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## ECLinPS™, ECLinPS Lite™ and ECLinPS Plus™ Device Type and Date Code Marking Guide

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### APPLICATION NOTE

This is a summary of ON Semiconductor ECLinPS Logic Device, Date Code, and Traceability Marking. We want to provide our customers with easy access to this information on the web. This application note summarizes and explains the Date Code and Traceability Marking for ECL Logic packages. This is not intended to replace the proper documentation. To properly decode the Logic marking you

need ON Semiconductor's marking spec 12MON00232D and S.O.P. 7-19 ID of Products to Location of Test/Assy/Wafer Fab. Also, you need to know the abbreviations used for ECL Logic products (see the appropriate Logic datasheet for the specific device naming/ordering information).

### DEVICE TYPE MARKING

Below are the ECLinPS, ECLinPS Lite, and ECLinPS Plus device labeling guidelines.

#### MC Device Nomenclature:

Standard ECL family abbreviations used are:

**ECL** = Emitter Coupled Logic  
**E** = ECLinPS = ECL in Pico Seconds,  
**EL** = E-Lite = ECLinPS Lite,  
**EP** = E-Plus = ECLinPS Plus,  
**LV** = Low Voltage,  
**T** = Translator.

These can be used in combination;

**ELT** = ECLinPS Lite Translator,  
**EPT** = ECLinPS Plus Translator,  
**LVE** = Low Voltage ECLinPS,  
**LVEL** = Low Voltage ECLinPS Lite,  
**LVEP** = Low Voltage ECLinPS Plus,  
**LVELT** = Low Voltage ECLinPS Lite  
Translator.

#### ECL Logic Packages

The standard ECLinPS Logic package suffixes are:

**D** = SOIC Narrow Body Small Outline IC,  
**DW** = SOIC Wide Body Small Outline IC,  
**DT** = TSSOP Thin Shrink Small Outline  
Package,  
**FA** = QFP Quad Flat Pack,  
**FN** = PLCC Plastic Leaded Chip Carrier.

#### Device Labeling Example:

MC100LVEL14DW:

**MC** = Motorola/ON Semiconductor brand,  
**100** = 100K/100E Voltage and Temperature  
Compensation,  
**LVEL** = Low Voltage ECLinPS Lite,  
**14** = Device Function = 1:5 Clk Dist Chip,  
**DW** = Package Type = Wide Body SOIC.

#### Notes:

The combination LVET is not used.  
All "MC" devices follow the same format.

#### MC Device Markings:

For packages larger than 20-lead SOIC the marking is the same as the device type.

The 16-lead and 20-lead SOIC marking scheme is truncated as follows:

#### 16-Lead SOIC:

Device Nomenclature — Marking

MC10EL15D = **10EL15**  
MC100EL15D = **100EL15**

#### 20-Lead SOIC:

MC100EL13DW = **100EL13**  
MC100LVEL13DW = **100LVEL13**

#### Notes:

All of the above can be combined with an R2 suffix for tape and reel such as DR2 and FNR2.

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Device marking is most challenging on 8-lead SOIC and TSSOP devices, which do not have physical space on the small packages for full marking. On these packages device marking is limited to 5 characters for SOIC and 4 characters for TSSOP. Because of these limitations a system of abbreviations is used as needed. The E for ECLinPS representation will be dropped in the case of low voltage and translator functions, and all TSSOP packages in the ECLinPS Lite and ECLinPS Plus families.

### Standard ECLinPS family marking abbreviations used for SOIC and TSSOP:

- H** = 10, to represent 10H/10E compatible, voltage-compensated only.
- K** = 100, to represent 100K/100E compatible, voltage and temperature compensated.
- L** = ECLinPS Lite,
- P** = ECLinPS Plus,
- V** = LV = Low Voltage,
- LT** = EPT = ECLinPS Lite Translator,
- PT** = EPT = ECLinPS Plus Translator,
- T, R, A** = Translator,
- T** = ELT,
- R** = LVELT,
- A** = EPT.

