UNIKC Semiconductor

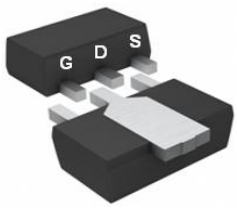
RoHS Compliant

PC561BA

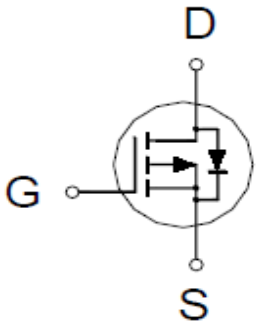
P-Channel Enhancement Mode MOSFET

PRODUCT SUMMARY

$V_{(BR)DSS}$	$R_{DS(ON)}$	I_D
-30V	45mΩ @V_{GS} = -10V	-5.7A



SOT-89



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

PARAMETERS/TEST CONDITIONS		SYMBOL	LIMITS	UNITS
Gate-Source Voltage		V_{GS}	±20	V
Continuous Drain Current	T_A = 25 °C	I_D	-5.7	A
	T_A = 70 °C		-4.5	
Pulsed Drain Current[1]		I_{DM}	-20	
Avalanche Current		I_{AS}	-12	
Avalanche Energy	L = 0.1mH	E_{AS}	7	mJ
Power Dissipation[3]	T_A = 25 °C	P_D	2.5	W
	T_A = 70 °C		1.6	
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[2]	t ≦10s	$R_{\theta JA}$		50	°C / W
Junction-to-Ambient[2]	Steady-State	$R_{\theta JA}$		73	
Junction-to-Case	Steady-State	$R_{\theta JC}$		18	

[1]Pulse width limited by maximum junction temperature.

[2] The value of $R_{\theta JA}$ is measured with the device mounted on 1in^2 FR-4 board with 2oz. Copper.

[3]The Power dissipation is based on $R_{\theta JA}$ t ≦10s value.

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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	-30			V
Gate Threshold Voltage	$V_{GS(th)}$	V_{DS} = V_{GS}, I_D = -250μA	-1.3	-1.6	-2.3	
Gate-Body Leakage	I_{GSS}	V_{DS} = 0V, V_{GS} = ±20V			±100	nA
Zero Gate Voltage Drain Current	I_{DSS}	V_{DS} = -24V, V_{GS} = 0V			-1	μA
		V_{DS} = -20V, V_{GS} = 0V , T_J = 55 °C			-10	
Drain-Source On-State Resistance[1]	$R_{DS(ON)}$	V_{GS} = -4.5V, I_D = -4A		46	85	mΩ
		V_{GS} = -10V, I_D = -4A		32	45	
Forward Transconductance[1]	g_{fs}	V_{DS} = -5V, I_D = -4A		10		S
DYNAMIC						
Input Capacitance	C_{iss}	V_{GS} = 0V, V_{DS} = -15V, f = 1MHz		585		pF
Output Capacitance	C_{oss}			90		
Reverse Transfer Capacitance	C_{rss}			67		
Total Gate Charge[2]	Q_g(V_{GS}= -10V)	V_{DS} = -15V , V_{GS} =-10V, I_D = -4A		12		nC
	Q_g(V_{GS}= -4.5V)			6		
Gate-Source Charge[2]	Q_{gs}			1.5		
Gate-Drain Charge[2]	Q_{gd}			3.3		
Turn-On Delay Time[2]	$t_{d(on)}$	V_{DD} = -15V, V_{GS} = -10V I_D ≅ -4A, R_{GS} = 6Ω		17		nS
Rise Time[2]	t_r			24		
Turn-Off Delay Time[2]	$t_{d(off)}$			18		
Fall Time[2]	t_f			39		
SOURCE-DRAIN DIODE RATINGS AND CHARACTERISTICS (T_J = 25 °C)						
Continuous Current	I_S				-2	A
Forward Voltage[1]	V_{SD}	I_F = -4A, V_{GS} = 0V			-1.1	V
Reverse Recovery Time	t_{rr}	I_F = -4A, dI_F/dt = 100A / μS		10		nS
Reverse Recovery Charge	Q_{rr}			2		nC

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

[2]Independent of operating temperature.

