ON Semiconductor

FINAL PRODUCT/PROCESS CHANGE NOTIFICATION #16793

Generic Copy

Issue Date: 27-Jan-2012

TITLE: Addition of OSPI manufacturing site for automotive grade Serial EEPROM products in SOIC 8-pin package.

PROPOSED FIRST SHIP DATE: 15-May-2012

AFFECTED CHANGE CATEGORY(S): Automotive Serial EEPROM devices using the SOIC 8-pin package: CAV24CxxWE-GT3; CAV25xxxVE-GT3, CAV93CxxVE-GT3

FOR ANY QUESTIONS CONCERNING THIS NOTIFICATION:
Contact your local ON Semiconductor Sales Office or Denisa Stefan Denisa.stefan@onsemi.com

SAMPLES: Contact your local ON Semiconductor Sales Office

ADDITIONAL RELIABILITY DATA: Available upon request
Contact your local ON Semiconductor Sales Office or Tony Luciani tony.luciani@onsemi.com

NOTIFICATION TYPE:

Final Product/Process Change Notification (FPCN)

Final change notification sent to customers. FPCNs are issued at least 90 days prior to implementation of the change.

ON Semiconductor will consider this change approved unless specific conditions of acceptance are provided in writing within 30 days of receipt of this notice. To do so, contact <quality@onsemi.com>.

DESCRIPTION AND PURPOSE:

This change allows the addition of the ON Semiconductor Philippines Inc. (OSPI) manufacturing facility for AEC-Q100 qualified Serial EEPROM devices in SOIC 8-lead package with NiPdAu finish. The OSPI manufacturing site is ISO / TS16949: 2009 certified.

The CAV24CxxWE-GT3, CAV25xxxVE-GT3 devices have historically been assembled and tested at the STARS facility located in Thailand. Due to flooding in Thailand, the STARS assembly site is temporarily not in operation.

Moving forward, these devices will be processed at OSPI / Philippines or STARS / Thailand location.

There will be no changes in device functionality. These devices use Gresham die (8- inch Wafer Fab in Gresham, Oregon, USA).

RELIABILITY DATA SUMMARY:

Qualification Data using CAT24C02 (2k-bit) die, OKI 0.35um

QTP CAT24C02W_ SOIC-8 (OKI-OSPI)

Manufactured using CAT24C02 DIE, OKI .35u process

Assembly/Test: OSPI

Automotive Grade Level = 1 -40 to +125C, MSL = 1

AEC#	TEST	REFERENCE	TEST CONDITIONS	END POINT REQUIREMEN	No Lots	SS	TEST RESULTS	
							READ POINT	Lot A,B,C
PC	A1	JESD22 A113 J-STD-020	Preconditioning: ; Moisture Preconditioning for THB, AC, TC, & PTC;	(Test @ Rm)	ALL	ALL		Pass
THB	A2	JESD22 A101 or JESD22A105	Temperature Humidity Bias	(Test @ Rm/Hot/)	3	77	Post Precond	Pass
							168 hrs	Pass
							504 hrs	Pass
							1008 hrs	Pass
TC	A3	JESD22 A104	Temperature Cycle: Grade 1:-65°C/+150°C, 500 Cycles	(Test @ Hot)	3	77	Post Precond	Pass
							100 cyc	Pass
							500 cyc	Pass
							1000 cyc	Pass
AC	A4	JESD22 A102 or JESD22 A118	Autoclave: 121°C/100%RH, 15psig, 96hrs	(Test @ Rm/Hot)	3	77	Post Precond	Pass
							96 hrs	Pass
							240 hrs	Pass
HTSL	A5	JESD22 A103	High Temperature Storage Life: Grade 1: 150°C, 1000hrs	(Test @ Rm/Hot)	1	45	Post Precond	Pass
							168 hrs	Pass
							504 hrs	Pass
							1008 hrs	Pass
WBS	C1	AEC-Q100-001	Wire Bond Shear Test:	(Cpk > 1.33)	30 bond	5 parts		Pass
WBP	C2	Mil-STD-883 Method 2011	Wire Bond Pull: ; Each bonder used	(Cpk > 1.33)	30 bond	5 parts		Pass
SD	C3	JESD22 B102	Solderability:	(>95% coverage)	3	30		Pass
PD	C4	JESD22 B100, JESD22 B108	Physicalcal Dimensions	(Ppk > 1.67 and Cpk > 1.33)	3	32		Pass
SBS	C5	AEC-Q100-010	Solder Ball Shear	(Ppk > 1.67 and Cpk > 1.33)	3	50 balls		Pass
TEST	E1	User/Supplier Specification	Pre and Post Stress Function/Parameter		All	All		Pass

OSPI BOM for SOIC-8L

LF	LF 60x60 NIPDAU PPF
Die Attach	SUMITOMO 1084P(CONDUCTIVE)
Mold Compound	Sumitomo G600
Wire	0.8 mil Au

Additional Tests / Qual Plan using CAT24C64 (64k-bit) die, Gresham 0.35um / USR

QTP CAV24C64WE-GT3_ SOIC-8 (USR-OSPI-Auto) RRF 14197

Manufactured using CAT24C64-F1-WDQ DIE, ONC35EE process (USR)

