MODE
	DHR	REJ	DHR	REJ	
FAMOS TOTAL	0	0	0	0	
FLASH TOTAL	0	0	0	0	
SRAM/LOGIC TOTAL	0	0	0	0	
BICMOS	0	0	0	0	

DRET TOTAL	0	0	0	0	
------------	---	---	---	---	--

Cypress Semiconductor Corporation
Quarterly Reliability Report
Quarter 1, 1999

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

BICMOS-SM1	HTOL2	125C/5.75V	DCD	CHNL	CY7B991-JC	M84015	9838 219806615	PSCB	BiCMOS TX PLCC ALPHA-X	32 500	120	0
							1000 120	0				
							2000 120	0				

	HTSSL2	125C/5.5V	DCD	CHNL	CY7B991-JC	M84016	9838 219806615	PSCB	BiCMOS TX PLCC ALPHA-X	32 96	120	0
							500 120	0				

Cypress Semiconductor Corporation
Quarterly Reliability Report
Quarter 1, 1999

Technology	Test	Divi- Test	Func- Condition	sion tion	Assembly Device	Pro- Eval#	Wfr D/C	Pkg Lot No	Assy Description	No cess	Dura Loc	Qty type	Qty Loc	Pin tion	Test	Fail	Fail Mode
FAMOS-E3	HTOL	150C/5.75V	PLD	37K	CY37192P44-JC	98405	9851	619816688	64	MCEL	CMOS	TW	PLCC	KOREA-A	44	48	125 0
	HTOL2	125C/5.75V	PLD	37K	CY37128P84-JC	98404	9850	619816468	128	MCEL	CMOS	TW	PLCC	KOREA-A	84	48	61 0 2 EOS
								48 63 0									
	PCT	121C/100%RH	PLD	37K	CY37128P84-JC	98404	9850	619816468	128	MCEL	CMOS	TW	PLCC	KOREA-A	84	168	50 0
								288 50 0									
	TC2	-65C TO 150C	PLD	37K	CY37128P84-JC	98404	9850	619816468	128	MCEL	CMOS	TW	PLCC	KOREA-A	84	300	50 0

Cypress Semiconductor Corporation
Quarterly Reliability Report
Quarter 1, 1999

Technology	Test	Divi- Test	Func- Condition	sion tion	Assembly Device	Pro- Eval#	Wfr Pkg D/C Lot No	Assy Description	No cess	Dura Qty Loc type	Qty Loc	Pin	tion	Test	Fail	Fail	Mode
FAMOS-P20	HTOL	150C/5.75V	PLD	MAX	CY7C346-RMB	98369	9842 219807311	REPROG.PAL	CMOS	TX	WPGA ALPHA-X	100	184	8	0		
							184 40 0										
	HTOL2	125C/5.75V	PLD	MAX	CY7C341-JC	M84040	9843 619812108	REPROG.PAL	CMOS	TX	PLCC KOREA-A	84	500	120	0		
							1000 120 0										
							2000 120 0										
TC2	-65 TO 150C	PLD	MAX	CY7C346-RMB	98369	9842 219807311	REPROG.PAL	CMOS	TX	WPGA ALPHA-X	100	100	47	0			
	-65C TO 150C	PLD	MAX	CY7C341-JC	M84038	9843 619812108	REPROG.PAL	CMOS	TX	PLCC KOREA-A	84	300	48	0			

Technology	Test	Divi- Test	Func- Condition	sion tion	Device	Assembly Eval#	Pro- D/C	Wfr Lot	Pkg No	Assy Description	No Loc	Dura type	Qty Loc	Qty Pin	tion Test	Fail	Fail	Mode		
FAMOS-P26	HTOL	150C/5.75V	CPD	USB	CY7C63413-PC	98365	9848	519815333/	48	712	0	USB	CMOS	TX	PDIP	INDNS-O	40	48	330	0
		MPD	PROM	CY27H010-WMB	98366	9840	619810906	128K x 8	500	120	0	CMOS	TX	WCER	PHIL-AS	32	80	120	0	
TC2	-65 TO 150C	MPD	PROM	CY27H010-WMB	98366	9840	619810906	128K x 8	CMOS	TX	WCER	PHIL-AS	32	100	48	0				
	-65C TO 150C	CPD	USB	CY7C63101A-SC	MR84015	9837	619810677	USB	CMOS	TX	SOIC	CSPI-R	24	300	50	0				

