



FINAL PRODUCT/PROCESS CHANGE NOTIFICATION #16476

Issue Date: 19-May-2010

TITLE: Qualification of Serial I²C EEPROM devices CAT24C04, CAT24C08, CAT24C16, CAT24C32 and CAT24C64 for fabrication at ON Semiconductor's Gresham, Oregon Wafer Fab, and marking updates for product using Gresham die, to differentiate from product using the current OKI Semiconductor die.

PROPOSED FIRST SHIP DATE: 20-Aug-2010

Customers needing additional time to qualify Gresham die will be given 60 more days.

AFFECTED CHANGE CATEGORY(S): CAT24C04, CAT24C08, CAT24C16, CAT24C32 and CAT24C64 (all Packages, all Temperatures)

FOR ANY QUESTIONS CONCERNING THIS NOTIFICATION:

Contact your local ON Semiconductor Sales Office or Denisa Stefan<denisa.stefan@onsemi.com>

SAMPLES: Samples available per "[Affected Device List](#)" table on Page 4
Contact your local ON Semiconductor Sales Office

ADDITIONAL RELIABILITY DATA: Available

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:

ON Semiconductor is pleased to announce that, as part of its ongoing effort to improve product availability, the Serial I²C EEPROM devices CAT24C04, CAT24C08, CAT24C16, CAT24C32 and CAT24C64 are now qualified for production in the 0.35 μ m CMOS EE process at ON Semiconductor's 8-inch Wafer Fab in Gresham, Oregon, USA. The Gresham Wafer Fab is ISO9001:2008, ISO/TS16949:2009 and ISO14001:2004 certified. Wafers for these devices will also continue to be supplied by our foundry partner OKI Semiconductor, Japan from a 6-inch line running a 0.35 μ m CMOS EE process. Gresham wafers will supplement the OKI wafer supply.

Package marking for product using Gresham die will be updated to eliminate obsolete references and to provide for easier identification of device and die revision, as requested by our customers. Package marking for product using OKI die will stay unchanged.

This notification and acceptance thereof, allows for the use of either Gresham or OKI die in future shipments under the same OPN.



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RELIABILITY DATA SUMMARY:

QTP: 09004, CAT24C64 Rev F, Gresham 0.35um Process

Product	Qual Lot Number	Assy Lot	Wfr Lot
CAT24C64	lot1	WE024548ACA	GAL26919# 21
CAT24C64	lot2		GAL26919 #23
CAT24C64	lot 3		GAL50908 #22
CAT24C02	lot 4	WE018993AFS1	55NMA373SEC5
CAT24C02	lot 5	WE021454BFS1	611QA029SED6

Notes:

- 1) Packages are suggested, and may change, with the exception of GL which must be surface mount.
- 2) Family data from higher density products may be applicable when available

		Package	Lot Number	Samples	168hrs	408hrs	1000hrs					
HTOL High Temp Op Life (3x77)	408hrs, 150C release Per JA108 Tritemp test before and after	SOIC	lot1	77	PASS							
			lot 4	77	PASS	PASS	PASS					
			lot 5	77	PASS	PASS	PASS					
		Package	Lot Number	Samples	24hrs							
ELFR Early Life Failure Rate	Per AEC-Q100-008 HTOL conditions, 24hrs, 150C Room/Hot testing before and after	SOIC	lot1	800	PASS							
			lot 4	800	PASS							
			lot 5	800	PASS							
		Package	Lot Number	Samples	100k	200k	300k	400k	500k			
EDR Per JESD22- A103/Q100-005 Room/Hot test before and after	NVM Endurance 1M Cycles	SOIC	lot1	77	PASS	PASS	PASS	PASS	PASS			
				Package	Lot Number	Samples	600k	700k	800k	900k	1M	
		SOIC	lot1	77	PASS	PASS	PASS	PASS	PASS			
			Lot Number	Samples	1 M							
		Wafer	lot2	77	PASS							
			lot3	77	PASS							
		Data	Lot Number	Samples	168hrs	336hrs	500hrs	1000hrs				
EDR Per Q100-005 Room/Hot test before and after	NVM Data Retention Package Level 1000hrs, 150C Cycling Precon to 100k	"00"	lot1	77	PASS	PASS	PASS					
			"FF"	lot1	77	PASS	PASS	PASS				
			Wafer Level Bake at 225C, 100hrs Endurance Preconditioning: 500k Cycles	"00"	Wafer Level lot2	77	PASS					
					Wafer Level lot3	77	PASS					
		"FF"		Wafer Level lot2	77	PASS						
				Wafer Level lot3	77	PASS						



