Clock Generation and Clock and Data Marking and Ordering Information Guide

AND8002/D

INTRODUCTION

This application note describes the device markings for the following **onsemi** families (refer to the respective family data book for family information):

- ECLinPS Lite™
- ECLinPS MAX™
- ECLinPS Plus™
- ECLinPS™
- Low Voltage ECLinPS Plus™
- Low Voltage ECLinPS Lite™
- Low Voltage ECLinPS™

Note that data sheet information takes precedence over this application note if there are any differences.

DATA SHEET MARKING DIAGRAMS

Device Marking Examples

The marking format is dependent upon the device package, and larger device packages allow the inclusion of more information on the face of the device. On the larger packages where marking space permits, the Pb Free designator will be an additional suffix letter G added to the traceability and date code line. A marking example for the LQFP 32−pin MC100LVEP111 is shown below. Note that the device marking includes the following coded information that is described in later sections:

- Code 1. Circuit Identification Code
- Code 2. Temperature Compensation Code
- Code 3. Family Identification Code
- Code 4. Function Type Code
- Code 5. Assembly Location Traceability Code
- Code 6. Wafer Lot Traceability Code
- Code 7. Year Date Code
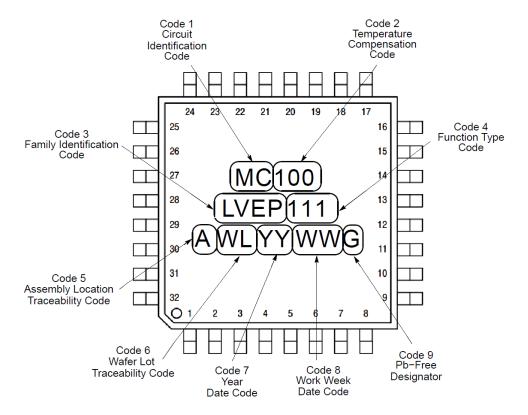- Code 8. Work Week Date Code
- Code 9. Pb−Free Designator

Figure 1. 32−Pin Marking Example

A marking example for the 8−pin TSSOP MC100EP16 device is shown in Figure 2. Note that the 8−pin package does not allow for as much marking information as the 32−pin package. On the smaller package where marking space is limited, the Pb Free designator will be an additional "Dot" centered below the traceability and date code line, or else a "Microdot" positioned below the right side of the traceability and date code line.
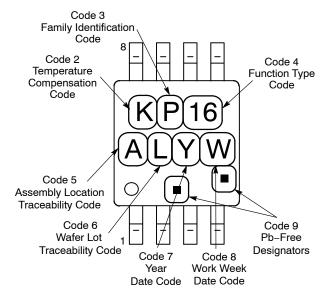

Figure 2. 8−Pin Marking Example

Code 1. Circuit Identification Code
MC identifies Motorola Circuits that are now owned by **onsemi**. NB identifies circuits that were introduced by **onsemi**.

Code 2. Temperature Compensation Code
There are two Temperature Compensation codes. The "10" code indicates that the device characteristics are temperature dependent (refer to AND8066/D for additional information). The "100" identification code indicates that the device characteristics are not temperature dependent.

Code 3. Family Identification Code
Family Identification Codes are shown in Table 1.

Code 4. Function Type Code
Each device is assigned a unique function type identifier.

Code 5. Assembly Location Traceability Code
The one character Assembly Location Traceability Codes identify the final assembly location and are shown in Table 2.

Code 6: Wafer Lot Traceability Code
The use of a one or two character Wafer Lot Traceability Code is dependent upon the package size. The Wafer Lot Traceability Code in conjunction with the Work Week Date Code provides unique wafer lot identification.

Table 1. FAMILY IDENTIFICATION CODES

Family	TSSOP−8 Code 3	SO−8 Code 3	Over 8−Pin Code 3
ECLinPS Lite	L	EL	EL
ECLinPS MAX	6L	6L	6L
ECLinPS Plus	P	EP	EP
ECLinPS			E
Low Voltage ECLinPS Plus	U	VP	LVEP
Low Voltage ECLinPS Lite	V	VL	LVEL
Low Voltage ECLinPS			LVE
ECLinPS Lite Translator	T	LT	ELT
ECLinPS Plus Translator	A	PT	EPT
Low Voltage ECLinPS Lite Translator	R	VT	LVELT

Table 2. ASSEMBLY LOCATION TRACEABILITY CODES

Code 5	Assembly Site	Location
L	Amkor Technology Philippines	Manila, Philippines
G	UTAC Thai LTD	Bangkok, Thailand
A	ASE (Shanghai)	Shanghai, China
P	**onsemi** Carmona	Carmona, Philippines
R	**onsemi** Sbn	Seremban, Malaysia

Code 7. Year Date Code

The use of a one or two character Year Date Code is dependent upon the package size.