Cypress Semiconductor Corporation
Quarterly Reliability Report
Quarter 1, 1999

Technology	Test	Divi- Test	Func- Condition	sion tion	Assembly Device	Pro- Eval#	Wfr D/C	Pkg Lot No	Assy Description	No cess	Dura Loc	Qty type	Qty Loc	Pin tion	Test	Fail	Fail	Mode
FLASH-FL28D	HAST	130C/5.5V	PLD	FLASH	CY7C375I-AC	M84029	9839	619811116	128	MCEL FL CMOS	TX	TQFP	KOREA-Q	160	77	7	0	
							128	8	0									
							128	16	0									
							128	20	0									
TC2	-65C TO 150C	PLD	FLASH	CY7C371I-JC	M99103	9901	219900163	32-MCEL FL CMOS	TX	PLCC ALPHA-X	44	300	50	0				

Cypress Semiconductor Corporation
Quarterly Reliability Report
Quarter 1, 1999

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-L27	PCT		121C/100%RH			CPD FCT	CY74FCT162827TP	MR91042	9852	619817458	10 BIT REG. CMOS	MN	SSOP	CSPI-R	56	168	44	0			

Cypress Semiconductor Corporation
Quarterly Reliability Report
Quarter 1, 1999

Technology	Test	Divi- Test Condition	Func- sion tion	Assembly Device	Pro- Eval#	Wfr Pkg D/C Lot No	Assy Description	No Loc	Dura type	Qty Loc	Qty Pin	tion	Test	Fail	Fail	Mode
SRAM/LOGIC-L28	HAST	130C/5.5V	CPD	FCT	CY74FCT543TSOC	99034	9848 619815038	BUS SWITCH	CMOS	TX	SOIC	CSPI-R	24	128	48	0
							256 48 0									
							9851 619817238/	BUS SWITCH	CMOS	TX	SOIC	CSPI-R	24	128	50	0
140C/3.63	CPD	TTECH	CY2280PVC	MR84025	9821	619805614	CLOCK SYN.	CMOS	MN	SSOP	CSPI-R	48	128	44	0	
140C/3.63V	CPD	TTECH	CY22751PVC	M83019	9804	619800309	CLOCK SYN.	CMOS	MN	SSOP	CSPI-R	48	128	9	0	
							128 67 0 2 EOS									
HTOL	150C/3.8V	CPD	TTECH	CY2287PVC	98333	9847	619814987/	CLOCK SYN.	CMOS	TX	SSOP	CSPI-R	56	48	120	0
							48 300 0									
							48 300 0									
							48 300 0									
							80 120 0									
150C/5.75V	CPD	FCT	CY74FCT543TSOC	99034	9848	619815038	BUS SWITCH	CMOS	TX	SOIC	CSPI-R	24	48	524	0	
							80 524 0									
							184 118 0									
							500 118 0									
							9851 619817235/	BUS SWITCH	CMOS	TX	SOIC	CSPI-R	24	48	340	0
							80 118 0									
							500 118 0									
							619817238/	BUS SWITCH	CMOS	TX	SOIC	CSPI-R	24	48	340	0
							80 119 0									
							500 119 0									
DCD	VME	CY7C960-UMB	98461	9839	619810095	BUS Inter.	CMOS	TX	CQFP	USA-V	64	80	78	0 2 EOS		
							184 47 0									
							500 76 0 2 EOS									
HTOL2	125C/5.75V	DCD	VME	CY7C960-NC	98461	9831	619808580/	BUS Inter.	CMOS	TX	PQFP	HK-B	64	96	405	0
							96 600 0									
HTS	165C/NO BIAS	CPD	FCT	CY74FCT543TSOC	99034	9848	619815038	BUS SWITCH	CMOS	TX	SOIC	CSPI-R	24	336	48	0
							1000 48 0									
HTSSL	150C/5.5V	CPD	FCT	CY74FCT543TSOC	99034	9848	619815038	BUS SWITCH	CMOS	TX	SOIC	CSPI-R	24	80	80	0
							168 80 0									