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RELIABILITY DATA – QTP 09004 – Cont'd

		Package	Lot Number	ss	500V	1000V	1500V	2000V
ESD AEC Q100-002 1 lot, 3 units per level	Human Body Model	SOIC	lot 1	3/level	PASS	PASS	PASS	PASS
		Package	Lot Number	ss	2500V	3000V	3500v	4000v
		SOIC	lot 1	3/level	PASS	PASS	PASS	PASS
		Package	Lot Number	ss	50V	100V	150V	200V
ESD AEC Q100-003 1 lot, 3 units per level	Machine Model	SOIC	lot 1	3/level	PASS	PASS	PASS	PASS
		Package	Lot Number	ss	100ma			
LU (1 x 6)	Latch Up per AEC-Q100-004 Room / Hot testing after LU test	SOIC	lot 1		25C	125C		
				6	PASS	PASS		
		Package	Lot Number	ss	Result			
CHAR Characterization (3 x 30)	Per AEC-Q003	SOIC	lot 1	30	PASS			
			lot 2	30	PASS			
			lot 3	30	6/15/2010			

ELECTRICAL CHARACTERISTIC SUMMARY:

Gresham die are 100% compatible to the corresponding OKI die in the sense of meeting existing data sheet specifications. In addition, the Gresham products CAT24C64 Rev F and CAT24C32 Rev F will support the 1MHz (Fast-Plus) 1²C protocol.

A detailed characterization report for each product is available upon request.

CHANGED PART IDENTIFICATION:

While both Gresham and OKI die will be offered under the same OPN, new package marking will be used only for Gresham die, with OKI die marking continuing unchanged. The Gresham die marking reflects the integration of former CSI (Catalyst) into ON Semiconductor, and provides for easier identification of device and die revision, especially for smaller packages with less room for marking.

Die origin will also be identified on the packaging box label by the 2-digit wafer fabrication country code of CS: US for Gresham and CS: Japan for OKI.

A comparative list of current (OKI die) vs. new (Gresham die) marking is presented in the Appendix.

Gresham die based sample availability is listed under Affected Devices.



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Affected Devices:

Part Number (OPN)	Samples Avail Date	Part Number (OPN)	Samples Avail Date
CAT24C64LI-G	6/13/2010	CAT24C08LI-G	6/28/2010
CAT24C64WI-GT3	6/7/2010 *	CAT24C08WI-GT3	6/21/2010
CAT24C64YI-GT3	6/7/2010	CAT24C08YI-GT3	6/21/2010
CAT24C64HU4I-GT3	6/7/2010	CAT24C08HU4I-GT3	6/21/2010
CAT24C64VP2I-GT3	6/7/2010	CAT24C08VP2I-GT3	6/21/2010
CAT24C64ZI-GT3	6/13/2010	CAT24C08ZI-GT3	6/28/2010
CAT24C64XI-T2	6/13/2010	CAT24C08TDI-GT3	6/21/2010
CAT24C64LE-G	6/13/2010	CAT24C08LE-G	6/28/2010
CAT24C64WE-GT3	6/7/2010	CAT24C08WE-GT3	6/21/2010
CAT24C64YE-GT3	6/7/2010	CAT24C08YE-GT3	6/21/2010
CAT24C64HU4E-GT3	6/7/2010	CAT24C08HU4E-GT3	6/21/2010
CAT24C64XE-T2	6/13/2010	CAT24C08TDE-GT3	6/21/2010
CAT24C32LI-G	6/7/2010	CAT24C04LI-G	6/28/2010
CAT24C32WI-GT3	5/30/2010	CAT24C04WI-GT3	6/21/2010
CAT24C32YI-GT3	5/30/2010	CAT24C04YI-GT3	6/21/2010
CAT24C32HU4I-GT3	5/30/2010	CAT24C04HU4I-GT3	6/21/2010
CAT24C32VP2I-GT3	5/30/2010	CAT24C04VP2I-GT3	6/21/2010
CAT24C32HU3I-GT3	6/7/2010	CAT24C04ZI-GT3	6/28/2010
CAT24C32LE-G	6/7/2010	CAT24C04TDI-GT3	6/21/2010
CAT24C32WE-GT3	5/30/2010	CAT24C04LE-G	6/28/2010
CAT24C32YE-GT3	5/30/2010	CAT24C04WE-GT3	6/21/2010
CAT24C32HU4E-GT3	5/30/2010	CAT24C04YE-GT3	6/21/2010
CAT24C16LI-G	6/21/2010	CAT24C04HU4E-GT3	6/21/2010
CAT24C16WI-GT3	6/14/2010	CAT24C04TDE-GT3	6/21/2010
CAT24C16YI-GT3	6/14/2010		
CAT24C16HU4I-GT3	6/14/2010		
CAT24C16VP2I-GT3	6/14/2010		
CAT24C16ZI-GT3	6/21/2010		
CAT24C16TDI-GT3	6/14/2010		
CAT24C16LE-G	6/21/2010		
CAT24C16WE-GT3	6/14/2010		
CAT24C16YE-GT3	6/14/2010		
CAT24C16HU4E-GT3	6/14/2010		
CAT24C16TDE-GT3	6/14/2010		