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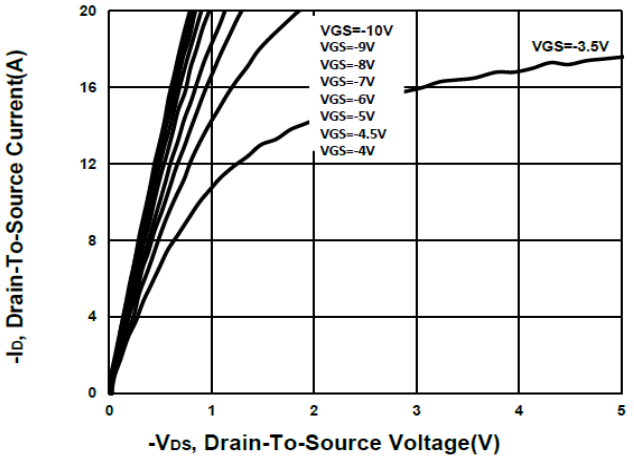
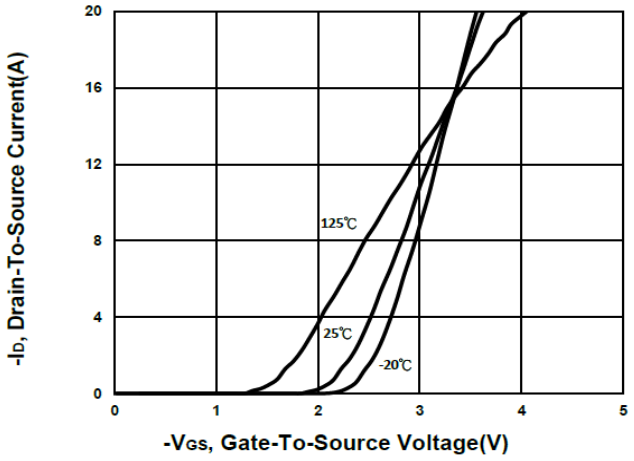
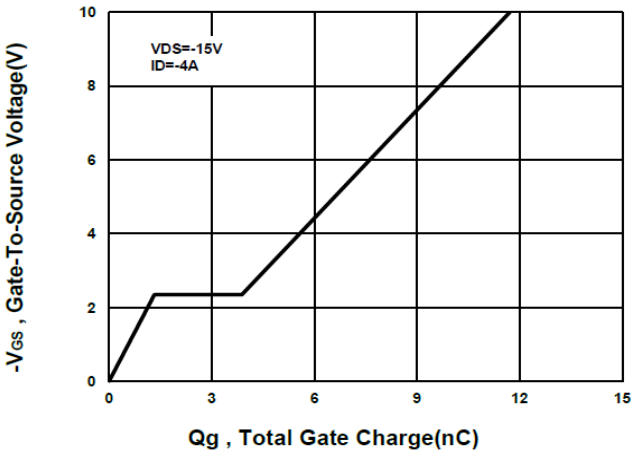
Output Characteristics