Cypress Semiconductor Corporation
Quarterly Reliability Report
Quarter 1, 1999

Technology	Test	Divi- Test Condition	Func- sion tion	Assembly Device	Pro- Eval#	Wfr Pkg D/C Lot No	Assy Description	No Loc type	Qty Loc	Pin	tion	Test	Fail	Fail Mode		
SRAM/LOGIC-L28	LTOL	-30C/6.50V		CPD FCT	CY74FCT543TSOC	99034	9848	619815038	BUS SWITCH	CMOS	TX	SOIC	CSPI-R	24	500	47 0
	PCT	121C/100%RH		CPD FCT	CY74FCT543TSOC	99034	9848	619815038	BUS SWITCH	CMOS	TX	SOIC	CSPI-R	24	168	48 0
				TTECH	CY2280PVC	MR84023	9821	619805614	CLOCK SYN.	CMOS	MN	SSOP	CSPI-R	48	168	79 0
					CY2287PVC	98333	9847	619814987/	CLOCK SYN.	CMOS	TX	SSOP	CSPI-R	56	168	48 0
TC2	-65 TO 150C	DCD	VME	CY7C960-UMB	98461	9839	619810095	BUS Inter.	CMOS	TX	CQFP	USA-V	64	100	46	0
	-65C TO 150C	CPD	FCT	CY74FCT543TSOC	99034	9822	619805959/	BUS SWITCH	CMOS	TX	SOIC	CSPI-R	24	300	48	0
					9823	619806310/	BUS SWITCH	CMOS	TX	SOIC	CSPI-R	24	300	47	0	
					9848	619815038	BUS SWITCH	CMOS	TX	SOIC	CSPI-R	24	300	48	0	
					9851	619817238/	BUS SWITCH	CMOS	TX	SOIC	CSPI-R	24	300	50	0	
				TTECH	CY2287PVC	98333	9847	619814987/	CLOCK SYN.	CMOS	TX	SSOP	CSPI-R	56	300	48 0

Cypress Semiconductor Corporation
Quarterly Reliability Report
Quarter 1, 1999

Technology	Test	Divi- Test	Func- Condition	sion	tion	Device	Assembly Eval#	Pro- D/C	Wfr Lot No	Pkg Description	Assy cess	No	Dura	Qty	Qty	Pin	tion	Test	Fail	Fail	Mode
SRAM/LOGIC-L31	PCT	121C/100%RH	CPD	FCT	CY74FCT162245AT	MR84006	9833	619809457	16	BIT	TRAN	CMOS	MN	SSOP	CSPI-R	48	168	79	0	1	EOS

Cypress Semiconductor Corporation
Quarterly Reliability Report
Quarter 1, 1999

Technology	Test	Divi- Test	Func- Condition	sion tion	Assembly Device	Pro- Eval#	Wfr Pkg D/C Lot No	Assy Description	No cess	Dura Qty Loc type	Qty Loc	Pin	tion	Test	Fail	Fail	Mode
SRAM/LOGIC-R21	HTOL	150C/5.75V	MPD	COMDTY	CY7C199-DMB	98366	9837 619810589	32K x 8	CMOS	TX	CERD PHIL-AS	28	80	116	0		
							500 116 0										
TC2	-65 TO 150C	MPD	COMDTY	CY7C199-DMB	98366	9837 619810589	32K x 8	CMOS	TX	CERD PHIL-AS	28	100	47	0			
	-65C TO 150C	DCD	DPORT	CY7C136-JC	M84006	9828 619806900	2K x 8 DP	CMOS	TX	PLCC KOREA-A	52	300	50	0			

