

# **Cypress Semiconductor Package Qualification Report**

**QTP# 97458 VERSION 1.0**

**January, 2002**

<p><b>28-lead Ceramic Dual-In-Line Package (CerDIP)</b> <b>32-lead Ceramic Windowed Dual-In-Line Package (CerDIP)</b> <b>Anam Philippines</b></p>
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### PACKAGE QUALIFICATION HISTORY

<b>Qual Report</b>	<b>Description of Qualification Purpose</b>	<b>Date Comp</b>
97458	32-lead Ceramic Windowed Dual-In-Line (W-CerDIP) package, with die size N/A, and 28-lead Ceramic Dual-In-Line (CerDIP) package, with die size 125 x 361mils at Anam Philippines	Aug 98

<b>HERMETIC PACKAGE/ASSEMBLY DESCRIPTION</b>	
<b>Package Designation:</b>	D28
<b>Package Outline, Type, or Name:</b>	28-lead Ceramic Dual-In-Line (CerDIP)
<b>Lead Seal Method/Material:</b>	Glass / KC700 or T187
<b>Mold Compound Flammability Rating:</b>	N/A
<b>Oxygen Rating Index:</b>	N/A
<b>Lead Frame Material:</b>	A42
<b>Lead Finish, Composition / Thickness:</b>	Solder Dip 85%SN, 15%pB
<b>Die Backside Preparation Method/Metallization:</b>	N/A
<b>Die Separation Method:</b>	Wafer Saw
<b>Die Attach Method:</b>	Ag / Glass Paste
<b>Die Attach Supplier:</b>	QMI
<b>Die Attach Material:</b>	2419MA
<b>Bond Diagram Designation</b>	10-02071
<b>Wire Bond Method:</b>	Wedge
<b>Wire Material/Size:</b>	Al/ 1.25mil
<b>Thermal Resistance Theta JA °C/W:</b>	N/A
<b>Package Cross Section Yes/No:</b>	N/A
<b>Assembly Process Flow:</b>	49-14999
<b>Name/Location of Assembly (prime) facility:</b>	Anam Philippines (PHIL-M)

<b>ELECTRICAL TEST / FINISH DESCRIPTION</b>	
<b>Test Location:</b>	Anam Philippines (PHIL-M)
<b>Fault Coverage:</b>	100%

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

<b>HERMETIC PACKAGE/ASSEMBLY DESCRIPTION</b>	
<b>Package Designation:</b>	W32
<b>Package Outline, Type, or Name:</b>	32-lead Ceramic Windowed Dual-In-Line (W-CerDIP)
<b>Lead Seal Method/Material:</b>	Glass / KC700 or T187
<b>Mold Compound Flammability Rating:</b>	N/A
<b>Oxygen Rating Index:</b>	N/A
<b>Lead Frame Material:</b>	A42
<b>Lead Finish, Composition / Thickness:</b>	Solder Dip 85%SN, 15%pB
<b>Die Backside Preparation Method/Metallization:</b>	N/A
<b>Die Separation Method:</b>	Wafer Saw
<b>Die Attach Method:</b>	Ag / Glass Paste
<b>Die Attach Supplier:</b>	QMI
<b>Die Attach Material:</b>	2419MA
<b>Bond Diagram Designation</b>	N/A
<b>Wire Bond Method:</b>	Wedge
<b>Wire Material/Size:</b>	Al/ 1.25mil
<b>Thermal Resistance Theta JA °C/W:</b>	N/A
<b>Package Cross Section Yes/No:</b>	N/A
<b>Assembly Process Flow:</b>	49-14999
<b>Name/Location of Assembly (prime) facility:</b>	Anam Philippines (PHIL-M)

<b>ELECTRICAL TEST / FINISH DESCRIPTION</b>	
<b>Test Location:</b>	Anam Philippines (PHIL-M)
<b>Fault Coverage:</b>	100%

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

**RELIABILITY TESTS PERFORMED PER SPECIFICATION REQUIREMENT**

<b>Stress/Test</b>	<b>Test Condition (Temp/Bias)</b>	<b>Result P/F</b>
Temperature Cycle (Military)	MIL-STD-883C, Method 1010, Condition C, -65°C to 150°C	P
Internal Visual	Cypress Spec 25-00017	P
Lead Integrity	Cypress Spec 25-00004	P
Physical Dimension	Cypress Spec. 25-00031	P
Military Life Test Group C	150C, 5.75V	P
External Visual	Cypress Spec 25-00038	P
Salt Atmosphere	Cypress Spec 25-00013/Cypress Spec 25-00038	P
Adhesion of Lead Finish	Cypress Spec. 25-00029	P
Lid Torque	Cypress Spec. 25-00035	P
Thermal Series	MIL-STD-883C, Method 5005	P
Stud Pull, Hermetic	Cypress Spec. 12-00292	P
Die Shear	Cypress Spec. 12-00292	P
Solderability, Steam Aged	Cypress Spec. 25-00018	P
X-Ray	MIL-STD-883C, Method 2012 / Cypress Spec. 12-00292	P
Mechanical Series	MIL-STD-883C, Method 5005	P
Internal Water Vapor	MIL-STD-883C, Method 1018	P

