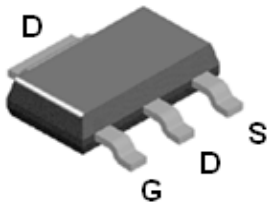
UNIKC Semiconductor

P0165EL

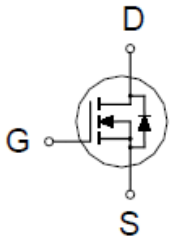
N-Channel Enhancement Mode MOSFET

PRODUCT SUMMARY

$V_{(BR)DSS}$	$R_{DS(ON)}$	I_D
650V	14Ω @V_{GS} = 10V	0.3A



SOT- 223



ABSOLUTE MAXIMUM RATINGS (T_A = 25 °C Unless Otherwise Noted)

PARAMETERS/TEST CONDITIONS		SYMBOL	LIMITS	UNITS
Gate-Source Voltage		V_{GS}	±30	V
Continuous Drain Current	T_A = 25 °C	I_D	0.3	A
	T_A = 70 °C		0.2	
Pulsed Drain Current[1]		I_{DM}	1.5	
Avalanche Current		I_{AS}	0.5	
Avalanche Energy	L = 10mH	E_{AS}	1.25	mJ
Power Dissipation	T_A = 25 °C	P_D	2	W
	T_A = 70 °C		1.3	
Operating Junction & Storage Temperature Range		T_J, T_{STG}	-55 to 150	°C

THERMAL RESISTANCE RATINGS

THERMAL RESISTANCE	SYMBOL	TYPICAL	MAXIMUM	UNITS
Junction-to-Ambient	$R_{\theta JA}$		64	°C / W

[1]Pulse width limited by maximum junction temperature.

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ELECTRICAL CHARACTERISTICS (T_J = 25 °C, Unless Otherwise Noted)

PARAMETER	SYMBOL	TEST CONDITIONS	LIMITS			UNITS
			MIN	TYP	MAX	
STATIC						
Drain-Source Breakdown Voltage	$V_{(BR)DSS}$	V_{GS} = 0V, I_D = 250μA	650			V
Gate Threshold Voltage	$V_{GS(th)}$	V_{DS} = V_{GS}, I_D = 250μA	2	3.1	4	
Gate-Body Leakage	I_{GSS}	V_{DS} = 0V, V_{GS} = ±30V			±100	nA
Zero Gate Voltage Drain Current	I_{DSS}	V_{DS} = 650V, V_{GS} = 0V			1	μA
		V_{DS} = 520V, V_{GS} = 0V , T_J = 55 °C			10	
Drain-Source On-State Resistance[1]	$R_{DS(ON)}$	V_{GS} = 10V, I_D = 0.15A	0.1	9.2	14	Ω
Forward Transconductance[1]	g_{fs}	V_{DS} = 10V, I_D = 0.15A		1.2		S
DYNAMIC						
Input Capacitance	C_{iss}	V_{GS} = 0V, V_{DS} = 25V, f = 1MHz		160		pF
Output Capacitance	C_{oss}			30		
Reverse Transfer Capacitance	C_{rss}			7		
Total Gate Charge[2]	Q_g	V_{DS} = 520V, V_{GS} = 10V, I_D = 0.3A		3.3		nC
Gate-Source Charge[2]	Q_{gs}			0.8		
Gate-Drain Charge[2]	Q_{gd}			0.6		
Turn-On Delay Time[2]	$t_{d(on)}$	V_{DS} = 325V, I_D ≅ 0.3A V_{GS} = 10V, R_{GS} = 25Ω		40		nS
Rise Time[2]	t_r			95		
Turn-Off Delay Time[2]	$t_{d(off)}$			164		
Fall Time[2]	t_f			105		
SOURCE-DRAIN DIODE RATINGS AND CHARACTERISTICS (T_J = 25 °C)						
Continuous Current	I_S				1	A
Forward Voltage[1]	V_{SD}	I_F = 0.3A, V_{GS} = 0V			1.5	V
Reverse Recovery Time	t_{rr}	I_F = 0.3A, dI/dt = 100A / μS		249		nS
Reverse Recovery Charge	Q_{rr}			0.63		uC

[1]Pulse test : Pulse Width ≤ 300 μsec, Duty Cycle ≤ 2%.