	<u>DEVICE FAMILY</u>	<u>SOIC</u>	<u>TSSOP</u>
EL =	ECLinPS Lite	EL	L
EP =	ECLinPS Plus	EP	P
LVEL =	Low Voltage E-Lite	VL	V
LVEP =	Low Voltage E-Plus	VP	U
LVELT =	Low Voltage E-Lite Trans.	VT	R
EPT =	E-Plus Translator	PT	A
ELT =	E-Lite Translator	LT	T

<u>8-Lead Device Nomenclature-</u>	<u>SOIC: (D) Marking</u>	<u>TSSOP: (DT) Marking</u>
MC10EL01D/DT =	HEL01	HL01
MC100EL01D/DT =	KEL01	KL01
MC100LVEL11D/DT =	KVL11	KV11
MC10ELT20D/DT =	HLT20	HT20
MC100ELT20D/DT =	KLT20	KT20
MC100LVELT22D/DT =	KVT22	KR22
MC10EP01D/DT =	HEP01	HP01
MC100EP01D/DT =	KEP01	KP01
MC10EPT20D/DT =	HPT20	HA20
MC100EPT23D/DT =	KPT23	KA23
MC10LVEP16D/DT =	HVP16	HU16
MC100LVEP16D/DT =	KVP16	KU16

### PC/XC Device Marking

New Prototype "PC" devices and new pre-production release, pre-reliability "XC" devices:

- P** = PC
- X** = XC

The first character is the "PC" or "XC" identifier. For a variety of reasons, including space limitations, the remaining characters have not been standard for different engineering devices. On these PC and XC devices it is important to use the date code in conjunction with the device marking.

Examples of current markings:

- XVT23** = XC100LVELT23D
- PEP16** = PC10EP16D
- PET23** = PC100EPT23D

## DATE CODE MARKING

This is a summary of ECLinPS, ECLinPS Lite and ECLinPS Plus Date Code Marking. The intent is to summarize and explain the Date Code Marking for standard

ECLinPS and the special coding used for ECLinPS Lite and ECLinPS Plus small SOIC and TSSOP packages.

### Date Code / Alpha Code Marking:

**32 & 52-Lead QFP, 20 & 28-Lead PLCC and 20-Lead SOIC = "AWLYYWW"**

- "A" - The First character indicates the Assembly Location.
- "WL" - The Second & Third characters indicate the Wafer Lot Tracking Code.
- "YY" - The Fourth & Fifth characters indicate the Year Assembled.
- "WW" - The Sixth & Seventh characters indicate the Work Week Assembled.

**XAA9646**

|||||

**X**||||| = ASE Chung-Li, Taiwan. Assembly Location. (S.O.P. 7-19)

|||||

**AA**||||| = First Lot Assembled for that Device Type in that (Work Week).

|||||

**96**|| = 1996

||

**46** = WW46

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## 16-Lead SOIC = "AWLYWW"

- "A" - The First character indicates the Assembly Location.
- "WL" - The Second & Third characters indicate the Wafer Lot Tracking Code.
- "Y" - The Fourth character indicates the Year Assembled.
- "WW" - The Fifth & Sixth characters indicate the Work Week Assembled.

### XAA643

- X = ASE Chung-Li (previously Motorola METL) Taiwan. Assy Location.
- AA = First Lot Assembled for that Device Type in that (Work Week).
- 6 = 1996
- 43 = WW43

Only 4 characters are used on 8-lead SOIC and TSSOP. Therefore, the following abbreviations are used:

## 8-Lead SOIC and TSSOP Example = "ALYW"

- "A" - The First character indicates the location of Assembly Location.
- "L" - The Second character indicates the Wafer Lot Tracking Code.
- "Y" - The Third character indicates an "ALPHA CODE" of the Year assembled.
- "W" - The Fourth character indicates an "ALPHA CODE" of the Work Week assembled.