## **Reliability Test Data**

**QTP #: 97458**

<b>Device</b>	<b>Fab Lot #</b>	<b>Assy Lot #</b>	<b>Assy Loc</b>	<b>Duration</b>	<b>Samp</b>	<b>Rej</b>	<b>Failure Mechanism</b>
<b>STRESS: PHYSICAL DIMENSIONS</b>							
CY27C010-WMB (7C201A)	2720557	349705318	PHIL-M	COMP	15	0	
CY27C010-WMB (7C201A)	3629153	349705478	PHIL-M	COMP	15	0	
<b>STRESS: LEAD INTEGRITY</b>							
CY27C010-WMB (7C201A)	2720557	349705318	PHIL-M	COMP	4	0	
CY27C010-WMB (7C201A)	2720557	349705318	PHIL-M	COMP	4	0	
<b>STRESS: THERMAL SERIES</b>							
CY27C010-WMB (7C201A)	2720557	349705318	PHIL-M	COMP	17	0	
CY7C199-DMB (7C199C)	3629153	349705478	PHIL-M	COMP	17	0	
<b>STRESS: MECHANICAL SERIES</b>							
CY27C010-WMB (7C201A)	2720557	349705318	PHIL-M	COMP	17	0	
CY7C199-DMB (7C199C)	3629153	349705478	PHIL-M	COMP	17	0	
<b>STRESS: SALT ATMOSPHERE</b>							
CY27C010-WMB (7C201A)	2720557	349705318	PHIL-M	COMP	15	0	
CY7C199-DMB (7C199C)	3629153	349705478	PHIL-M	COMP	15	0	
<b>STRESS: INTERNAL WATER VAPOR</b>							
CY27C010-WMB (7C201A)	2720557	349705318	PHIL-M	COMP	3	0	
CY7C199-DMB (7C199C)	3629153	349705478	PHIL-M	COMP	3	0	
<b>STRESS: ADHESION OF LEAD FINISH</b>							
CY27C010-WMB (7C201A)	2720557	349705318	PHIL-M	COMP	3	0	
CY7C199-DMB (7C199C)	3629153	349705478	PHIL-M	COMP	3	0	

## **Reliability Test Data**

**QTP #: 97458**

<b>Device</b>	<b>Fab Lot #</b>	<b>Assy Lot #</b>	<b>Assy Loc</b>	<b>Duration</b>	<b>Samp</b>	<b>Rej</b>	<b>Failure Mechanism</b>
<b>STRESS: EXTERNAL VISUAL</b>							
CY27C010-WMB (7C201A)	2720557	349705318	PHIL-M	COMP	15	0	
CY7C199-DMB (7C199C)	3629153	349705478	PHIL-M	COMP	15	0	
<b>STRESS: DIE SHEAR</b>							
CY27C010-WMB (7C201A)	2720557	349705318	PHIL-M	COMP	15	0	
CY7C199-DMB (7C199C)	3629153	349705478	PHIL-M	COMP	15	0	
<b>STRESS: INTERNAL VISUAL</b>							
CY27C010-WMB (7C201A)	2720557	349705318	PHIL-M	COMP	5	0	
CY7C199-DMB (7C199C)	3629153	349705478	PHIL-M	COMP	5	0	
<b>STRESS: SOLERABILITY/ STEAM AGED</b>							
CY27C010-WMB (7C201A)	2720557	349705318	PHIL-M	COMP	3	0	
CY7C199-DMB (7C199C)	3629153	349705478	PHIL-M	COMP	3	0	
<b>STRESS: MILITARY LIFE TEST GROUP C, 150C, 5.75V</b>							
CY27C010-WMB (7C201A)	2720557	349705318	PHIL-M	184	49	0	
CY7C199-DMB (7C199C)	3629153	349705478	PHIL-M	184	50	0	
<b>STRESS: X-RAY</b>							
CY27C010-WMB (7C201A)	2720557	349705318	PHIL-M	COMP	15	0	
CY7C199-DMB (7C199C)	3629153	349705478	PHIL-M	COMP	15	0	
<b>STRESS: LID TORQUE</b>							
CY27C010-WMB (7C201A)	2720557	349705318	PHIL-M	COMP	5	0	
CY7C199-DMB (7C199C)	3629153	349705478	PHIL-M	COMP	5	0	

## ***Reliability Test Data***

**QTP #: 97458**

<b><i>Device</i></b>	<b><i>Fab Lot #</i></b>	<b><i>Assy Lot #</i></b>	<b><i>Assy Loc</i></b>	<b><i>Duration</i></b>	<b><i>Samp</i></b>	<b><i>Rej</i></b>	<b><i>Failure Mechanism</i></b>
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**STRESS: STUD PULL, HERMETIC**

CY7C199-DMB (7C199C)	3629153	349705478	PHIL-M	COMP	15	0	
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**STRESS: TC CONDITION C, 150C TO -65C, MSL1**

CY27C010-WMB (7C201A)	2720557	349705318	PHIL-M	100	47	0	
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CY27C010-WMB (7C201A)	2720557	349705318	PHIL-M	1000	47	0	
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CY7C199-DMB (7C199C)	3629153	349705478	PHIL-M	100	50	0	
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CY7C199-DMB (7C199C)	3629153	349705478	PHIL-M	1000	50	0	
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