Cypress Semiconductor Corporation
Quarterly Reliability Report
Quarter 1, 1999

Technology	Test	Divi- Test Condition	Func- sion tion	Assembly Device	Pro- Eval#	Wfr Pkg D/C Lot No	Assy Description	No Loc	Dura Qty type Loc	Qty Pin	tion	Test	Fail	Fail Mode			
SRAM/LOGIC-R28	HAST	140C/5.5	MPD	COMDTY	CY7C188-VC	MR84065	9836 619810239	32K x 9	CMOS	MN	SOJ	CSPI-R	32	128	45	0	
					CY7C197-VC	MR91023	9849 519815657	256K x 1	CMOS	TX	SOJ	CSPI-R	24	128	44	0	
	140C/5.5V	DCD	DPORT	CY7C0251-AC	98302	9833	619809165	8K x 16 DP	CMOS	TX	TQFP	KOREA-Q	100	128	44	0	1 BI (or HAST) Board / Circuit Problem
																	128 47 0
HTOL	150C/3.8V	DCD	FIFO	CY7C4245V-ASC	99083	9901	619818118	4Kx18 FIFO	CMOS	MN	TQFP	KOREA-Q	64	48	287	0	
																	48 300 0 48 731 1 1 Blocked Contact 48 741 0 1 EOS
	150C/5.75	MPD	COMDTY	CY7C192-VC	99011	9848	219808135N	64K x 4	CMOS	TX	SOJ	ALPHA-X	28	48	616	0	
																	219808300 64K x 4 CMOS TX SOJ ALPHA-X 28 48 874 0
	150C/5.75V	DCD	DPORT	CY7C0241-AC	98393	9837	619810551	4K x 18	CMOS	TX	TQFP	KOREA-Q	100	48	999	0	
																	4K x 18 DP CMOS TX TQFP KOREA-Q 100 80 125 0
																	CY7C0251-AC 98302 9833 619809165 8K x 16 DP CMOS TX TQFP KOREA-Q 100 48 125 0
																	48 467 0 48 505 0 48 536 0 80 125 0 500 125 0
																	9837 619810549 8K x 16 DP CMOS TX TQFP KOREA-Q 100 48 509 1 1 Delamination at Oxide/Dielectric Layer
																	80 120 0 500 120 0
	150C/7.0V	DCD	DPORT	CY7C136-JC	98482	9832	519809589/	2K x 8 DP	CMOS	TX	PLCC	INDNS-O	52	48	1001	0	
																	9844 519813532/ 2K x 8 DP CMOS TX PLCC INDNS-O 52 48 1003 0
HTOL2	125C/5.75V	DCD	DPORT	CY7C136-JC	M84009	9839	519811761	2K x 8 DP	CMOS	MN	PLCC	INDNS-O	52	500	120	0	
																	1000 120 0 1500 120 0 2000 120 0
HTS	165C/NO BIAS	MPD	COMDTY	CY7C188-VC	MR84066	9836	619810239	32K x 9	CMOS	MN	SOJ	CSPI-R	32	336	50	0	

Cypress Semiconductor Corporation
Quarterly Reliability Report
Quarter 1, 1999

Technology	Test	Divi- Test	Func- Condition	sion tion	Assembly Device	Pro- Eval#	Wfr D/C	Pkg Lot	Assy No	Dura Loc	Qty type	Qty Loc	Pin tion	Test	Fail	Fail Mode
SRAM/LOGIC-R28	HTSSL2	125C/5.5V	DCD	DPORT	CY7C136-JC	M84020	9839	519811761	2K x 8 DP	CMOS	MN	PLCC	INDNS-O	52	96	120 0
							500	120	0							
PCT	121C/100%RH	DCD	DPORT	CY7C0251-AC	98302	9833	619809165	8K x 16 DP	CMOS	TX	TQFP	KOREA-Q	100	168	47	0
MPD	COMDTY	CY7C185-PC	MR91029	9852	519816332	SML/64K	CMOS	TX	PDIP	INDNS-O	28	168	45	0		
	CY7C188-VC	MR84063	9836	619810239	32K x 9	CMOS	MN	SOJ	CSPI-R	32	168	50	0			
		MR91007	9852	619813043	32K x 9	CMOS	TX	SOJ	CSPI-R	32	168	45	0			
TC2	-65C TO 150C	DCD	DPORT	CY7C0251-AC	98302	9833	619809165	8K x 16 DP	CMOS	TX	TQFP	KOREA-Q	100	300	47	0
					9837	619810548	8K x 16 DP	CMOS	TX	TQFP	KOREA-Q	100	300	50	0	
						619810549	8K x 16 DP	CMOS	TX	TQFP	KOREA-Q	100	300	50	0	
	CY7C136-JC	98482	9844	519813532/	2K x 8 DP	CMOS	TX	PLCC	INDNS-O	52	300	48	0			
MPD	COMDTY	CY7C185-PC	MR91030	9852	519816332	SML/64K	CMOS	TX	PDIP	INDNS-O	28	300	45	0		
	CY7C188-VC	MR84064	9836	619810239	32K x 9	CMOS	MN	SOJ	CSPI-R	32	300	50	0			
		MR91008	9852	619813043	32K x 9	CMOS	TX	SOJ	CSPI-R	32	300	45	0			