Code 8. Work Week Date Code

The use of a one or two character Work Week Date Code is dependent upon the package size.

Traceability and Date Code Tables

Note that the smaller packages use a one−character alpha code for the "Year", and a one−character alpha code for the "Work Week". The alpha codes are deciphered in Table 3.

Table 3. ALPHA YEAR AND WORK WEEK DATE CODES

Definition								
YW Code − Year and Work Week (Two−character Alpha Code) Example: 2005, workweek 10 = GJ Example: 2010, workweek 12 = SL								
Year	Work Week	Code	Year	Work Week	Code	Year	Work Week	Code
2006	1 26 27 52	IA IZ JA JZ	2007	1 26 27 52	KA KZ LA LZ	2008	1 26 27 52	MA MZ NA NZ
2009	1 26 27 52	PA PZ RA RZ	2010	1 26 27 52	SA SZ TA TZ	2011	1 26 27 52	UA UZ VA VZ
2012	1 26 27 52	WA WZ XA XZ	2013	1 26 27 52	YA YZ ZA ZZ	2014	1 26 27 52	AA AZ BA BZ
2015	1 26 27 52	CA CZ DA DZ	2016	1 26 27 52	EA EZ FA FZ	2017	1 26 27 52	GA GZ HA HZ
2018	1 26 27 52	IA IZ JA JZ	2019	1 26 27 52	KA KZ LA LZ	2020	1 26 27 52	MA MZ NA NZ
2021	1 26 27 52	PA PZ RA RZ	2022	1 26 27 52	SA SZ TA TZ	2023	1 26 27 52	UA UZ VA VZ
2024	1 26 27 52	WA WZ XA XZ	2025	1 26 27 52	YA YZ ZA ZZ	2026	1 26 27 52	AA AZ BA BZ
2027	1 26 27 52	CA CZ DA DZ	2028	1 26 27 52	EA EZ FA FZ	2029	1 26 27 52	GA GZ HA HZ
2030	1 26 27 52	IA IZ JA JZ						

NOTE: For dates outside of the table: the first character of the code is incremented at the start of workweek 01 and workweek 27 each year. The second character begins with "A" in workweek 01 of each year and increments weekly. "A" follows "Z" to make the code continuous.

PACKAGE INFORMATION

The marking diagram includes the following package information:

- Package: The industry standard designation for the package.
- Package Suffix: This suffix is used to order the device, and is part of the device order number listed in the Ordering Information table. Refer to the following "Ordering Information" section.
- Package Case Number: The industry standard case designation for the package.

Packaging information examples from the MC100EP16 and MC100LVEP111 data sheets are shown below.

SO−8
D SUFFIX
CASE 751

TSSOP−8
DT SUFFIX
CASE 948R

Figure 3. 8−Pin Packaging Information Example

32−LEAD LQFP
CASE 561AB
FA SUFFIX

Figure 4. 32−Pin Packaging Information Example

Package Suffix

The package suffixes are shown in the data sheet Marking Diagram.

Table 4. PACKAGE SUFFIXES

Suffix	Package	Pins	Case	Description
D	SO−16	16	751B	Small Outline IC
D	SO−8	8	751	Small Outline IC
DT	TSSOP−16	16	948F	Thin Shrink Small Outline Package
DT	TSSOP−20	20	948E	Thin Shrink Small Outline Package
DT	TSSOP−28	28	948A	Thin Shrink Small Outline Package
DT	TSSOP−8	8	948R	Thin Shrink Small Outline Package
DW	SO−20	20	751D	Small Outline IC
FA	LQFP−32	32	561AB	Leaded Quad Flat Pack
M	Micro−10	10	846B	Micro−10
MN	DFN8	8	506AA	Dual Flat No−Lead
MN	QFN−16	16	485G	Quad Flat No – Lead
MN	QFN−24	24	485L	Quad Flat No – Lead
MN	QFN−32	32	488M	Quad Flat No – Lead
MN	QFN−52	52	485M	Quad Flat No – Lead

For Additional Information

Additional traceability and date code information is available upon request. To make a request, please visit our website at http://www.onsemi.com and click on "Technical Support," or contact the Technical Information Center (TIC) at 1−800−282−9855.

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ADDITIONAL INFORMATION

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