***Note: Limited quantity available now.**



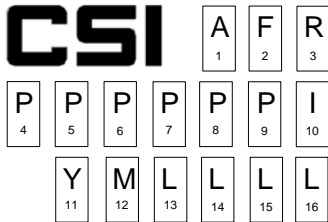
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ELECTRICAL CHARACTERISTIC SUMMARY: N/A

PART IDENTIFICATION:

1) PDIP 8LD (L)

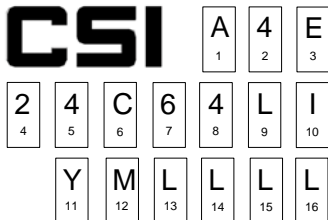
Current OKI die



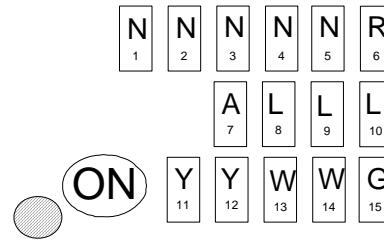
Top Side Marking

- 1: Assembly location code
- 2: Mark "4" for (lead finish NiPdAu)
- 3: Product Revision
- 4-9: Product Name "PPPPPP"
- 10: Temp Range (I=Industrial; E=Extended)
- 11: Production Year (last digit)
- 12: Production Month (1-9, A,B,C)
- 13-16: Last four digits of assembly lot number

Example: CAT24C64LI-G



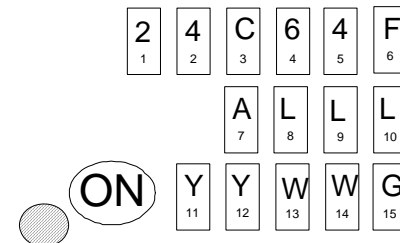
New Gresham die



Top Side Marking

- 1-5: Device name (5 char)
- 6: Production Revision
- 7: Assembly location
- 8-10: Assembly Lot Number
- 11-12: Production Year
- 13-14: Production Week
- 15: Pb-free (fixed as "G")

Example: CAT24C64LI-G

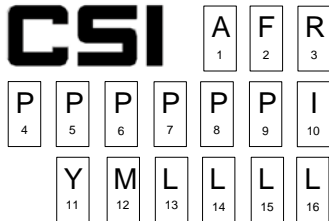




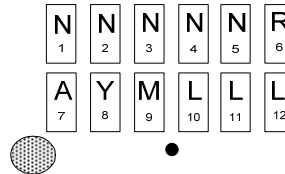
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2) SOIC -150mil 8pin (W, V), SOIC – 208mil 8pin (X)

Current OKI die



New Gresham die



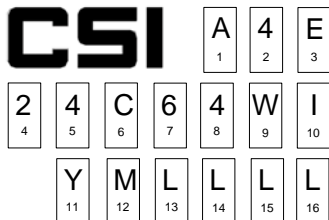
Top Side Marking

- 1: Assembly location code
- 2: Mark "4" for (lead finish NiPdAu)
- 3: Product Revision
- 4-9: Product Name "PPPPPP"
- 10: Temp Range (I=Industrial; E=Extended)
- 11: Production Year (last digit)
- 12: Production Month (1-9. A,B,C)
- 13-16: Last four digits of assembly lot number

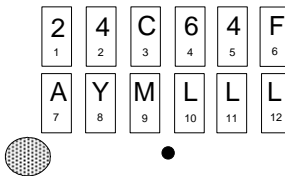
Top Side Marking

- 1-5: Device name (5 char)
- 6: Product Revision
- 7: Assembly Location
- 8: Production Year
- 9: Production Month
- 10-12: Assembly Lot Number
- Pb-Free Microdot

