UNIKC Semiconductor

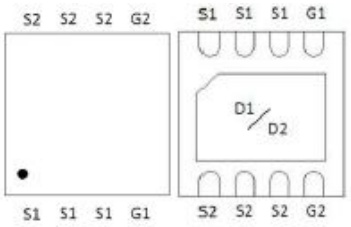
RoHS Compliant

PE544JZ

Dual N-Channel Enhancement Mode MOSFET

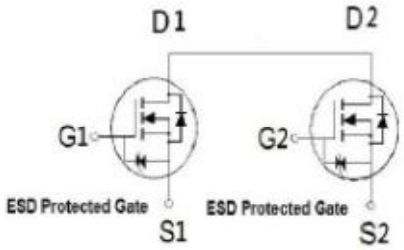
PRODUCT SUMMARY

$V_{(BR)DSS}$	$R_{DS(ON)}$	I_D
20V	8.5mΩ @V_{GS} = 4.5V	39A



G : GATE
D : DRAIN
S : SOURCE

PDFN 3X3S



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

PARAMETERS/TEST CONDITIONS		SYMBOL	LIMITS	UNITS
Drain-Source Voltage		V_{DS}	20	V
Gate-Source Voltage		V_{GS}	±8	
Continuous Drain Current[2]	T_C = 25 °C	I_D	39	A
	T_C = 100 °C		24	
	T_A = 25 °C		12	
	T_A = 70 °C		9.7	
Pulsed Drain Current[1]		I_{DM}	60	
Avalanche Current		I_{AS}	23.5	
Avalanche Energy	L = 0.1mH	E_{AS}	27.6	mJ
Power Dissipation	T_C = 25 °C	P_D	23	W
	T_C = 100 °C		9.4	
	T_A = 25 °C		2.2	
	T_A = 70 °C		1.4	
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[3]	$R_{\theta JA}$		55	°C / W
Junction-to-case	$R_{\theta JC}$		5.3	

[1]Pulse width limited by maximum junction temperature.

[2]Package limitation current is 24A.

[3]The value of $R_{\theta JA}$ is measured with the device mounted on 1in2 FR-4 board with 2oz. Copper, in a still air environment with T_A =25°C.

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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	20			V
Gate Threshold Voltage	$V_{GS(th)}$	V_{DS} = V_{GS}, I_D = 250μA	0.35	0.67	1	
Gate-Body Leakage	I_{GSS}	V_{DS} = 0V, V_{GS} = ±8V			±30	uA
Zero Gate Voltage Drain Current	I_{DSS}	V_{DS} = 16V, V_{GS} = 0V			1	μA
		V_{DS} = 10V, V_{GS} = 0V , T_J = 125 °C			10	
Drain-Source On-State Resistance[1]	$R_{DS(ON)}$	V_{GS} = 4.5V, I_D = 3A	5.1	6.8	8.5	mΩ
		V_{GS} = 3.8V, I_D = 3A	5.4	7.2	9	
		V_{GS} = 3.1V, I_D = 3A	5.7	7.6	9.5	
		V_{GS} = 2.5V, I_D = 3A	6.3	8.4	10.5	
		V_{GS} = 1.8V, I_D = 3A	7	11	15	
Forward Transconductance[1]	g_{fs}	V_{DS} = 5V, I_D = 3A		32		S
DYNAMIC						
Input Capacitance	C_{iss}	V_{GS} = 0V, V_{DS} = 10V, f = 1MHz		1589		pF
Output Capacitance	C_{oss}			214		
Reverse Transfer Capacitance	C_{rss}			165		
Gate Resistance	R_g	V_{GS} = 0V, V_{DS} = 0V, f = 1MHz		2.3		Ω
Total Gate Charge[2]	$Q_{g(VGS=4.5V)}$	V_{DS} = 10V, I_D = 3A		18.5		nC
	$Q_{g(VGS=3.8V)}$			16		
Gate-Source Charge[2]	Q_{gs}			1.7		
Gate-Drain Charge[2]	Q_{gd}			4.5		
Turn-On Delay Time[2]	$t_{d(on)}$	V_{DD} = 10V, $I_D \cong$ 3A, V_{GEN} = 4.5V, R_G = 6Ω		38		nS
Rise Time[2]	t_r			42		
Turn-Off Delay Time[2]	$t_{d(off)}$			60		
Fall Time[2]	t_f			25		
SOURCE-DRAIN DIODE RATINGS AND CHARACTERISTICS (T_J = 25 °C)						
Continuous Current[3]	I_S				1.8	A
Forward Voltage[1]	V_{SD}	I_F = 3A, V_{GS} = 0V			1.2	V
Reverse Recovery Time	t_{rr}	I_F = 3A, dI_F/dt = 100A / μS		24		nS
Reverse Recovery Charge	Q_{rr}			8		nC

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

[2]Independent of operating temperature.

