

Cypress Semiconductor Package Qualification Report

**QTP# 043005 VERSION 1.0
January 2005**

56-Lead SSOP

NITTO MP-8500 Mold Compound

Ni/Pd/Au Leadframe

MSL3, 260°C Reflow

Cypress Philippines (CML-RA)

CYPRESS TECHNICAL CONTACT FOR QUALIFICATION DATA:

Fredrick Whitwer
Principal Reliability Engineer
(408) 943-2722

Sabbas Daniel
Quality Director
(408) 943-2685

PACKAGE QUALIFICATION HISTORY

QUAL REPORT	DESCRIPTION OF QUALIFICATION PURPOSE	DATE COMP.
043005	Qualify Shinko Ni/Pd/Au Leadframe, 8mils Thickness (Full Metal Pad) on 56-Lead SSOP, MSL3, 260C Reflow at CML-RA (Autoline)	Sep 04

MAJOR PACKAGE INFORMATION USED IN THIS QUALIFICATION	
Package Designation:	SP56
Package Outline, Type, or Name:	56-Small Shrunk Outline Package (SSOP)
Mold Compound Name/Manufacturer:	NITTO MP-8500
Mold Compound Flammability Rating:	V-O
Oxygen Rating Index:	N/A
Lead Frame Material:	Copper
Lead Finish, Composition / Thickness:	Ni/Pd/Au (Ni:20~80 uinch, Pd:0.8~1.2uinch, Au: 0.12~0.5uinch)
Die Backside Preparation Method/Metallization:	N/A
Die Separation Method:	Wafer Saw
Die Attach Supplier:	Dexter
Die Attach Material:	QMI 509
Die Attach Method:	Epoxy
Bond Diagram Designation	10-06229
Wire Bond Method:	Thermosonic
Wire Material/Size:	0.8mil
Thermal Resistance Theta JA °C/W:	71.99°C/W
Package Cross Section Yes/No:	N/A
Assembly Process Flow:	11-20048
Name/Location of Assembly (prime) facility:	Cypress Philippines (CML-RA)

ELECTRICAL TEST / FINISH DESCRIPTION	
Test Location:	Cypress Philippines (CML-R)
Fault Coverage:	100%

Note: Please contact a Cypress Representative for other packages availability

RELIABILITY TESTS PERFORMED PER SPECIFICATION REQUIREMENT

Stress/Test	Test Condition (Temp/Bias)	Result P/F
Temperature Cycle	MIL-STD-883C, Method 1010, Condition C, -65°C to 150°C Precondition: JESD22 Moisture Sensitivity MSL3 192 Hrs., 30°C/60%RH+3IR-Reflow, 260°C+5, -0°C	P
Acoustic Microscopy Test, MSL3	Cypress Spec 25-00104	P
Adhesion to Lead Finish	Cypress Spec 25-00029	P
Bond Pull	Cypress Spec 24-00002	P
External Visual	Cypress Spec 12-00292	P
Physical Dimension	Cypress Spec. 25-00031	P
Solderability	Cypress Spec 25-00018	P

Reliability Test Data

QTP #: 043005

<i>Device</i>	<i>Fab Lot #</i>	<i>Assy Lot #</i>	<i>Assy Loc</i>	<i>Duration</i>	<i>Samp</i>	<i>Rej</i>	<i>Failure Mechanism</i>
STRESS: ACOUSTIC - MICROSCOPE, MSL3							
CY28409OCT (7C828409D)	4344035	610436635	CML-RA	COMP	15	0	
CY28409OCT (7C828409D)	4411555	610436636	CML-RA	COMP	15	0	
CY28409OCT (7C828409D)	4420116	610436637	CML-RA	COMP	15	0	
STRESS: ADHESION TO LEAD FINISH							
CY28409OCT (7C828409D)	4344035	610436635	CML-RA	COMP	3	0	
STRESS: BOND PULL							
CY28409OCT (7C828409D)	4344035	610436635	CML-RA	COMP	10	0	
STRESS: EXERNAL VISUAL							
CY28409OCT (7C828409D)	4344035	610436635	CML-RA	COMP	461	0	
CY28409OCT (7C828409D)	4411555	610436636	CML-RA	COMP	461	0	
CY28409OCT (7C828409D)	4420116	610436637	CML-RA	COMP	461	0	
STRESS: PHYSICAL DIMENSIONS							
CY28409OCT (7C828409D)	4344035	610436635	CML-RA	COMP	5	0	
STRESS: SOLDERABILITY							
CY28409OCT (7C828409D)	4344035	610436635	CML-RA	COMP	3	0	
CY28409OCT (7C828409D)	4411555	610436636	CML-RA	COMP	3	0	
CY28409OCT (7C828409D)	4420116	610436637	CML-RA	COMP	3	0	
STRESS: TC COND. C -65C TO 150C, PRECONDITION 192 HR 30C/60%RH,, MSL3							
CY28409OCT (7C828409D)	4344035	610436635	CML-RA	300	50	0	
CY28409OCT (7C828409D)	4344035	610436635	CML-RA	500	50	0	
CY28409OCT (7C828409D)	4344035	610436635	CML-RA	1000	50	0	
CY28409OCT (7C828409D)	4411555	610436636	CML-RA	300	50	0	
CY28409OCT (7C828409D)	4411555	610436636	CML-RA	500	50	0	
CY28409OCT (7C828409D)	4411555	610436636	CML-RA	1000	50	0	
CY28409OCT (7C828409D)	4420116	610436637	CML-RA	300	50	0	
CY28409OCT (7C828409D)	4420116	610436637	CML-RA	500	50	0	
CY28409OCT (7C828409D)	4420116	610436637	CML-RA	1000	50	0	