Cypress Semiconductor Corporation
Quarterly Reliability Report
Quarter 1, 1999

Technology	Divi- Func- Test Test Condition sion tion			Assembly Device Eval#		Pro- Wfr Pkg D/C Lot No		Assy No Description Loc		Dura Qty Loc type Loc		Qty Pin tion Test		Fail Fail		Mode	
SRAM/LOGIC-R3	HAST	140C/5.5	MPD	COMDTY	CY7C199-VC	MR84037	9842	619811723	256K	CMOS	MN	SOJ	CSPI-R	28	128	42	0 3 EOS
	HTS	165C/NO BIAS	MPD	COMDTY	CY7C199-VC	MR84038	9842	619811723	256K	CMOS	MN	SOJ	CSPI-R	28	336	50	0
	PCT	121C/100%RH	MPD	COMDTY	CY7C1021-VC	MR83051	9821	619805130	64K x16	CMOS	MN	SOJ	CSPI-R	44	168	90	1 1 UNKNOWN
					CY7C1021-ZSC	MR83060	9825	619806720	64K x16	CMOS	MN	TSOP	CSPI-R	44	168	80	0
	TC2	-65C TO 150C	MPD	COMDTY	CY7C1021-ZSC	MR83061	9825	619806720	64K x16	CMOS	MN	TSOP	CSPI-R	44	300	56	1 1 Die Cracking
					CY7C199-VC	MR84036	9842	619811723	256K	CMOS	MN	SOJ	CSPI-R	28	300	50	0

Cypress Semiconductor Corporation
Quarterly Reliability Report
Quarter 1, 1999

Technology	Test	Divi- Test	Func- Condition	sion	tion	Assembly Device	Pro- Eval#	Wfr D/C	Pkg Lot No	Assy Description	No cess	Dura Loc	Qty type	Qty Loc	Pin	tion	Test	Fail	Fail	Mode
SRAM/LOGIC-R31	PCT	121C/100%RH	MPD	SYNC	CY7C1399-VC	MR84099	9848	619812723	32K x 8	CMOS	MN	TSOP	CSPI-R	28	168	45	0			
TC2	-65C TO 150C	MPD	SYNC	CY7C1399-VC	MR84100	9848	619812723	32K x 8	CMOS	MN	TSOP	CSPI-R	28	300	45	0				

Cypress Semiconductor Corporation
Quarterly Reliability Report
Quarter 1, 1999

Technology	Test	Test Condition	Divi- sion tion	Func- Device	Assembly Eval#	Pro- D/C Lot No	Wfr Pkg Description	Assy cess	No Loc type	Dura Qty Loc	Qty	Pin	tion	Test	Fail	Fail Mode			
SRAM/LOGIC-R32	HAST	140C/3.3		MPD	COMDTY CY62256V-ZC	MR83023	9807	619801398	32K x 8	CMOS	MN	TSOP	CSPI-G	28	128	76	3	1	Topside Defect/1 Topside Crack/1 Pinholes
HTOL2	125C/3.45V			MPD	COMDTY CY62256V-ZC	M84024	9803	619800354	32K x 8	CMOS	MN	TSOP	CSPI-G	28	96	120	0		
								500	120	0									
								1000	120	0									
								2000	120	0									
	125C/5.75V			MPD	COMDTY CY62256V-SC	M84026	9838	619811100	32K x 8	CMOS	CA	SOIC	KOREA-L	28	96	120	0		
								500	119	0	1	EOS							
								1000	119	0									
								2000	119	0									
HTSSL2	125C/3.3V			MPD	COMDTY CY62256V-ZC	M84025	9803	619800354	32K x 8	CMOS	MN	TSOP	CSPI-G	28	96	120	0		
								500	120	0									
	125C/5.5V			MPD	COMDTY CY62256V-SC	M84030	9838	619811100	32K x 8	CMOS	CA	SOIC	KOREA-L	28	96	120	0		
								500	119	0									
PCT	121C/100%RH			MPD	COMDTY CY62256-SNC	MR84056	9837	519811387	32K x 8	CMOS	CA	NSOI	INDNS-O	28	168	45	0		
					CY62256V-ZC	97346	9812	619803151	32K x 8	CMOS	MN	TSOP	CSPI-G	28	96	45	0		
								168	45	0									