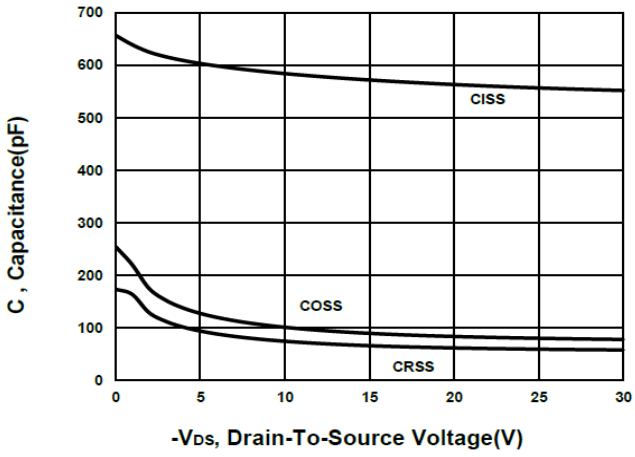
Transfer Characteristics



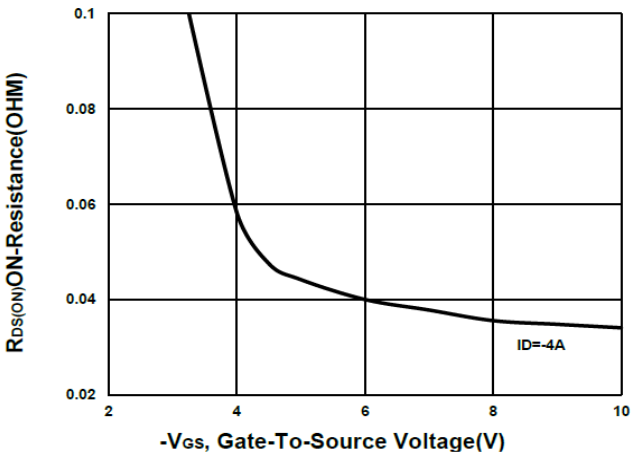
Gate charge Characteristics



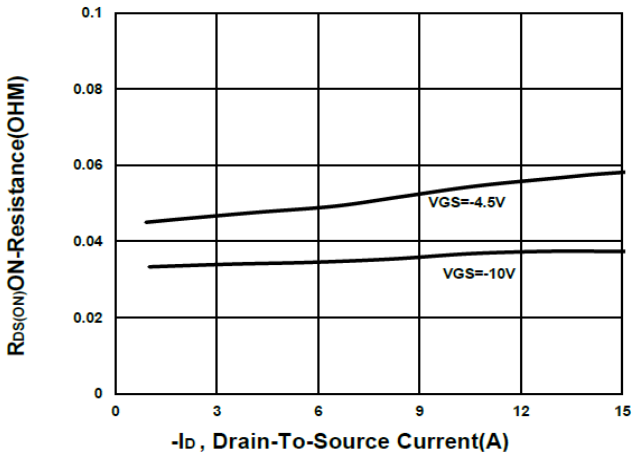
Capacitance Characteristic



On-Resistance VS Gate-To-Source



On-Resistance VS Drain Current



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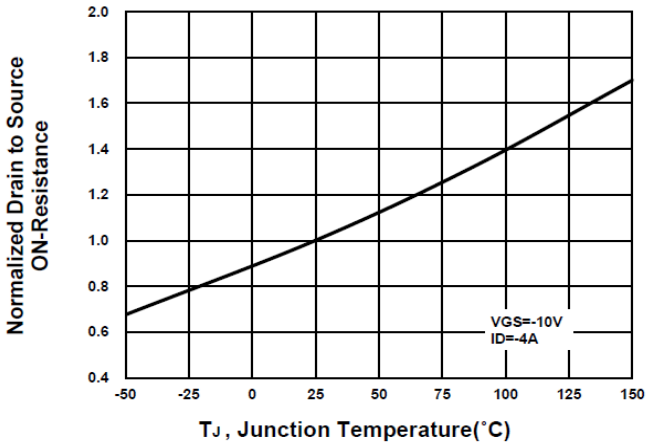
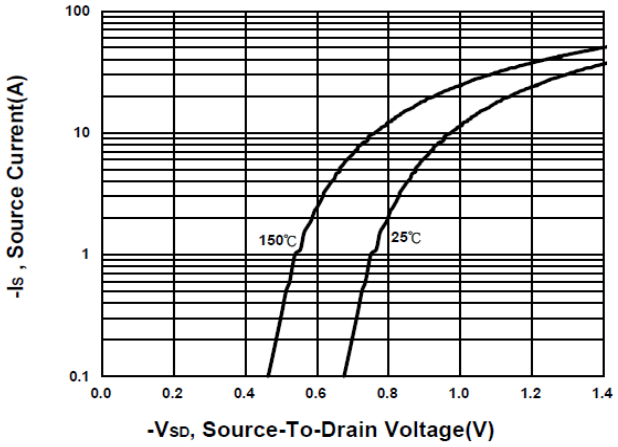
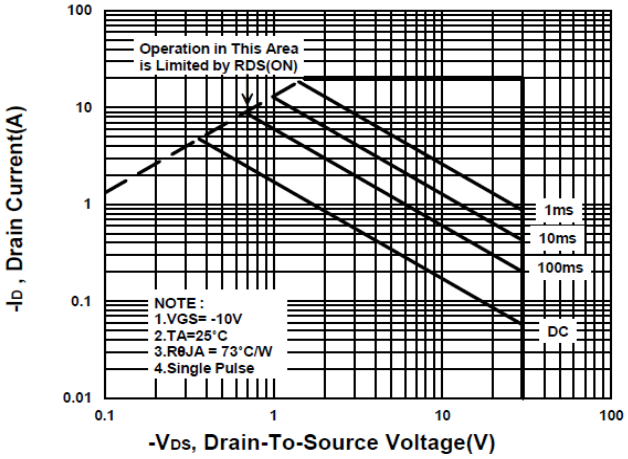
On-Resistance VS Temperature



