UNIKC Semiconductor

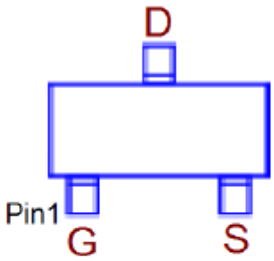
RoHS Compliant

PZ5D8EA

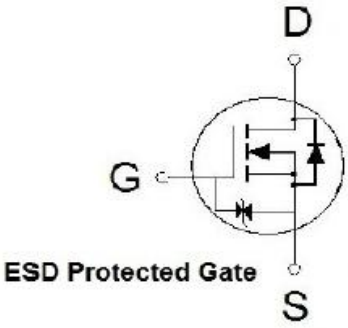
N-Channel Enhancement Mode MOSFET

PRODUCT SUMMARY

$V_{(BR)DSS}$	$R_{DS(ON)}$	I_D
20V	300mΩ @V_{GS} = 4.5V	0.84A



SOT-323



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

PARAMETERS/TEST CONDITIONS		SYMBOL	LIMITS	UNITS
Gate-Source Voltage		V_{GS}	±10	V
Continuous Drain Current[2]	T_A = 25 °C	I_D	0.84	A
	T_A = 70 °C		0.67	
Pulsed Drain Current[1]		I_{DM}	2.4	
Power Dissipation	T_A = 25 °C	P_D	0.36	W
	T_A = 70 °C		0.23	
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	$R_{\theta JA}$		340	°C / W

[1]limited by maximum junction temperature.

[2]Limited by package.

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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	0.4	0.63	1	V
Gate-Body Leakage	I_{GSS}	V_{DS} = 0V, V_{GS} = ±10V			±30	μA
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	μA
Drain-Source On-State Resistance[1]	$R_{DS(ON)}$	V_{GS} = 1.8V, I_D = 0.2A		300	700	mΩ
		V_{GS} = 2.5V, I_D = 0.25A		226	400	mΩ
		V_{GS} = 4.5V, I_D = 0.5A		177	300	mΩ
Forward Transconductance[1]	g_{fs}	V_{DS} = 5V, I_D = 0.5A		5		S
DYNAMIC						
Input Capacitance	C_{iss}	V_{GS} = 0V, V_{DS} = 10V, f = 1MHz		60		pF
Output Capacitance	C_{oss}			19		pF
Reverse Transfer Capacitance	C_{rss}			10		pF
Total Gate Charge[2]	Q_g	V_{DS} = 20V, I_D = 1A, V_{GS} = 4.5V		1.4		nC
Gate-Source Charge[2]	Q_{gs}			0.1		nC
Gate-Drain Charge[2]	Q_{gd}			0.3		nC
Turn-On Delay Time[2]	$t_{d(on)}$	V_{DD} = 10V, I_D ≅ 0.5A, V_{GS} = 4.5V, R_{GEN} = 5.1Ω		17		nS
Rise Time[2]	t_r			36		nS
Turn-Off Delay Time[2]	$t_{d(off)}$			86		nS
Fall Time[2]	t_f			173		nS
SOURCE-DRAIN DIODE RATINGS AND CHARACTERISTICS (T_J = 25 °C)						
Continuous Current	I_S				0.3	A
Forward Voltage[1]	V_{SD}	I_F = 0.5A, V_{GS} = 0V			1.2	V
Reverse Recovery Time	t_{rr}	I_F = 1A, dI/dt = 100A /μS		111		nS
Reverse Recovery Charge	Q_{rr}			102		uC

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

[2]Independent of operating temperature.