Cypress Semiconductor Corporation
Quarterly Reliability Report
Quarter 1, 1999

Technology	Test	Divi- Test	Func- Condition	sion	tion	Device	Assembly Eval#	Pro- D/C	Wfr Lot	Pkg No	Assy Description	cess	No Loc	Dura type	Qty Loc	Qty	Pin	tion	Test	Fail	Fail	Mode
SRAM/LOGIC-R32D	PCT	121C/100%RH	MPD	COMDTY	CY7C199-VC	MR91076	9903	619900012	32K x 8(5)	CMOS	MN	SOJ	CSPI-R	28	168	45	1	1	Open	-	Bond	Lift

Cypress Semiconductor Corporation
Quarterly Reliability Report
Quarter 1, 1999

Technology	Test	Divi- Test	Func- Condition	sion tion	Assembly Device	Pro- Eval#	Wfr D/C	Pkg Lot No	Assy Description	No cess	Dura Loc	Qty type	Qty Loc	Pin	tion	Test	Fail	Fail	Mode
SRAM/LOGIC-R42	HAST	130C/3.63V	MPD	COMDTY	CY7C62127V-BAI	98373	9834	619807063	1 MEG SRAM	CMOS	MN	SBGA TAIWAN-G	48 128 48	4 4	Assembly	Defect			
HTOL	150C/3.8V	MPD	COMDTY	CY62256V-ZC	99012	9851	619815366L	32K x 8	CMOS	MN	TSOP CSPI-R	28 48 493	0						
							619816611L	32K x 8	CMOS	MN	TSOP CSPI-R	28 48 469	0						
							619816612L	32K x 8	CMOS	MN	TSOP CSPI-R	28 48 490	1	1	Lost Device				
							619816684L	32K x 8	CMOS	MN	TSOP CSPI-R	28 48 478	0						
							619816727L	32K x 8	CMOS	MN	TSOP CSPI-R	28 48 498	0						
							619816731L	32K x 8	CMOS	MN	TSOP CSPI-R	28 48 498	0						
							9852 619816728L	32K x 8	CMOS	MN	TSOP CSPI-R	28 48 489	0						
							619816729L	32K x 8	CMOS	MN	TSOP CSPI-R	28 48 496	0						
							619816730L	32K x 8	CMOS	MN	TSOP CSPI-R	28 48 494	0						
HTOL2	125C/5.75V	MPD	COMDTY	CY62148-SC	98502	9851	619816794	512K x 8	CMOS	MN	SOIC TAIWAN-G	32 96 1397	0						
HTS	165C/NO BIAS	MPD	COMDTY	CY7C62127V-BAI	98373	9834	619807063	1 MEG SRAM	CMOS	MN	SBGA TAIWAN-G	48 336 47	0						
							1000	47	0										
PCT	121C/100%RH	MPD	COMDTY	CY7C62127V-BAI	M99102	9830	619808658	1 MEG SRAM	CMOS	MN	SBGA TAIWAN-G	48 168 49	0						
T/S	-55C TO 150C	MPD	COMDTY	CY7C62127V-BAI	98373	9834	619807063	1 MEG SRAM	CMOS	MN	SBGA TAIWAN-G	48 100 48	0						
							200	48	0										
TC	-40C TO 125C	MPD	COMDTY	CY7C62127V-BAI	98373	9834	619807063	1 MEG SRAM	CMOS	MN	SBGA TAIWAN-G	48 300 48	0						
							619807065	1 MEG SRAM	CMOS	MN	SBGA TAIWAN-G	48 300 48	0						
							619808617	1 MEG SRAM	CMOS	MN	SBGA TAIWAN-G	48 300 48	0						