[3]Package limitation current is 24A.

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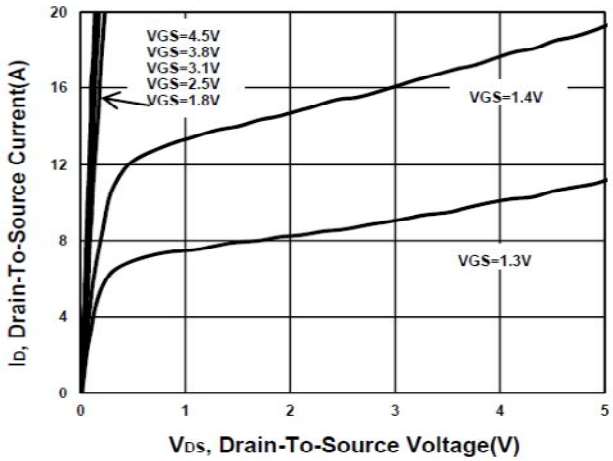
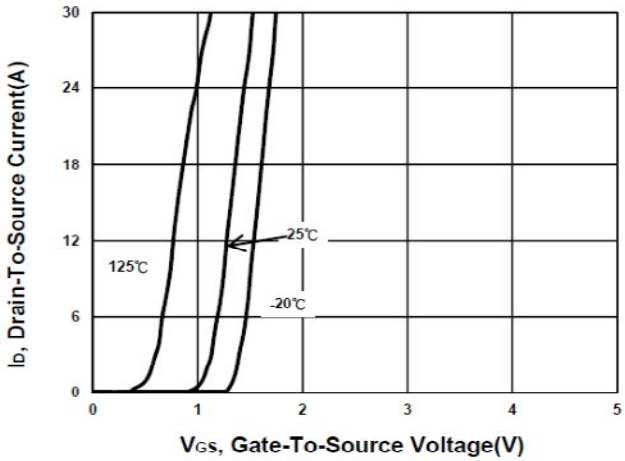
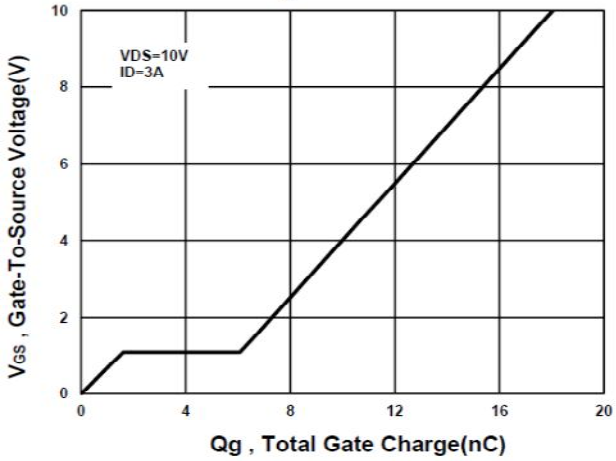
Output Characteristics