[2]Independent of operating temperature.

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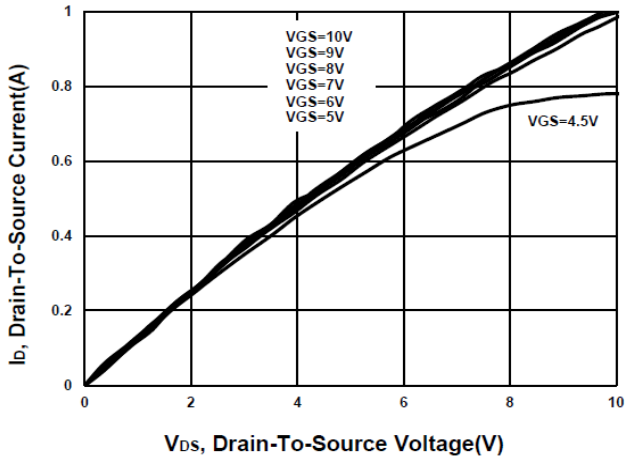
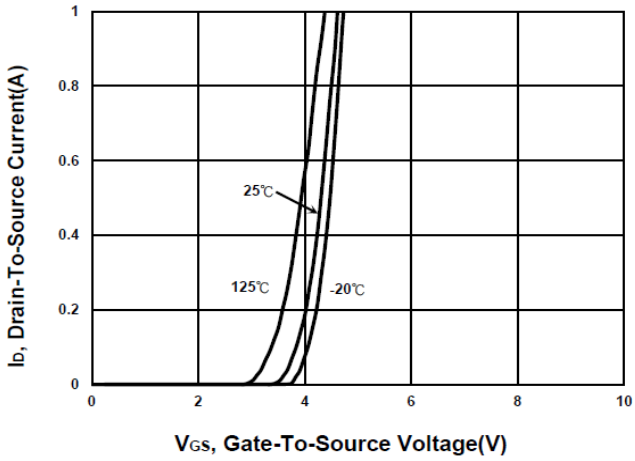
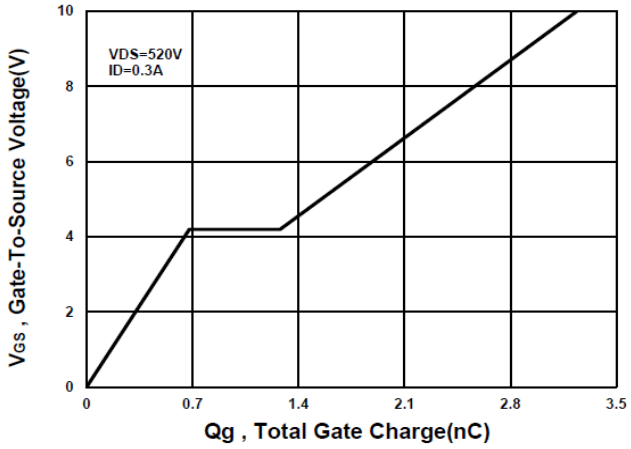
Output Characteristics