Cypress Semiconductor Corporation
Quarterly Reliability Report
Quarter 1, 1999

Technology	Test	Divi- Test Condition	Func- sion tion	Assembly Device	Pro- Eval#	Wfr Pkg D/C Lot No	Assy Description	No Loc type	Qty Loc	Qty Pin	tion	Test	Fail	Fail	Mode		
SRAM/LOGIC-R42D	HAST	140C/3.3		MPD	COMDTY	CY7C1021V33-ZSC	MR83087	9812	619802905	64K x16	CMOS	MN	TSOP KOREA-H	44	128	80	2 1 Open- Bond Lift / 1
							Unknown										
		140C/3.63		MPD	COMDTY	CY7C1021V33-VC	MR84080	9845	619811706	64K x16	CMOS	MN	SOJ CSPI-R	44	128	45	0
						CY7C1021V33-ZSC	MR84044	9839	619810959	64K x16	CMOS	MN	TSOP KOREA-H	44	128	45	0
HTOL	150C/3.8V			DCD	FIFO	CY7C43684V-AC	98517	9853	619817891	16Kx36x2	CMOS	MN	TQFP KOREA-Q	128	48	14	0
							48 990	0									
PCT	121C/100%RH			MPD	COMDTY	CY7C1021V33-VC	MR84078	9845	619811706	64K x16	CMOS	MN	SOJ CSPI-R	44	168	45	0
						CY7C1021V33-ZSC	MR84042	9839	619810959	64K x16	CMOS	MN	TSOP KOREA-H	44	168	46	0
TC2	-65C TO 150C			MPD	COMDTY	CY7C1021V33-VC	MR84079	9845	619811706	64K x16	CMOS	MN	SOJ CSPI-R	44	300	45	0
						CY7C1021V33-ZSC	MR84043	9839	619810959	64K x16	CMOS	MN	TSOP KOREA-H	44	300	45	0

Technology	Test	Divi- Func-	Condition	sion tion	Device	Assembly Eval#	Pro- D/C	Wfr Pkg Lot No	No Assy	Dura Qty	Qty	Loc type	Loc	Pin tion	Test	Fail	Fail Mode
SRAM/LOGIC-R42H	HTOL2	125C/5.75V			MPD	COMDTY CY62148-SC	98502	9851 619816877	512K x 8	CMOS	MN	SOIC TAIWAN-G	32	96	131	0	
	HTOL3	125C/6.5V			MPD	COMDTY CY62128-SC	99106	9847 619814532	128K x 8	CMOS	MN	SOIC TAIWAN-G	32	48	1687	0	
						9905 619901754	128K x 8	CMOS	MN	SOIC TAIWAN-G	32	48	1674	0			
		CY62256-SNC	99084	9905 519901754	32K x 8	CMOS	MN	NSOI INDNS-O	28	48	20	0					
							48	533	0								
							48	910	0								
					519901755	32K x 8	CMOS	MN	NSOI INDNS-O	28	48	17	0				
							48	611	0								
							48	849	0								
					519901756	32K x 8	CMOS	MN	NSOI INDNS-O	28	48	14	0				
							48	696	0								
							48	700	0								