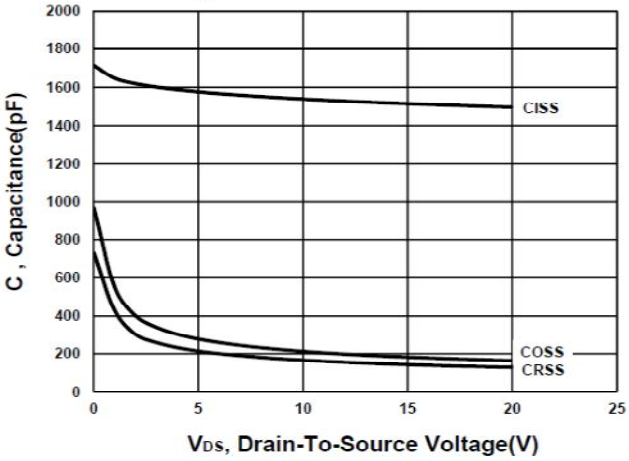
Transfer Characteristics



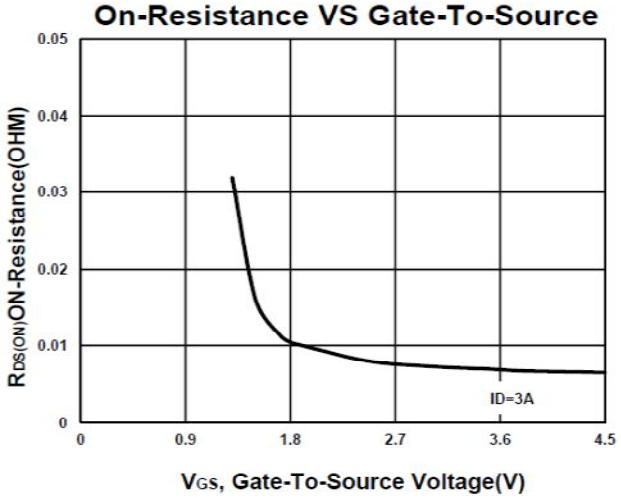
Gate charge Characteristics



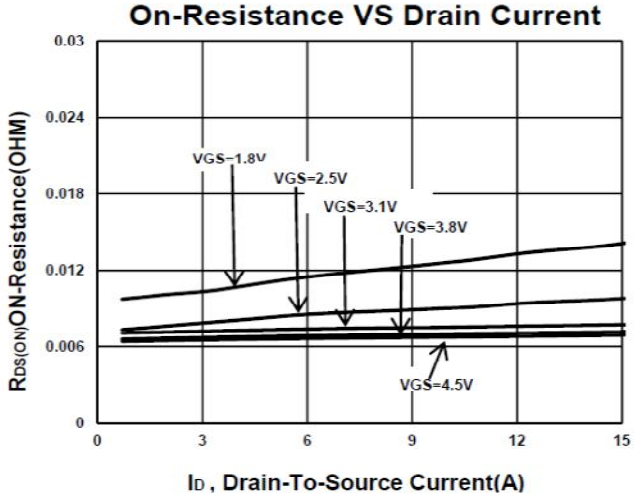
Capacitance Characteristic



On-Resistance VS Gate-To-Source



On-Resistance VS Drain Current



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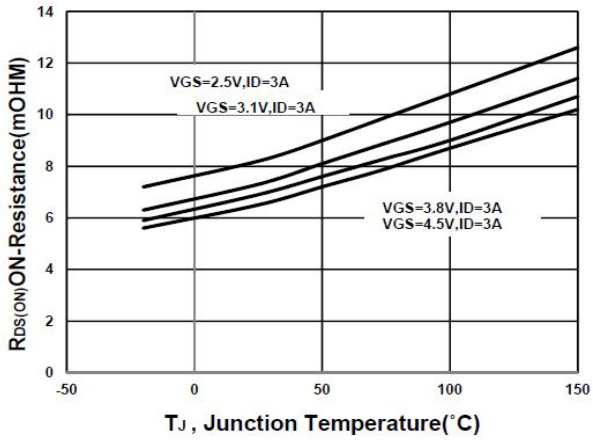
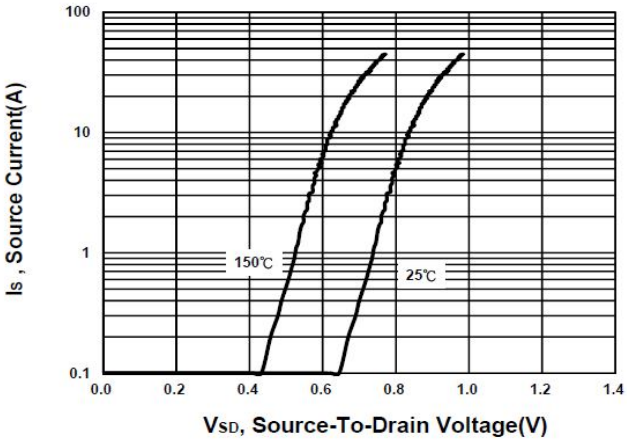
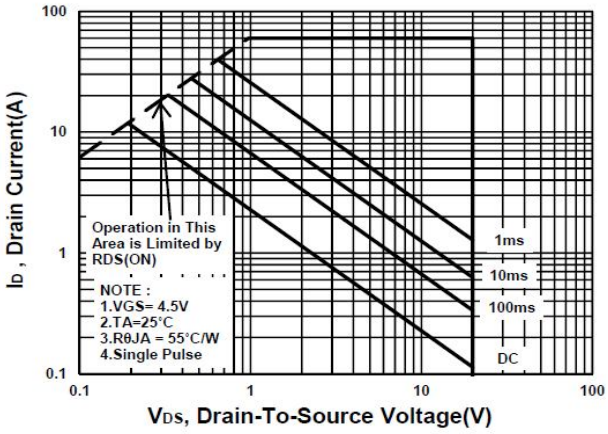
On-Resistance VS Temperature