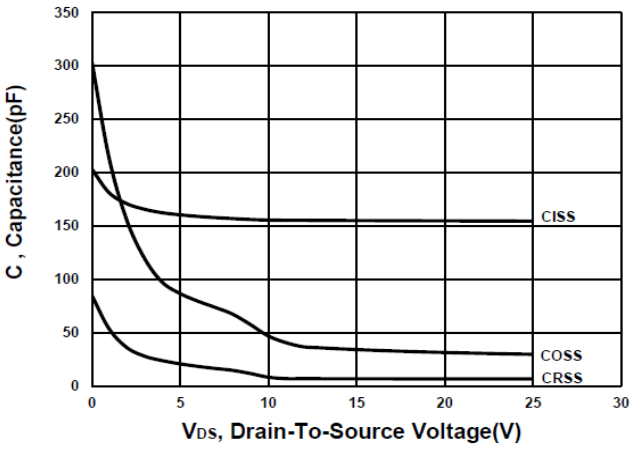
Transfer Characteristics



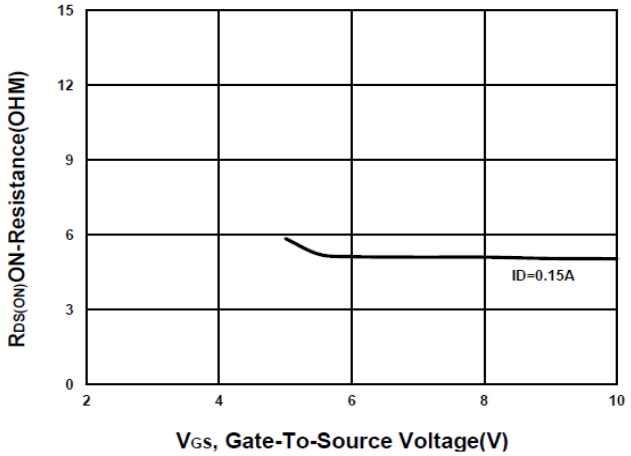
Gate charge Characteristics



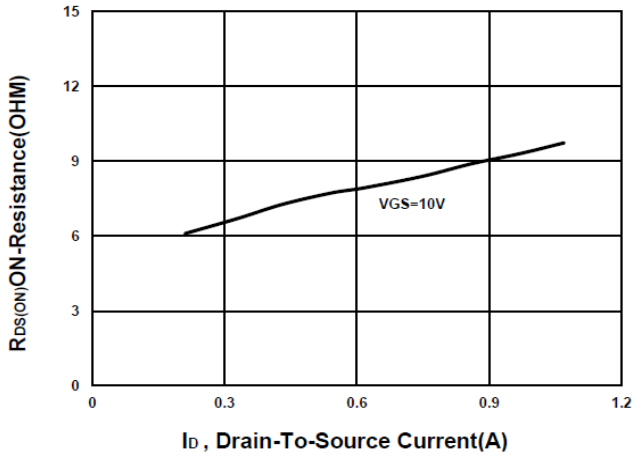
Capacitance Characteristic



On-Resistance VS Gate-To-Source



On-Resistance VS Drain Current



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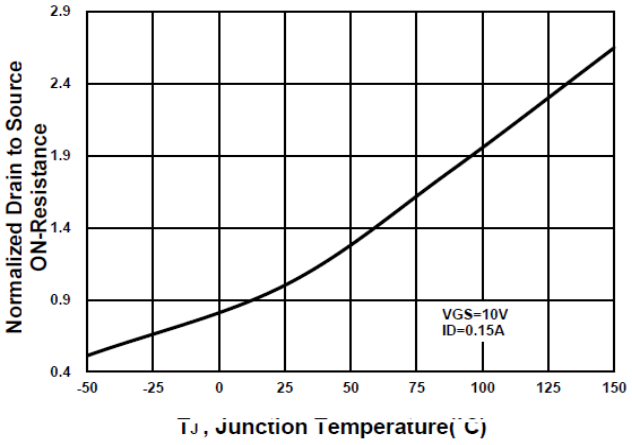
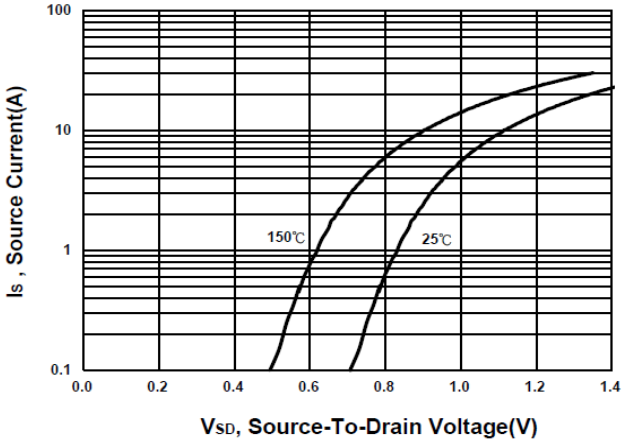
P0165EL

