

Cypress Semiconductor Qualification Report

QTP# 95515/96024 Version 3.0
July, 2003

64K SRAM, RAM28 TECHNOLOGY	
MARKETING PART NUMBER	DEVICE DESCRIPTION
CY7C185/186	8K x 8 Static RAM, OE & CE, Common I/O
CY6264	8K x 8 Static RAM, OE & CE, Common I/O
CY7C161/162	16K x 4 Static RAM, OE & CE, Separate I/O
CY7C164	16K x 4 Static RAM, no OE, Common I/O
CY7C166	16K x 4 Static RAM, OE & CE, Common I/O
CY7C187	64K x 1 Static RAM, no OE, Separate I/O

CYPRESS TECHNICAL CONTACT FOR QUALIFICATION DATA:

Ed Russell
Reliability Director
(408) 432-7069

Rene Rodgers
Reliability Engineering
(408) 943-2732

PRODUCT DESCRIPTION (for qualification)

Information provided in this document is intended for generic qualification and technically describes the Cypress part supplied:

Marketing Part #:	CY7C185		
Package:	28-pin, 300-mil SOJ		
Device Description:	8K x 8 Static RAM (R28 process, 256K SRAM Chop)		
Cypress Division:	Cypress Semiconductor Corporation		
Overall Die (or Mask) REV Level (pre-requisite for qualification):			Rev. L
What ID markings on Die:	7C185C		

TECHNOLOGY/FAB PROCESS DESCRIPTION - R28

Number of Metal Layers:	2	Metal Composition:	Metal 1: Ti/TiW/Al-Si/TiW, 500A/1.2KA/6KA/1.2KA Metal 2: TiW/Al-Si/Ti, 1.2KA/10KA/150A
Passivation Type and Materials:	7000A TEOS + 6000A Si ₂ N ₄		
Free Phosphorus contents in top glass layer(%):	N/A		
Die Coating(s), if used:	Polyimide		
Generic Process Technology/Design Rule (μ -drawn):	CMOS, Double Poly, Double Metal /0.65 μ m		
Gate Oxide Material/Thickness (MOS):	SiO ₂ / 165 A		
Name/Location of Die Fab (prime) Facility:	Cypress Semiconductor - Bloomington, MN		
Die Fab Line ID/Wafer Process ID:	Fab3/R28		



PLASTIC PACKAGE/ASSEMBLY DESCRIPTION

Package Outline, Type, or Name:	28-pin, 300-mil SOJ		
Mold Compound Name/Manufacturer:	Sumitomo EME-6300H(R)		
Lead Frame material:	Copper		
Lead Finish, composition:	Solder Plated, 85%Sn, 15%Pb		
Die Attach Area Plating:	Silver Spot		
Die Attach Method:	Paste	Die Attach Material:	Silver Epoxy
Wire Bond Method:	Thermosonic	Wire Material/Size:	Gold / 1.3 mil
JESD22-A112 Moisture Sensitivity Level:	Level 1		
Name/Location of Assembly (prime) facility:	Cypress Bangkok, Thailand (ALPHA-X)		

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



RELIABILITY TESTS PERFORMED

Stress/Test	Test Condition (Temp/Bias)	Result P/F
Electrostatic Discharge Human Body Model (ESD-HBM)	2,200V MIL-STD-883, Method 3015.7	P
Electrostatic Discharge Charge Device Model (ESD-CDM)	2,000V Cypress Spec. 25-00020	P
Latchup Sensitivity	In accordance with JEDEC 17. Cypress Spec. 01-00081	P
Sort Yields	Yield = 87.5% (based on lot average of 2200 and 2514 gross die per wafer)	P
Class Yield	Yield = 98.3% (6471/6538)	P



DEVICE RELATED RELIABILITY TEST DATA

QTP#: 95311¹

DEVICE	ASSY-LOC	FABLOT#	ASSYLOT#	DURATION	S/S	Rej	Fail Mode
STRESS: HIGH TEMP DYNAMIC OPERATING LIFE-EARLY FAILURE RATE (150C, 5.75V)							
CY7C185-XVC	ALPHA-X	3527562	219511700	48	755	0	
STRESS: HI-ACCEL SATURATION TEST (140C, 85%RH, 5.5V), PRECONDITION 48 HRS PCT							
CY7C185-XVC	ALPHA-X	3527562	219511700	128	54	0	
-STRESS: HIGH TEMP STEADY STATE LIFE TEST (150C, 5.75V)							
CY7C185-XVC	ALPHA-X	3527562	219511700	80	81	0	
CY7C185-XVC	ALPHA-X	3527562	219511700	168	81	0	
STRESS: HIGH TEMP DYNAMIC OPERATING LIFE-LATENT FAILURE RATE (150C, 5.75V)							
CY7C185-XVC	ALPHA-X	3527562	219511700	80	135	0	
CY7C185-XVC	ALPHA-X	3527562	219511700	500	135	0	
STRESS: PRESSURE COOKER TEST (121C, 100%RH)							
CY7C185-XVC	ALPHA-X	3527562	219511700	168	52	0	
STRESS: TEMP CYCLE, COND. C, -65 TO 150C, PRECONDITION 48 HRS PCT							
CY7C185-XVC	ALPHA-X	3527562	219511700	300	54	0	
CY7C185-XVC	ALPHA-X	3527562	219511700	1000	54	0	

¹ Qtp # 95311, 64K SRAM, 7C185 Rev. K, R28 process.



DEVICE RELATED RELIABILITY TEST DATA

QTP#: 96024²

DEVICE	ASSY-LOC	FABLOT#	ASSYLOT#	DURATION	S/S	REJ	FAIL MODE
STRESS: HIGH TEMP DYNAMIC OPERATING LIFE-EARLY FAILURE RATE (150C, 5.75V)							
CY7C185-XVCB	ALPHA-X	3546099	219600563	48	5179	0	
CY7C185-XVCB	ALPHA-X	3547225	219600565	48	5280	0	
CY7C185-XVCB	ALPHA-X	3548367	219600567	48	5191	0	

² Qtp # 96024, 64K SRAM, 7C185 Rev. L, R28 process, production burn-in elimination.