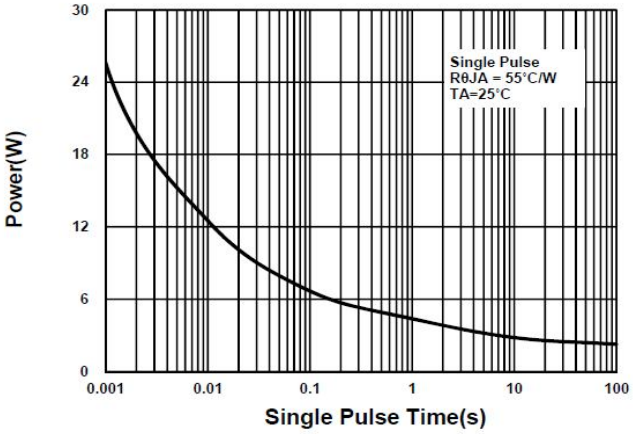
Source-Drain Diode Forward Voltage



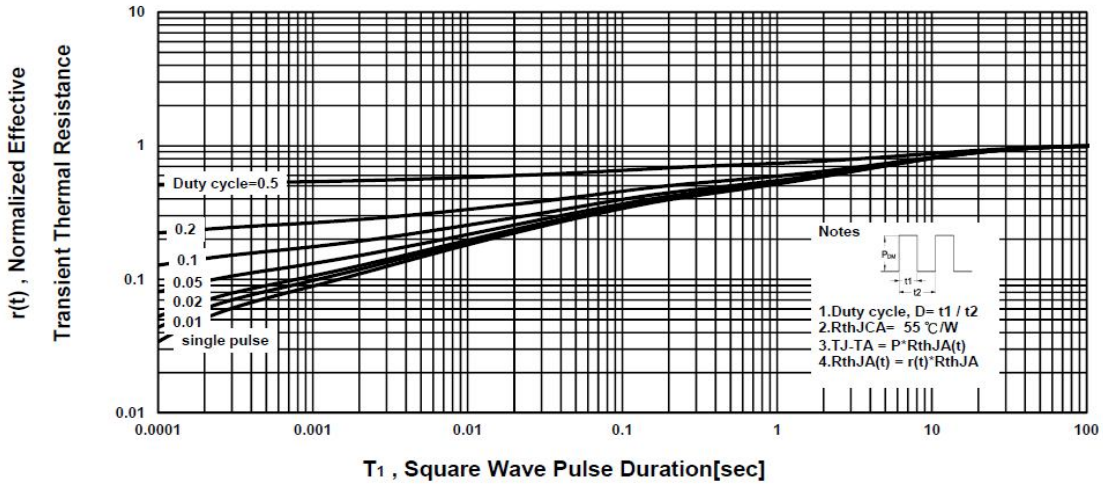
Safe Operating Area



Single Pulse Maximum Power Dissipation



Transient Thermal Response Curve



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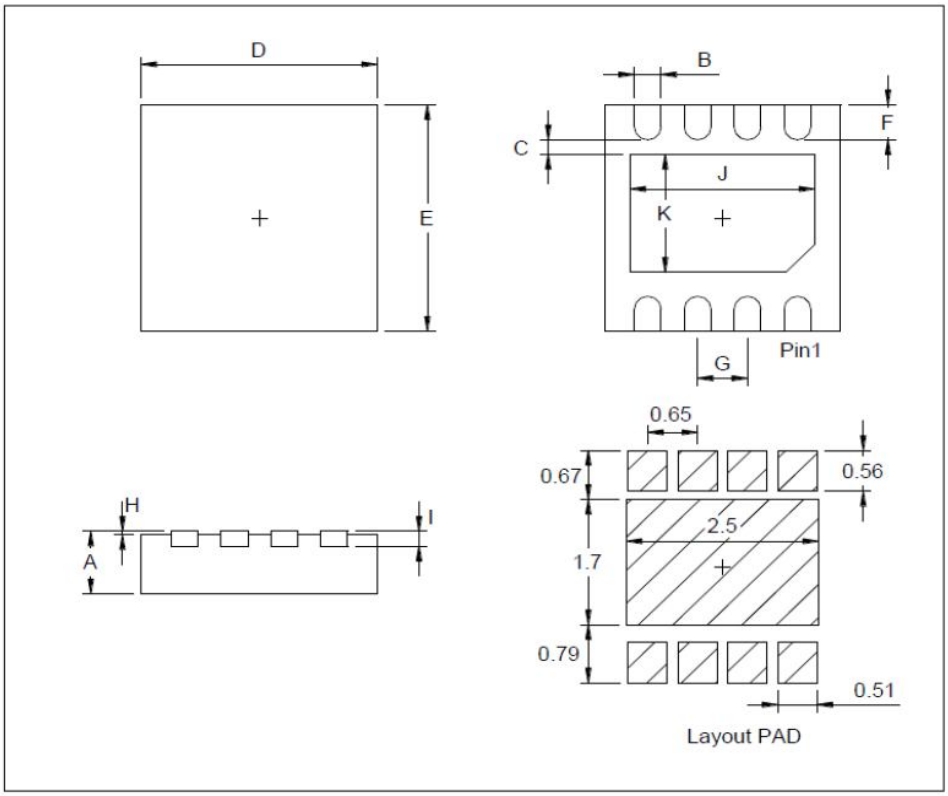
Package Dimension

