

# Cypress Semiconductor Product Qualification Report

QTP# 97226 VERSION 2.0  
August, 2003

**CY2280**

**Pentium II™ Compatible Clock Synthesizer/Driver with 100 Mhz Support**

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## **CYPRESS TECHNICAL CONTACT FOR QUALIFICATION DATA:**

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<b>PRODUCT DESCRIPTION (for qualification)</b>	
Qualification Purpose: Qualify mask change on CY227* to produce CY2280	
Marketing Part #:	CY2280
Package:	48 pins SSOP
Device Description:	Pentium II Compatible Clock Synthesizer/Driver
Cypress Division:	Cypress Semiconductor Corporation - CPD Division
Overall Die (or Mask) REV Level (pre-requisite for qualification):	Rev. A
What ID markings on Die:	7C83710A

<b>TECHNOLOGY/FAB PROCESS DESCRIPTION - L28</b>			
Number of Metal Layers:	2	Metal Composition:	Metal 1: 500A Ti/1,200A TiW/6,000A Al/1,200A TiW Metal 2: 1,500A TiW//10,000A Al/150A Ti
Passivation Type and Materials:	3,000A TEOS + 15,000A Si <sub>2</sub> N <sub>4</sub>		
Free Phosphorus contents in top glass layer(%):	N/A		
Die Coating(s), if used:	N/A		
Generic Process Technology/Design Rule (μ-drawn):	CMOS, Single Poly, Double Metal /0.65 μm		
Gate Oxide Material/Thickness (MOS):	SiO <sub>2</sub> / 145 A		
Name/Location of Die Fab (prime) Facility:	Cypress Semiconductor - Bloomington, MN		
Die Fab Line ID/Wafer Process ID:	Fab3/L28		

PLASTIC PACKAGE/ASSEMBLY DESCRIPTION			
Package Outline, Type, or Name:	48 Pins SSOP		
Mold Compound Name/Manufacturer:	Sumitomo EME-6300		
Lead Frame material:	Copper		
Lead Finish, composition:	Solder Plated, 85%Sn, 15%Pb		
Die Attach Area Plating:	Solder Plate		
Die Attach Method:	Epoxy	Die Attach Material:	Ablestik
Wire Bond Method:	Thermosonic	Wire Material/Size:	Gold / 1.3 mil
JESD22-A112 Moisture Sensitivity Level	Level 1		
Assembly Line ID and Process ID:	OSE, Taiwan (TAIWAN-T)		

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

**RELIABILITY TESTS PERFORMED**

<b>Stress/Test</b>	<b>Test Condition (Temp/Bias)</b>	<b>Result P/F</b>
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	10V In accordance with JEDEC 17. Cypress Spec. 01-00081	P

**DEVICE RELATED RELIABILITY TEST DATA**

**QTP#: 96513<sup>1</sup>**

DEVICE	ASSY-LOC	FABLOT#	ASSYLOT#	DURATION	S/S	REJ	FAIL MODE
<b>STRESS: HIGH TEMP DYNAMIC OPERATING LIFE-EARLY FAILURE RATE (150C, 3.65V)</b>							
CY2273APVC-1	KOREA-A	3705598	3705598	48	630	0	
CY2273APVC-1	TAIWN-T	3716122	619704148	48	508	0	
<b>STRESS: ESD-CHARGE DEVICE MODEL (2000V)</b>							
CY2278PAC-1	KOREA-L	3715952	619703688	COMP	3	0	
<b>STRESS: ESD-HUMAN BODY CIRCUIT PER MIL STD 883, METHOD 3015 (4400V)</b>							
CY2277APVC-1	KOREA-L	3701143	3701143.03	COMP	3	0	
CY2276PVC-11	KOREA-A	3713782	3713782.03	COMP	3	0	
CY2278PAC-1	KOREA-L	3715952	619703688	COMP	3	0	
<b>STRESS: HI-ACCEL SATURATION TEST (140C, 5.5V), PRECOND. 168 HRS 85C/85%RH</b>							
CY2276PVC-1	KOREA-L	3705598	3705598.A	128	50	0	
CY2276PVC-11	CSPI-R	3716099	619704633	128	45	0	
<b>STRESS: HIGH TEMP DYNAMIC OPERATING LIFE-LATENT FAILURE RATE (150C, 3.65V)</b>							
CY2273APVC-1	KOREA-A	3705598	3705598	80	120	0	
CY2273APVC-1	KOREA-A	3705598	3705598	500	120	0	
CY2273APVC-1	TAIWN-T	3716122	619704148	500	116	0	
<b>STRESS: DYNAMIC LATCH-UP TESTING (10V)</b>							
CY2278PAC-1	KOREA-L	3715952	619703688	DATA	3	0	
<b>STRESS: TC COND. C, -65 TO 150C, PRECOND. 168 HRS 85C/85%RH</b>							
CY2276PVC-1	KOREA-L	3701143	3701143.03	300	50	0	
CY2276PVC-1	KOREA-L	3701143	3701143.03	1000	50	0	
CY2276PVC-1	KOREA-L	3705598	3705598.A	300	50	0	
CY2276PVC-1	KOREA-L	3705598	3705598.A	1000	50	0	
CY2276PVC-11	KOREA-A	3713782	3713782.03	300	47	0	
CY2276PVC-11	KOREA-A	3713782	3713782.03	1000	47	0	

<sup>1</sup> QTP 96513, Pentium and Pentium II Clock Synthesizer/Driver, CY227\* product in L28 Technology, Fab 4 Qualification.