### The "A" Assembly Location Alpha Codes (per S.O.P. 7-19) are:

- "2" = AIT Batam Island, Indonesia (formerly AMT, ASTRA),
- "5" = ATP Manila, Phillipines (formerly AAP1, AAPI, AME),
- "P" = OSPI ON Semiconductor Carmona, Phillipines (formerly Motorola MPC),
- "X" = ASE Chung-Li, Taiwan (formerly Motorola METL),

### The "Y" YEAR Alpha Codes are:

<u>Year</u>	<u>Months</u>	<u>Work Week</u> <u>Code</u>
A = 1989	First 6 months,	WW01 - WW26
B = 1989	Second 6 months,	WW27 - WW52
C = 1990	First 6 months,	WW01 - WW26
D = 1990	Second 6 months,	WW27 - WW52
E = 1991	First 6 months,	WW01 - WW26
F = 1991	Second 6 months,	WW27 - WW52
G = 1992	First 6 months,	WW01 - WW26
H = 1992	Second 6 months,	WW27 - WW52
I = 1993	First 6 months,	WW01 - WW26
J = 1993	Second 6 months,	WW27 - WW52
K = 1994	First 6 months,	WW01 - WW26
L = 1994	Second 6 months,	WW27 - WW52
M = 1995	First 6 months,	WW01 - WW26
N = 1995	Second 6 months,	WW27 - WW52
O = 1996	First 6 months,	WW01 - WW26
P = 1996	Second 6 months,	WW27 - WW52
Q = 1997	First 6 months,	WW01 - WW26
R = 1997	Second 6 months,	WW27 - WW52
S = 1998	First 6 months,	WW01 - WW26
T = 1998	Second 6 months,	WW27 - WW52
U = 1999	First 6 months,	WW01 - WW26
V = 1999	Second 6 months,	WW27 - WW52
W = 2000	First 6 months,	WW01 - WW26
X = 2000	Second 6 months,	WW27 - WW52
Y = 2001	First 6 months,	WW01 - WW26
Z = 2001	Second 6 months,	WW27 - WW52

### The "W" Work Week Alpha Codes are:

<u>First 6 Months</u>	<u>Second 6 Months</u>
WW01 - WW26	WW27 - WW52
A = 01	A = 27
B = 02	B = 28
C = 03	C = 29
D = 04	D = 30
E = 05	E = 31
F = 06	F = 32
G = 07	G = 33
H = 08	H = 34
I = 09	I = 35
J = 10	J = 36
K = 11	K = 37
L = 12	L = 38
M = 13	M = 39
N = 14	N = 40
O = 15	O = 41
P = 16	P = 42
Q = 17	Q = 43
R = 18	R = 44
S = 19	S = 45
T = 20	T = 46
U = 21	U = 47
V = 22	V = 48
W = 23	W = 49
X = 24	X = 50
Y = 25	Y = 51
Z = 26	Z = 52

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The date code can be determined from this information as shown in the following example:

**XANS**,  
| | | |  
**X** | | | = ASE Chung-Li, Taiwan. Assembly Location. (S.O.P. 7-19)  
| | | |  
**A** | | = First Lot Assembled for that Device Type in that Alpha Code (Work Week).  
| | | |  
**N** | = 1995 Second 6 months, WW27 - WW52  
| | | |  
**S** = WW45 (Y1995 WW45)

**2BWE**,  
| | | |  
**2** | | | = AIT Batam Island, Indonesia. Assembly Location. (S.O.P. 7-19)  
| | | |  
**B** | | = Second Lot Assembled for that Device Type in that Alpha Code (Work Week).  
| | | |  
**W** | = 2000 First 6 months, WW01 - WW26  
| | | |  
**E** = WW05 (Y2000 WW05)

### Additional Assistance

For additional assistance, please contact your local ON Semiconductor representative. You may also order the High Performance ECL Data Book from the Literature

Distribution Center as document DL140/D or the ECLinPS Plus Data Brochure as document BR1513/D. See below for Publication Ordering Information.

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**APPENDIX A**  
**ECLinPS Lite – Device Marking Look-Up Tables**