PDFN 3x3S MECHANICAL DATA

Dimension	mm			Dimension	mm		
	Min.	Typ.	Max.		Min.	Typ.	Max.
A	0.70		0.90	I	0.195		0.211
B	0.25		0.35	J	2.20		2.40
C	0.25		0.45	K	1.40		1.60
D	2.90		3.10				
E	2.90		3.10				
F	0.324		0.476				
G	0.55	0.65	0.75				
H	0		0.05				



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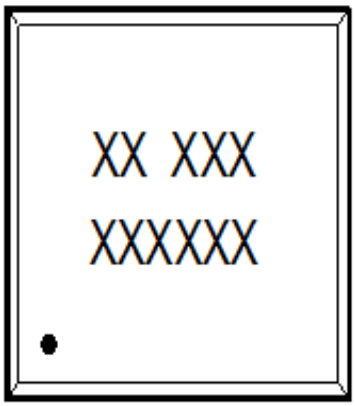
A. Marking Information(此产品代码为：L2)

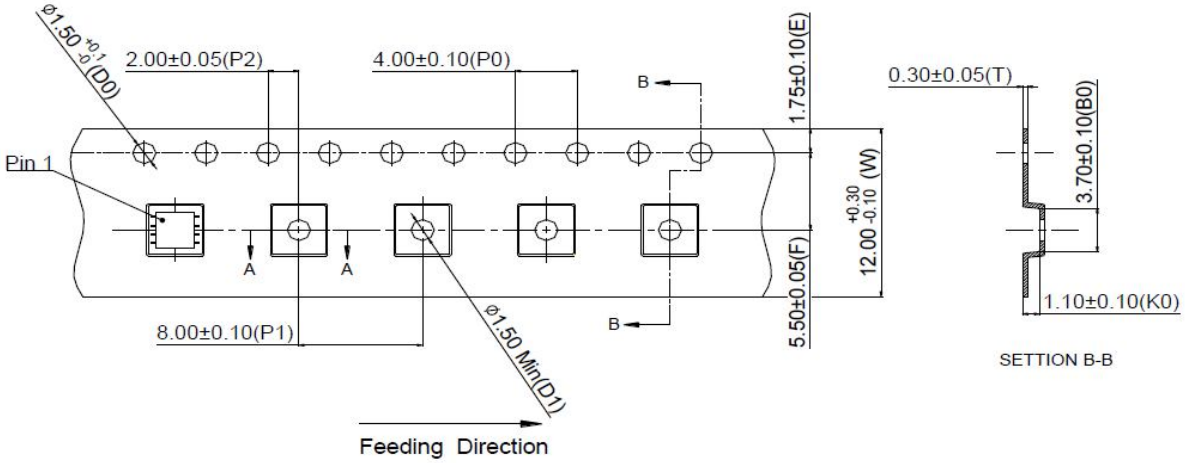


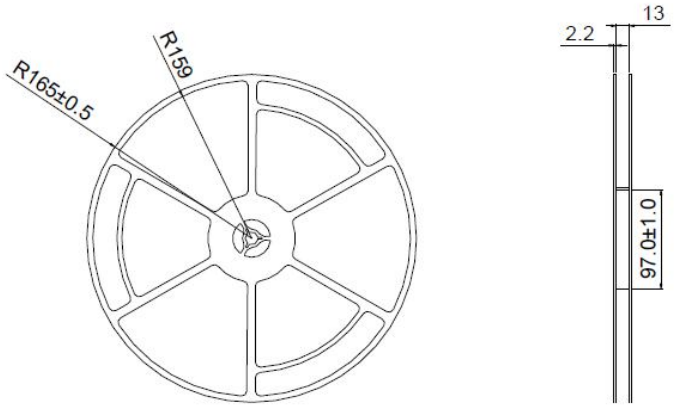
XX(前两码):产品代码

XXX

XXXXXX(后九码):LOT.NO

B. Tape&Reel Information:5000pcs/Reel