N-Channel Enhancement Mode MOSFET

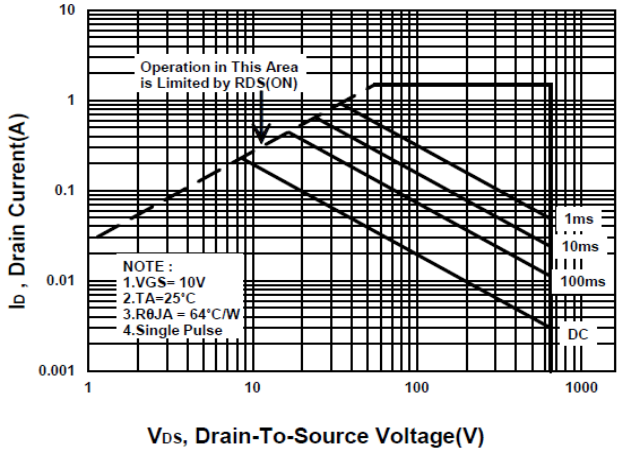
On-Resistance VS Temperature



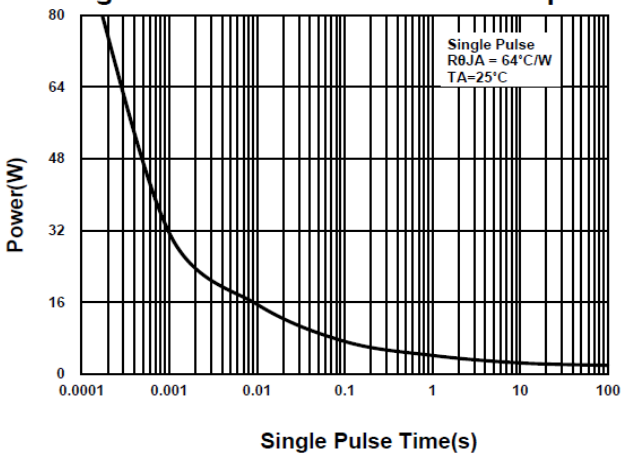
Source-Drain Diode Forward Voltage



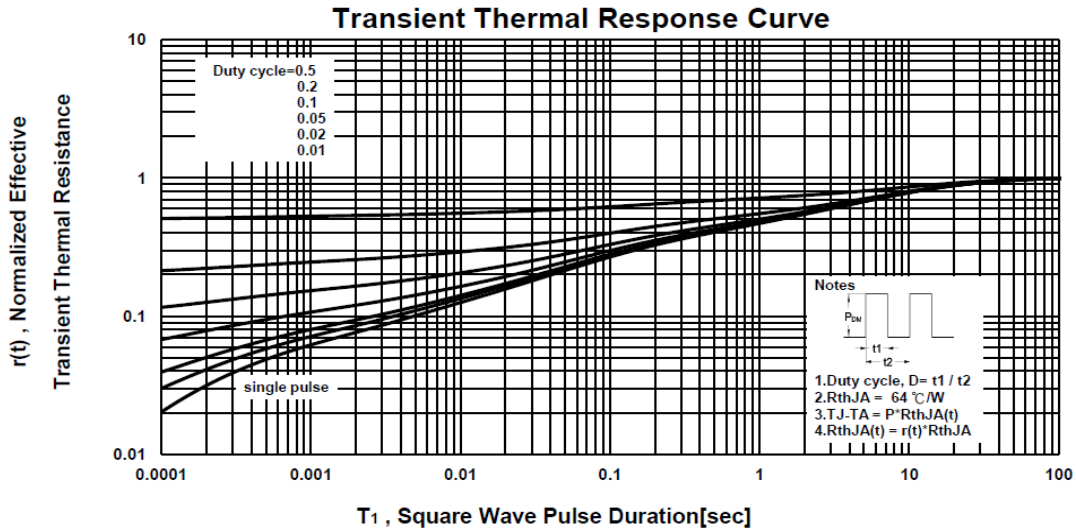
Safe Operating Area



Single Pulse Maximum Power Dissipation



Transient Thermal Response Curve



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P0165EL