<b>8 LD SOIC = D Suffix DEVICE NAME</b>	<b>8 LD SOIC MARKING</b>	<b>8 LD TSSOP = DT Suffix DEVICE NAME</b>	<b>8 LD TSSOP MARKING</b>	<b>16 LD SOIC = D Suffix DEVICE NAME</b>	<b>16 LD SOIC MARKING</b>
MC10EL01D	HEL01	MC10EL01DT	HL01	MC10EL15D	10EL15
MC10EL04D	HEL04	MC10EL04DT	HL04	MC10EL34D	10EL34
MC10EL05D	HEL05	MC10EL05DT	HL05	MC10EL57D	10EL57
MC10EL07D	HEL07	MC10EL07DT	HL07	MC100EL15D	100EL15
MC10EL11D	HEL11	MC10EL11DT	HL11	MC100EL34D	100EL34
MC10EL12D	HEL12	MC10EL12DT	HL12	MC100EL57D	100EL57
MC10EL16D	HEL16	MC10EL16DT	HL16		
MC10EL31D	HEL31	MC10EL31DT	HL31		
MC10EL32D	HEL32	MC10EL32DT	HL32		
MC10EL33D	HEL33	MC10EL33DT	HL33		
MC10EL35D	HEL35	MC10EL35DT	HL35		
MC10EL51D	HEL51	MC10EL51DT	HL51		
MC10EL52D	HEL52	MC10EL52DT	HL52		
MC10EL58D	HEL58	MC10EL58DT	HL58		
MC10EL89D	HEL89	MC10EL89DT	HL89		
MC100EL01D	KEL01	MC100EL01DT	KL01	MC100EL13DW	100EL13
MC100EL04D	KEL04	MC100EL04DT	KL04	MC100EL14DW	100EL14
MC100EL05D	KEL05	MC100EL05DT	KL05	MC100EL17DW	100EL17
MC100EL07D	KEL07	MC100EL07DT	KL07	MC100EL29DW	100EL29
MC100EL11D	KEL11	MC100EL11DT	KL11	MC100EL30DW	100EL30
MC100EL12D	KEL12	MC100EL12DT	KL12	MC100EL38DW	100EL38
MC100EL16D	KEL16	MC100EL16DT	KL16	MC100EL39DW	100EL39
MC100EL31D	KEL31	MC100EL31DT	KL31	MC100EL56DW	100EL56
MC100EL32D	KEL32	MC100EL32DT	KL32	MC100EL59DW	100EL59
MC100EL33D	KEL33	MC100EL33DT	KL33	MC100EL90DW	100EL90
MC100EL35D	KEL35	MC100EL35DT	KL35	MC100EL91DW	100EL91
MC100EL51D	KEL51	MC100EL51DT	KL51	MC100LVEL13DW	100LVEL13
MC100EL52D	KEL52	MC100EL52DT	KL52	MC100LVEL14DW	100LVEL14
MC100EL58D	KEL58	MC100EL58DT	KL58	MC100LVEL17DW	100LVEL17
MC100EL1648D	K1648	MC100EL1648DT	1648	MC100LVEL29DW	100LVEL29
MC100LVEL01D	KVL01	MC100LVEL01DT	KV01	MC100LVEL30DW	100LVEL30
MC100LVEL05D	KVL05	MC100LVEL05DT	KV05	MC100LVEL37DW	100LVEL37
MC100LVEL11D	KVL11	MC100LVEL11DT	KV11	MC100LVEL38DW	100LVEL38
MC100LVEL12D	KVL12	MC100LVEL12DT	KV12	MC100LVEL39DW	100LVEL39
MC100LVEL16D	KVL16	MC100LVEL16DT	KV16	MC100LVEL40DW	100LVEL40
MC100LVEL31D	KVL31	MC100LVEL31DT	KV31	MC100LVEL56DW	100LVEL56
MC100LVEL32D	KVL32	MC100LVEL32DT	KV32	MC100LVEL59DW	100LVEL59
MC100LVEL33D	KVL33	MC100LVEL33DT	KV33	MC100LVEL90DW	100LVEL90
MC100LVEL51D	KVL51	MC100LVEL51DT	KV51	MC100LVEL91DW	100LVEL91
MC100LVEL58D	KVL58	MC100LVEL58DT	KV58	MC100LVEL92DW	100LVEL92
MC10ELT20D	HLT20	MC10ELT20DT	HT20		
MC10ELT21D	HLT21	MC10ELT21DT	HT21		
MC10ELT22D	HLT22	MC10ELT22DT	HT22		
MC10ELT24D	HLT24	MC10ELT24DT	HT24		
MC10ELT25D	HLT25	MC10ELT25DT	HT25		
MC10ELT28D	HLT28	MC10ELT28DT	HT28		
MC100ELT20D	KLT20	MC100ELT20DT	KT20		
MC100ELT21D	KLT21	MC100ELT21DT	KT21		
MC100ELT22D	KLT22	MC100ELT22DT	KT22		
MC100ELT23D	KLT23	MC100ELT23DT	KT23		
MC100ELT24D	KLT24	MC100ELT24DT	KT24		
MC100ELT25D	KLT25	MC100ELT25DT	KT25		
MC100ELT28D	KLT28	MC100ELT28DT	KT28		
MC100LVELT22D	KVT22	MC100LVELT22DT	KR22		
MC100LVELT23D	KVT23	MC100LVELT23DT	KR23		