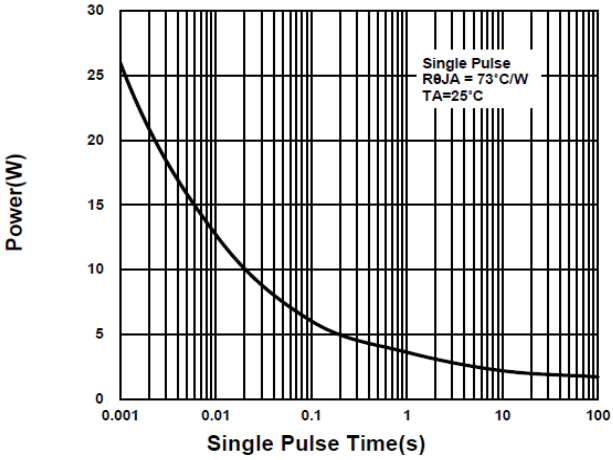
Source-Drain Diode Forward Voltage



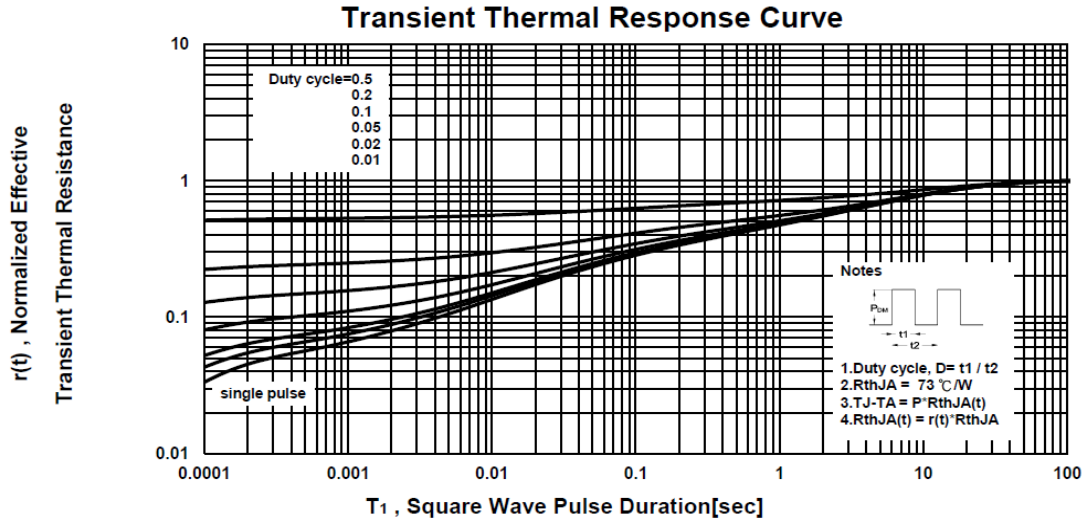
Safe Operating Area



Single Pulse Maximum Power Dissipation



Transient Thermal Response Curve



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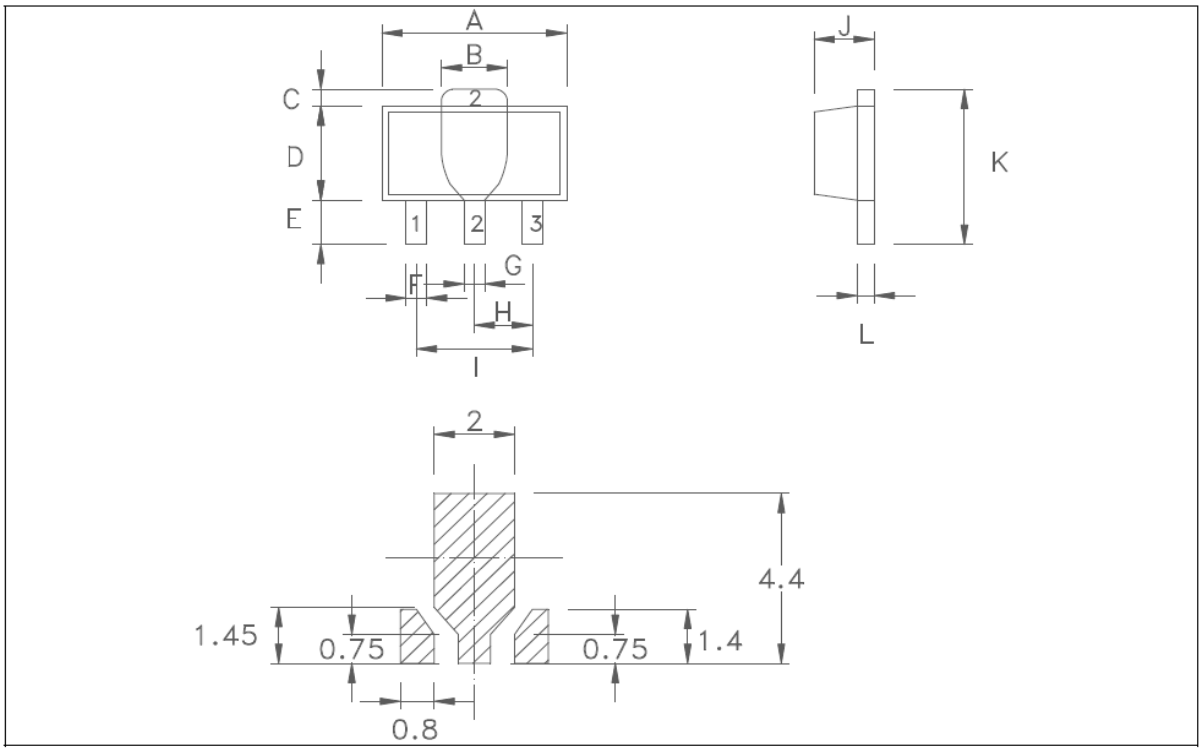
Package Dimension