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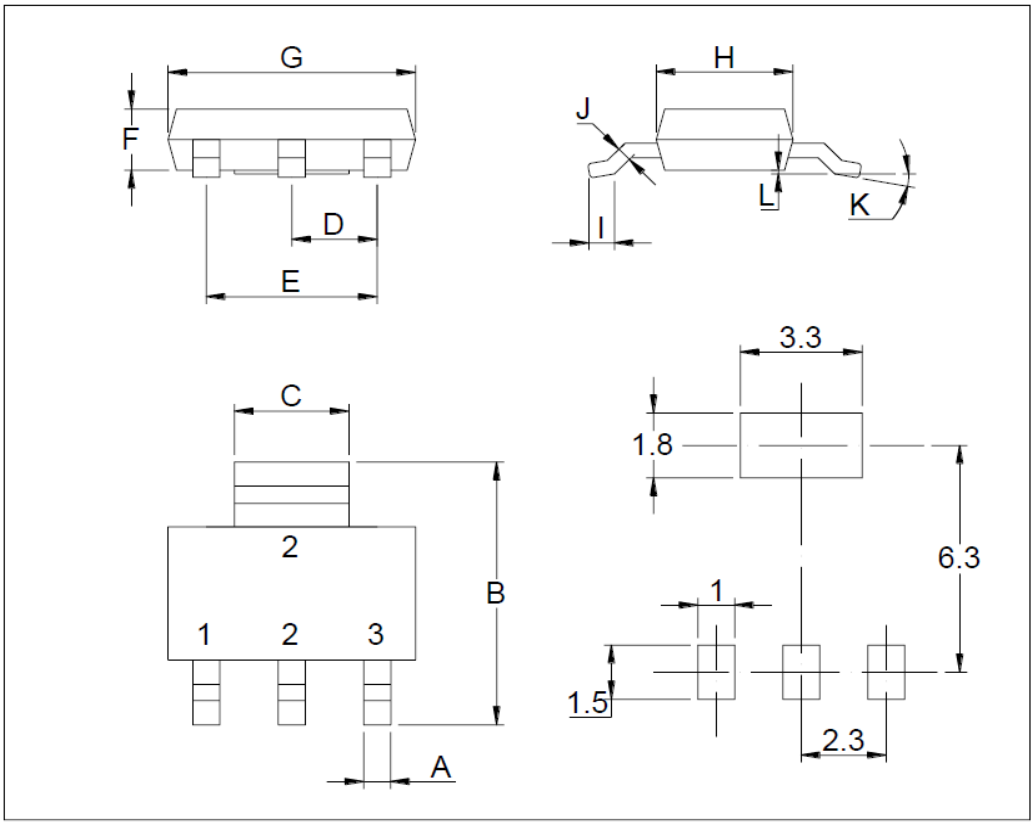
SOT-223 MECHANICAL DATA

Dimension	mm			Dimension	mm		
	Min.	Typ.	Max.		Min.	Typ.	Max.
A	0.60	0.76	0.84	H	3.30	3.50	3.70
B	6.70	7.00	7.30	I	0.50	1.00	1.20
C	2.85	3.00	3.10	J	0.23	0.3	0.4
D	2.25	2.30	2.35	K	0°		10°
E	4.35	4.60	4.85	L	0	0.1	0.2
F	1.40	1.60	1.80	M			
G	6.30	6.50	6.80	N			