Package Code: C034 / SOIC 8 002-01 C PBF, Assembly/Test: OSPI

Automotive Grade Level = 1 -40 to +125C, MSL = 1

AEC#	TEST	REFERENCE	TEST CONDITIONS	END POINT REQUIREMEN	No Lots	SS	TEST RESULTS	
							READ POINT	Lot A,B,C
PC	A1	JESD22 A113 J-STD-020	Preconditioning: ; Moisture Preconditioning for HAST, AC, TC, & PTC;	(Test @ Rm)	ALL	ALL		WW5
HAST + PC	A2	JESD22 A101 JESD22 A110	Highly Accelerated Stress Test: 130'C/85%RH, 96hrs	(Test @ Rm/Hot/)	4	80	Post Precond	WW11
							96 hrs	WW11
TC + PC	A4	JESD22 A104	Temperature Cycle: Grade 1:-65'C/+150'C, 500 Cycles	(Test @ Hot)	4	80	Post Precond	WW8
							100 cyc	WW6
							500 cyc	WW8
HTSL	A6	JESD22 A103	High Temperature Storage Life: Grade 1: 150'C, 1000hrs	(Test @ Rm/Hot)	2	80		
							168 hrs	WW6
							504 hrs	WW9
							1008 hrs	WW13
WBS	C1	AEC-Q100-001	Wire Bond Shear Test:	(Ppk > 1.67 and Cpk > 1.33)	30 bond	5 parts		WW10
WBP	C2	Mil-STD-883 Method 2011	Wire Bond Pull: ; Each bonder used	(Ppk > 1.67 and Cpk > 1.33)	30 bond	5 parts		WW10
SD	C3	JESD22 B102	Solderability:	(>95% coverage)	4	15		WW10
PD	C4	JESD22 B100, JESD22 B108	Physical Dimensions: Case outline 511AK.	(Ppk > 1.67 and Cpk > 1.33)	4	10		WW11
TEST	E1	User/Supplier Specification	Pre and Post Stress Function/Parameter		All	All		
HBM / MM	E2	AEC-Q100-002 AEC-Q100-003	Electrostatic Discharge, Human Body Model / Machine Model: ; (2KV HBM / 200V MM)	(Test @ Rm/Hot)	4	5/ volt level		WW14
CDM	E3	AEC-Q100-011	Electrostatic Discharge, Charged Device Model: ; (750V corner leads, 500V all other leads)	(Test @ Rm/Hot)	4	5/ volt level		WW16
LU	E4	AEC-Q100-004	Latch-Up:	(Test @ Rm/Hot)	2	6		WW14
ED	E5	AEC-Q100-009	Electrical Distributions:	(Test @ Rm/Hot)	4	30		WW14
DPA	---	12MSB17722C	DeProcessing Analysis at Post 500 cyc TC+PC	N/A	4	5		WW15
SAT	---	12MSB17722C	Scanning Acoustic Topography	pre and post MSL	4			WW15

OSPI BOM for SOIC-8L

Item	Value
Pkg Kit	N24588D028
LF	LF 1.651X1.651 NIPDAU PPF
Die Attach	SUMITOMO CRM-1076WB(CONDUCTIVE)
Mold Compound	Sumitomo G600
Wire	0.8 mil Au

A complete Qualification Report will be available upon request.

ELECTRICAL CHARACTERISTIC SUMMARY: N/A

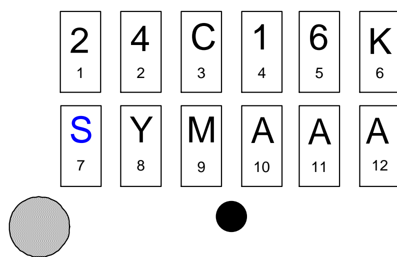
The device functionality and electrical characteristics are not affected. All DC and AC parameters will remain within the same specification.

CHANGED PART IDENTIFICATION:

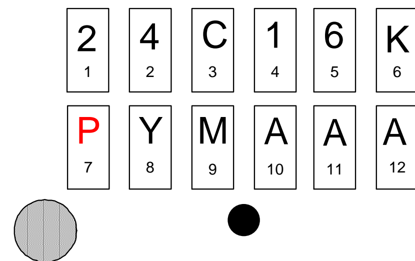
The OSPI manufacturing site is identified by letter "**P**" for the "Assembly Location Code": first character, 2nd line of the top package marking.

Example:

CAV24C16WE-GT3 at STARS



CAV24C16WE-GT3 at OSPI



Line 1: 24C16K
Line 2: *YMAAA (* = assembly site code)
Special marking notes:
Y: Production Year (last digit)
M: Production Month: 1-9, (Jan-Sep) O,N,D (Oct-Dec)
AAA: last 3 characters of assembly lot number
● : Pb-free microdot

List of Affected General Parts:

CAV24C02WE-GT3
CAV24C04WE-GT3
CAV24C08WE-GT3
CAV24C16WE-GT3
CAV24C32WE-GT3
CAV24C64WE-GT3
CAV25010VE-GT3
CAV25020VE-GT3
CAV25040VE-GT3
CAV25080VE-GT3
CAV25160VE-GT3
CAV25640VE-GT3