Example: CAT24C64WI-G



Example: CAT24C64WI-G

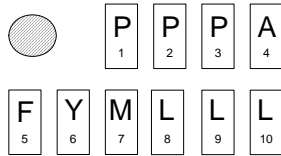




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3) TSSOP- 8pin (Y)

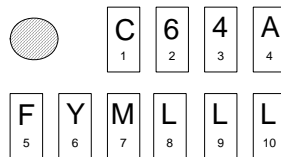
Current OKI die



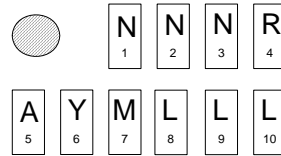
Top Side Marking

- 1-3: Device name "PPP"
- 4: Assembly Location
- 5: Lead Finish
- 6: Production Year
- 7: Production Month
- 10-12: Assembly Lot Number

Example: CAT24C64YI-G



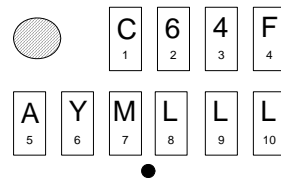
New Gresham die



Top Side Marking

- 1-3: Device name (3 char)
- 4: Product Revision
- 5: Assembly Location
- 6: Production Year
- 7: Production Month
- 8-10: Lot Number
- Pb-Free Microdot

Example: CAT24C64YI-G

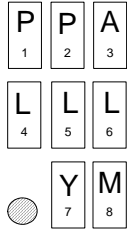




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4) TDFN 2x3mm (VP2) and UDFN 2x3mm (HU3, HU4)

Current OKI die



Top Side Marking

- 1-2: Device name
- 3: Assembly Location
- 4-6: Lot Number
- 7: Production Year
- 8: Production Month

New Gresham die

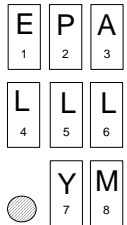


Top Side Marking

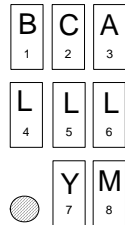
- 1-2: Device code
- 3: Code for revision and package
- 4: Assembly Location
- 5-6: Lot Number
- 7: Production Year
- 8: Production Month
- Pb-Free Microdot

Example:

CAT24C64VP2I-G



CAT24C64HU3I-G



Example:

CAT24C64VP2I-G



CAT24C64HU3I-G



CAT24C64HU4I-G

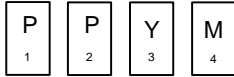




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5) TSOT-23 5LD (TD)

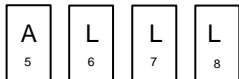
Current OKI die



Top Side Marking

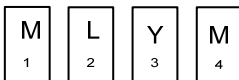
- 1-2: Device code
- 3: Production Year
- 4: Production Month

Bottom Side Marking

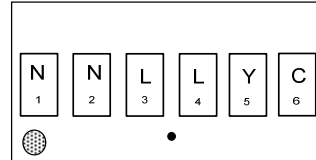


- 5: Assembly Location
- 6-8: Lot Number

**Example (Top Side Marking):
CAT24C16TDI-G**



New Gresham die

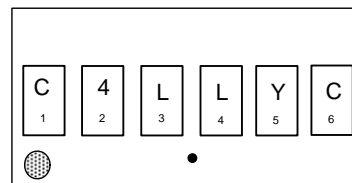


Top Side Marking

- 1-2: Device code
- 3-4: Lot Number
- 5: Production Year
- 6: Production Month & Assembly Location
- Pb-Free Microdot

No Bottom Side Marking

Example: CAT24C16TDI-G

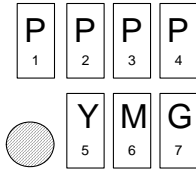




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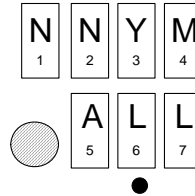
6) MSOP 8LD (Z)

Current OKI die



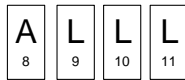
- 1-4: Device code
- 5: Production Year
- 6: Production Month
- 7: Product Revision

New Gresham die



- 1-2: Device code
- 3: Production Year
- 4: Production Month
- 5: Assembly Location
- 6-7: Assembly Location
- Pb-Free Microdot

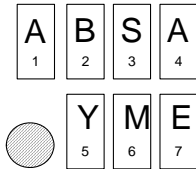
Bottom Side Marking



- 8: Assembly Location
- 9-11: Lot Number

NO Bottom Side Marking

Example (Top Side Marking): CAT24C64ZI-G



Example: CAT24C64ZI-G