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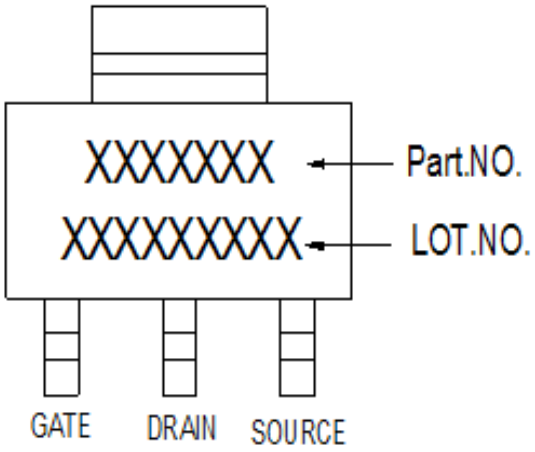
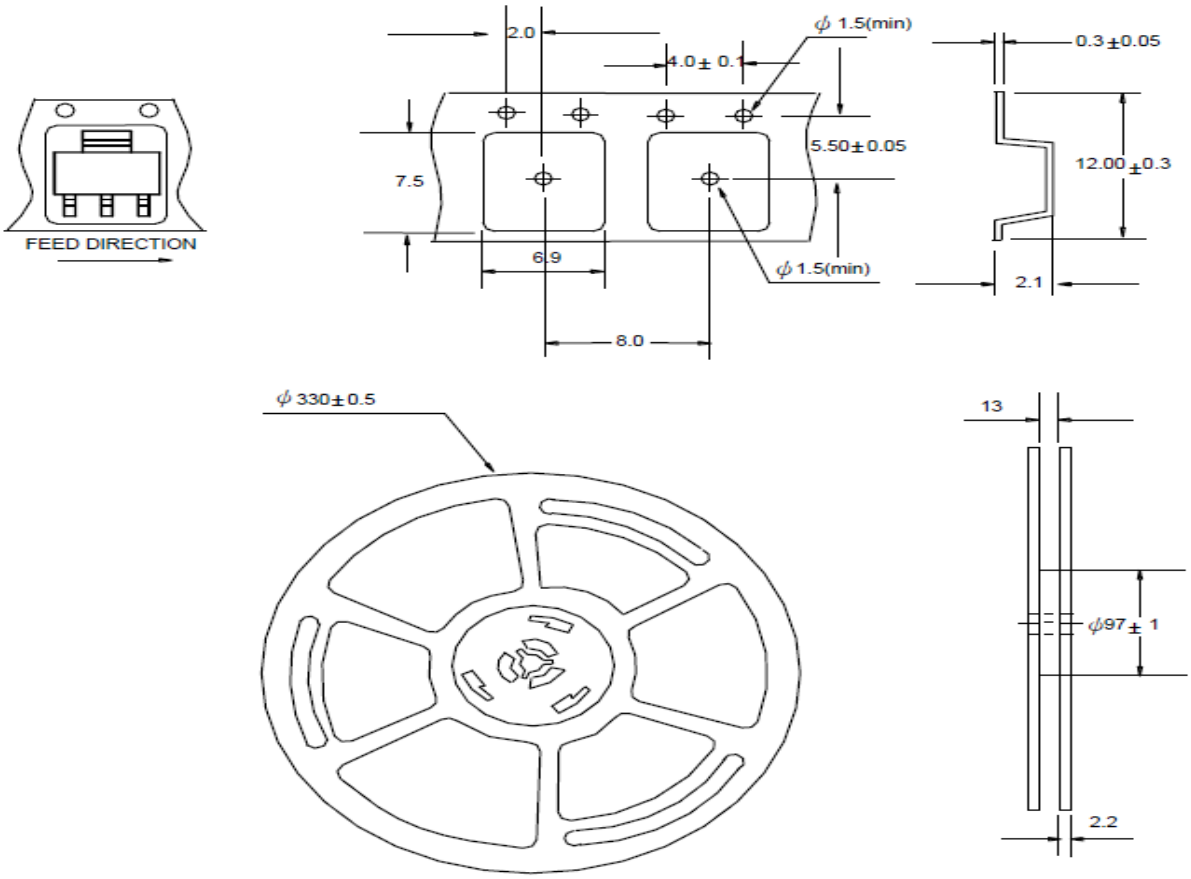
A. Marking Information