Cypress Semiconductor Corporation
Quarterly Reliability Report
Quarter 1, 1999

Technology	Test	Divi- Test	Func- Condition	Assembly sion tion Device	Pro- Eval#	Wfr D/C Lot No	Pkg Description	Assy cess	No Loc type	Qty Loc	Pin	tion	Test	Fail	Fail	Mode	
<hr/>																	
SRAM/LOGIC-R42HD HAST	140C/5.5	MPD	COMDTY	CY7C1021-VC	MR91049	9851	619815548	64K x16	CMOS	MN	SOJ	CSPI-R	44	128	45	0	
				CY7C109-VC	MR84051	9840	519812158	128K x 8(5)	CMOS	MN	SOJ	INDNS-O	32	128	50	0	
	140C/5.5V	MPD	COMDTY	CY7C1009-VC	98446	9842	619811835	256K x 4	CMOS	MN	SOJ	CSPI-R	32	128	45	0	
<hr/>																	
HTOL	150C/3.8V	DCD	DPORT	CY7C028V-AC	98533	9908	619903365	64K x 16 DP	CMOS	MN	TQFP	TAIWAN-G	100	48	360	0	
				CY7C038V-AC	98533	9908	619902997	64K x 18 DP	CMOS	MN	TQFP	TAIWAN-G	100	48	360	0	
					9909	619904710	64K x 18 DP	CMOS	MN	TQFP	TAIWAN-G	100	48	360	0		
<hr/>																	
HTOL2	125C/5.75V	MPD	COMDTY	CY7C109-VC	M84031	9835	519810178	128K x 8(5)	CMOS	MN	SOJ	INDNS-O	32	96	120	0	
							500	120	0								
							1000	119	0								
							2000	119	0								
				SYNC	CY7C1011-ZC	98515	619814769L	128K x 16	CMOS	MN	TSOP	CSPI-R	44	96	496	0	1 EOS
							619814770L	128K x 16	CMOS	MN	TSOP	CSPI-R	44	96	543	0	
							619814771L	128K x 16	CMOS	MN	TSOP	CSPI-R	44	96	539	0	
<hr/>																	
HTS	165C/NO BIAS	MPD	COMDTY	CY7C1049-VCB	MR84031	9839	619810988	512K x 8	CMOS	MN	SOJ	CSPI-R	36	336	50	0	
				CY7C109-VC	MR84052	9840	519812158	128K x 8(5)	CMOS	MN	SOJ	INDNS-O	32	336	50	0	
<hr/>																	
HTSSL2	125C/5.5V	MPD	COMDTY	CY7C109-VC	M84032	9835	519810178	128K x 8(5)	CMOS	MN	SOJ	INDNS-O	32	96	119	0	
							500	119	0								
<hr/>																	
PCT	121C/100%RH	MPD	COMDTY	CY7C1021-VC	MR84085	9851	619811004	64K x16	CMOS	MN	SOJ	CSPI-R	44	168	45	0	
					MR91048	9851	619815548	64K x16	CMOS	MN	SOJ	CSPI-R	44	168	45	0	
				CY7C109-VC	MR84049	9840	519812158	128K x 8(5)	CMOS	MN	SOJ	INDNS-O	32	168	50	0	
				SYNC	CY7C1011-ZC	MR91083	9903	619815422	128K x 16	CMOS	MN	TSOP	CSPI-R	44	168	45	0
<hr/>																	
TC2	-65C TO 150C	MPD	COMDTY	CY7C1009-VC	98446	9841	619811577	256K x 4	CMOS	MN	SOJ	CSPI-R	32	300	46	0	

Cypress Semiconductor Corporation
Quarterly Reliability Report
Quarter 1, 1999

Technology	Test	Divi- Func- Test Condition	sion tion	Assembly Device	Pro- Wfr Pkg Assy Eval#	No Dura Qty D/C Lot No	Qty Description	Loc type	Loc	Pin	tion	Test	Fail	Fail	Mode		
SRAM/LOGIC-R42HD	TC2	-65C TO 150C	MPD	COMDTY	CY7C1009-VC	98446	9842	619811745	256K x 4	CMOS	MN	SOJ	CSPI-R	32	300	46	0
					619811835	256K x 4	CMOS	MN	SOJ	CSPI-R	32	300	46	0			
		CY7C1049-VCB	MR84029	9839	619810988	512K x 8	CMOS	MN	SOJ	CSPI-R	36	300	50	0			
		CY7C109-VC	MR84050	9840	519812158	128K x 8(5)	CMOS	MN	SOJ	INDNS-O	32	300	50	0			
		SYNC CY7C1011-ZC	MR91086	9903	619815422	128K x 16	CMOS	MN	TSOP	CSPI-R	44	300	45	0			

Cypress Semiconductor Corporation
Quarterly Reliability Report
Quarter 1, 1999

Technology	Test	Divi- Test	Func- Condition	sion	tion	Assembly Device	Pro- Eval#	Wfr D/C	Pkg Lot No	Assy Description	No	Dura	Qty	Qty	Pin	tion	Test	Fail	Fail	Mode
SRAM/LOGIC-R52H	HAST	140C/3.63	MPD	COMDTY	CY62128V-ZAIB	MR84072	9848	619814823	128K x 8	CMOS	MN	STSO	CSPI-R	32	128	50	0			
PCT	121C/100%RH	MPD	COMDTY	CY62128V-ZAIB	MR84070	9848	619814823	128K x 8	CMOS	MN	STSO	CSPI-R	32	168	45	0				