SOT-89 MECHANICAL DATA

Dimension	mm			Dimension	mm		
	Min.	Typ.	Max.		Min.	Typ.	Max.
A	4.45	4.5	4.55	G	0.36	0.50	0.56
B	1.4	1.7	1.8	H	1.3	1.5	1.7
C	0	0.7	1.05	I	2.8	3.0	3.2
D	2.3	2.5	2.6	J	1.4	1.5	1.6
E	0.8	1.04	1.2	K	3.8	4.2	4.25
F	0.3	0.46	0.52	L	0.35	0.4	0.44



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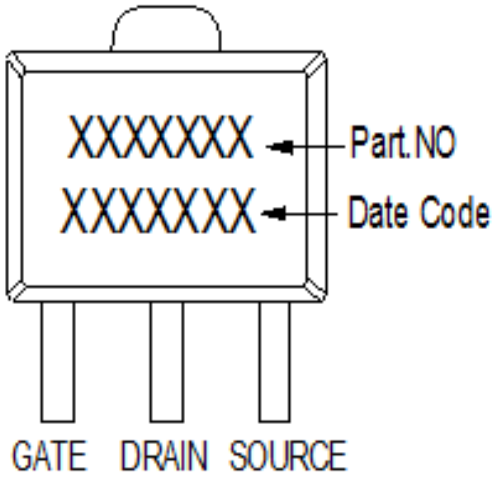
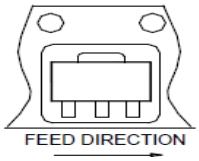
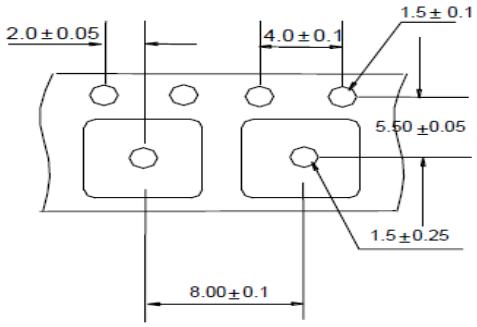
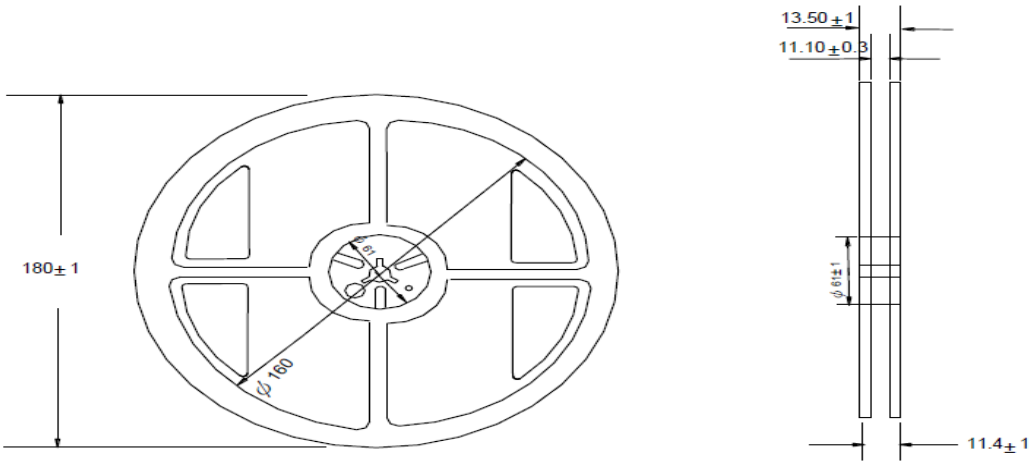
A. Marking Information