B. Tape&Reel Information:2500pcs/Reel



P0165EL

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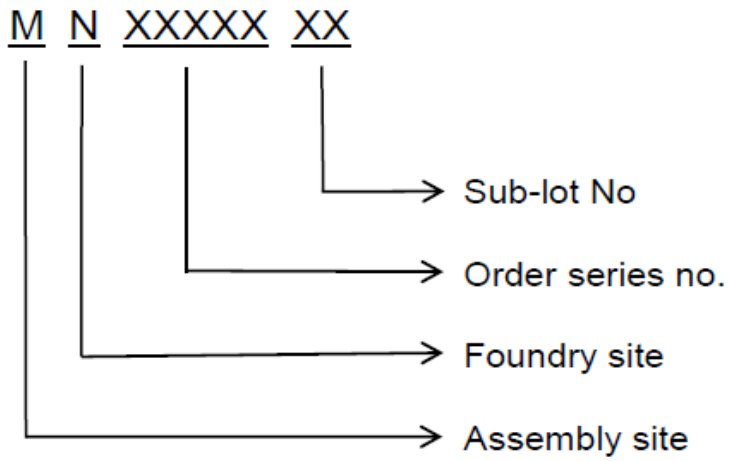
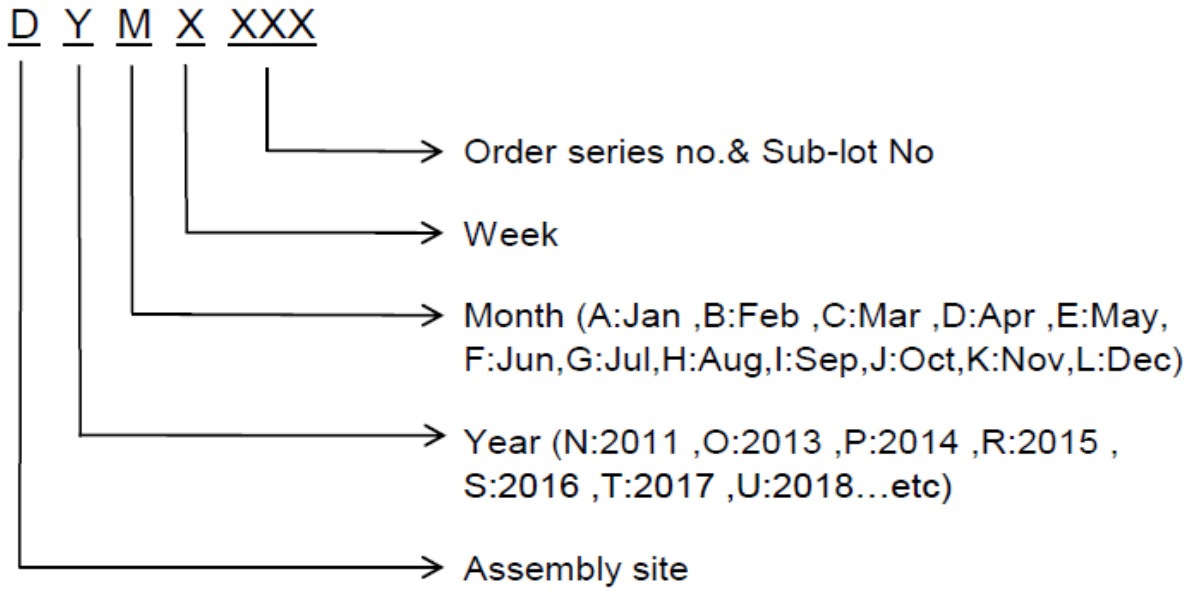
C. Lot No.&Date Code rule

1.Lot No.



2.Date Code



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D.Label rule

标签内容(Label content)

1	Label Size	30 * 90 mm
2	Font style	Times New Roman or Arial （或可区分英文”0”和数字”0”，”G和”Q”的字型即可）
3	U-NIKC	Height: 4 mm
4	Package	Height: 2 mm
5	Date	Height: 2 mm Shipping date: YYYY/MM/DD, ex. 2008/09/12
6	Device	Height: 3 mm (Max: 16 Digit)
7	Lot	Height: 3 mm (Max: 9 Digit) Sub lot
8	D/C	Height: 3 mm (Max: 7 Digit)
9	QTY	Height: 3 mm (Max: 6 Digit) Thousand mark is no needed
10	RoHS label	RoHS long axis: 12 mm minor axis:6 mm bottom color: White Font color: Black Font style: Arial
11	Halogen Free label	G Diameter: 10 mm bottom color: Green Font color: Black Font style: Arial
12	Scan information	Device / Lot / D/C / QTY , Insert “ / “ between every parts. for example: P3055LDG/G12345601/GGG2301/2000 DPI (Dots per inch): Over 300 dpi Code : Code 128 Height: 6 mm at least