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### APPENDIX B ECLinPS Plus – Device Marking Look-Up Tables

8 LD SOIC = D Suffix DEVICE NAME	8 LD SOIC MARKING	8 LD TSSOP = DT Suffix DEVICE NAME	8 LD TSSOP MARKING	20 LD SOIC = DW Suffix DEVICE NAME	20 LD SOIC MARKING
MC10EP01D	HEP01	MC10EP01DT	HP01	MC10EP17DT	MC10 EP17
MC10EP05D	HEP05	MC10EP05DT	HP05	MC10EP56DT	MC10 EP56
MC10EP08D	HEP08	MC10EP08DT	HP08	MC10EP57DT	MC10 EP57
MC10EP11D	HEP11	MC10EP11DT	HP11	MC10EP90DT	MC10 EP90
MC10EP16D	HEP16	MC10EP16DT	HP16	MC100EP17DT	100 EP17
MC10EP31D	HEP31	MC10EP31DT	HP31	MC100EP56DT	100 EP56
MC10EP32D	HEP32	MC10EP32DT	HP32	MC100EP57DT	100 EP57
MC10EP33D	HEP33	MC10EP33DT	HP33	MC100EP90DT	100 EP90
MC10EP35D	HEP35	MC10EP35DT	HP35	MC100EP139DT	KEP 139
MC10EP51D	HEP51	MC10EP51DT	HP51	MC100LVEP14DT	100 VP14
MC10EP52D	HEP52	MC10EP52DT	HP52		
MC10EP58D	HEP58	MC10EP58DT	HP58		
MC10EP89D	HEP89	MC10EP89DT	HP89		
MC100EP01D	KEP01	MC100EP01DT	KP01		
MC100EP05D	KEP05	MC100EP05DT	KP05		
MC100EP08D	KEP08	MC100EP08DT	KP08		
MC100EP11D	KEP11	MC100EP11DT	KP11		
MC100EP16D	KEP16	MC100EP16DT	KP16		
MC100EP16FD	KEP60	MC100EP16FDT	KP60		
MC100EP31D	KEP31	MC100EP31DT	KP31		
MC100EP32D	KEP32	MC100EP32DT	KP32		
MC100EP33D	KEP33	MC100EP33DT	KP33		
MC100EP35D	KEP35	MC100EP35DT	KP35		
MC100EP51D	KEP51	MC100EP51DT	KP51		
MC100EP52D	KEP52	MC100EP52DT	KP52		
MC100EP58D	KEP58	MC100EP58DT	KP58		
MC10LVEP11D	HVP11	MC10LVEP11DT	HU11		
MC10LVEP16D	HVP16	MC10LVEP16DT	HU16		
MC100LVEP11D	KVP11	MC100LVEP11DT	KU11		
MC100LVEP16D	KVP16	MC100LVEP16DT	KU16		
MC10EPT20D	HPT20	MC10EPT20DT	HA20		
MC100EPT20D	KPT20	MC100EPT20DT	KA20		
MC100EPT21D	KPT21	MC100EPT21DT	KA21		
MC100EPT22D	KPT22	MC100EPT22DT	KA22		
MC100EPT23D	KPT23	MC100EPT23DT	KA23		
MC100EPT24D	KPT24	MC100EPT24DT	KA24		
MC100EPT25D	KPT25	MC100EPT25DT	KA25		
MC100EPT26D	KPT26	MC100EPT26DT	KA26		

## Notes

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