B. Tape&Reel Information:1000pcs/Reel







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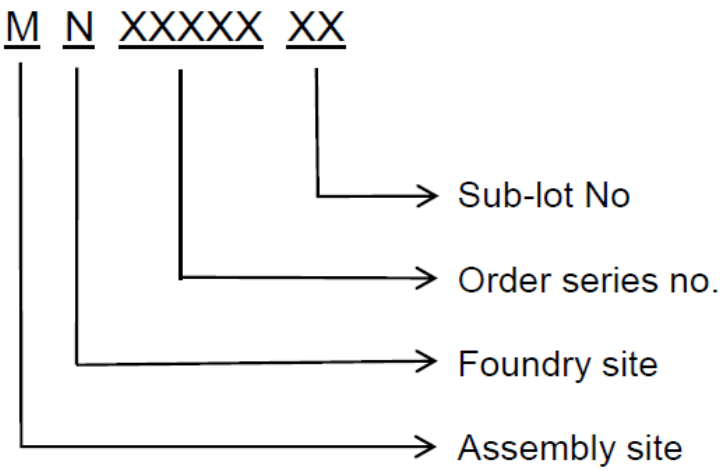
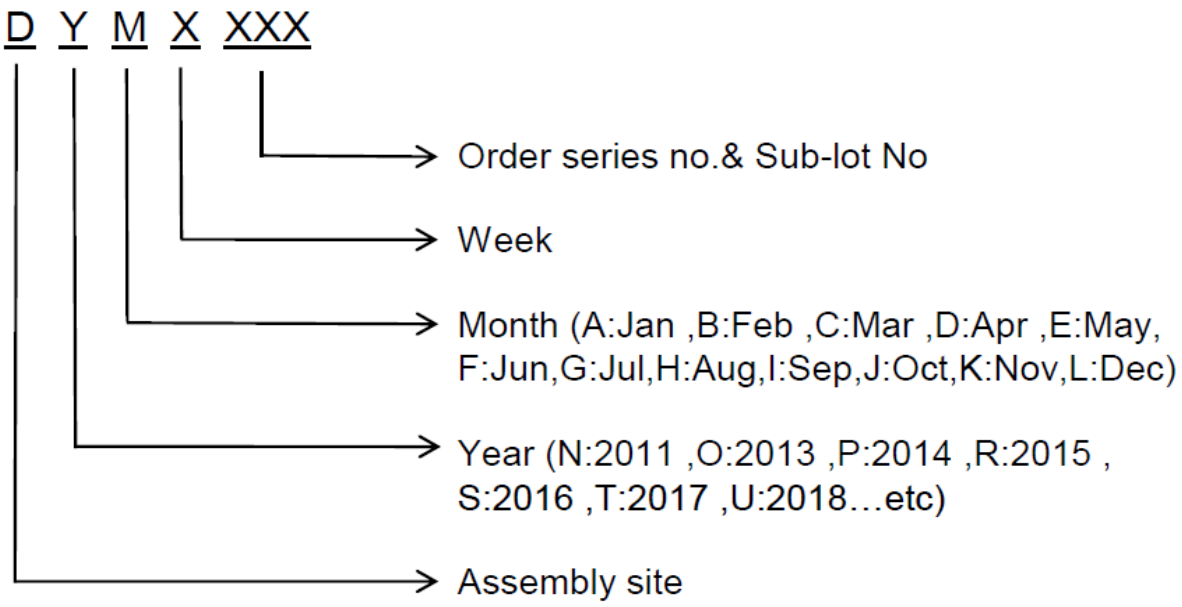
C. Lot No.&Date Code rule

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	Diameter: 1 cm bottom color: Green Font color: Black Font style: Arial
11	Halogen Free label	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