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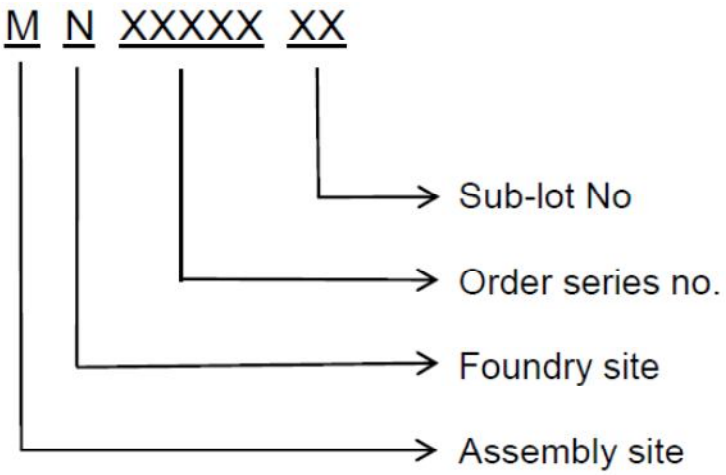
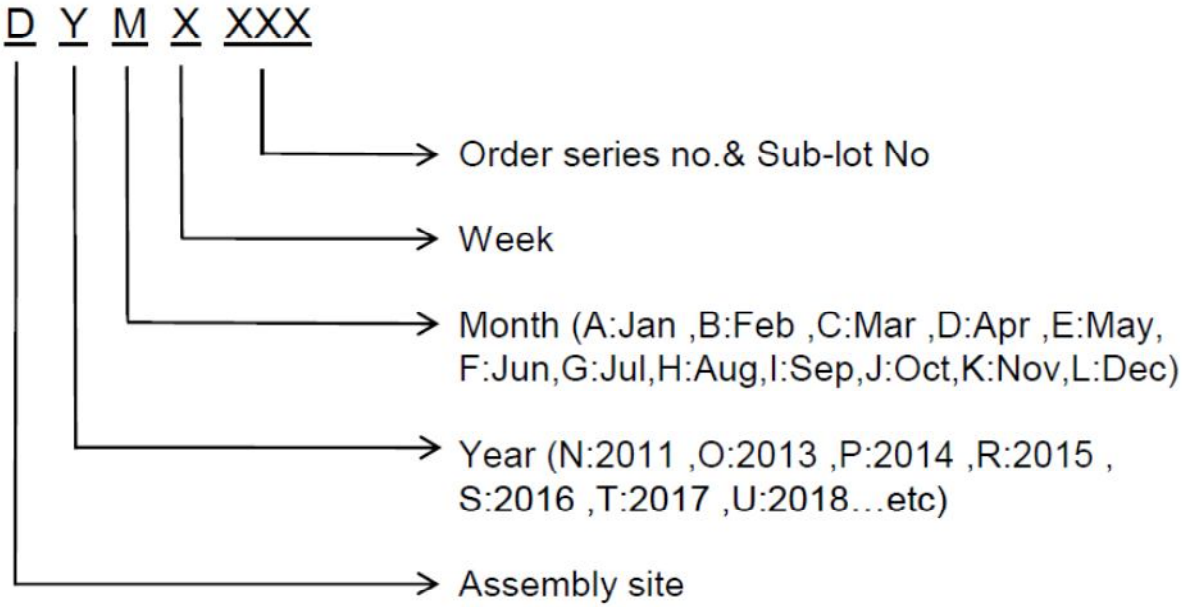
C. Lot No.&Date Code rule

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”O”和数字”0”，”G和”Q”的字型即可)
3	Great Power	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	Pb Free label	Pb Diameter: 1 cm bottom color: Green Font color: Black Font style: Arial
11	Halogen Free label	G Diameter: 1 cm bottom color: Green Font color: Black Font style: Arial
12	Scan info	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