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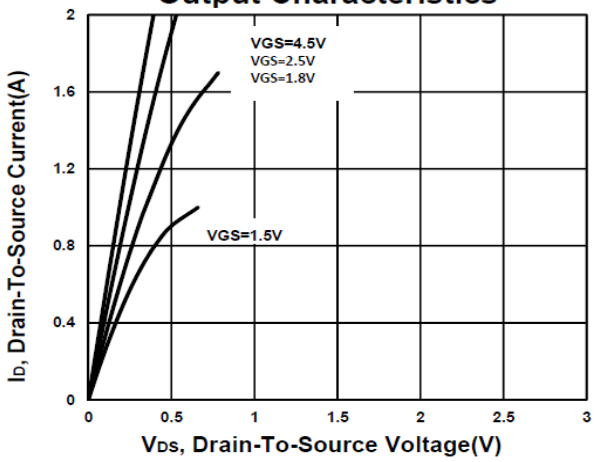
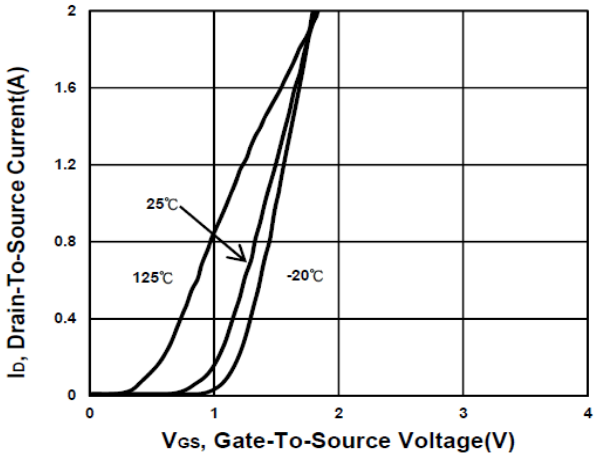
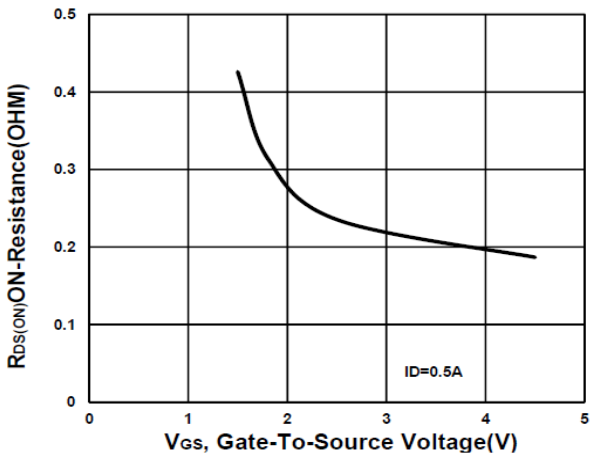
Output Characteristics



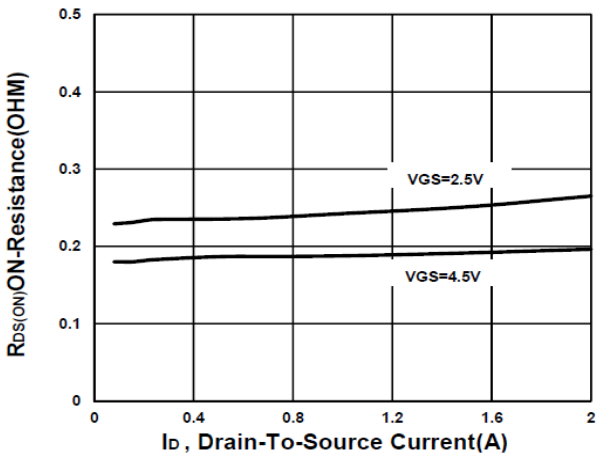
Transfer Characteristics



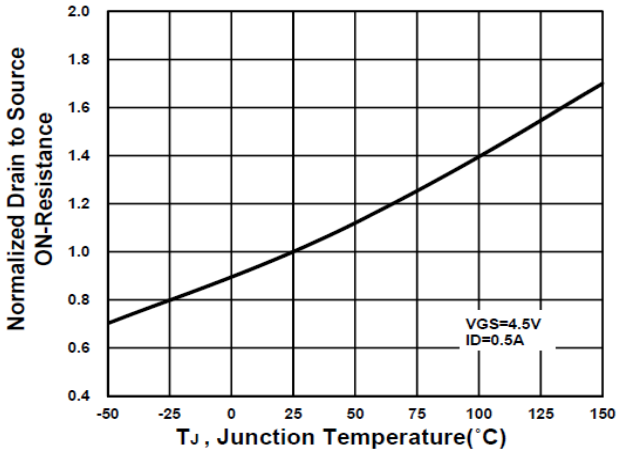
On-Resistance VS Gate-To-Source



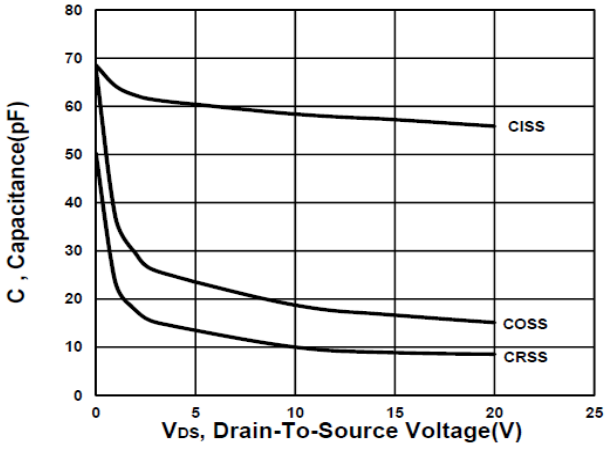
On-Resistance VS Drain Current



On-Resistance VS Temperature



Capacitance Characteristic



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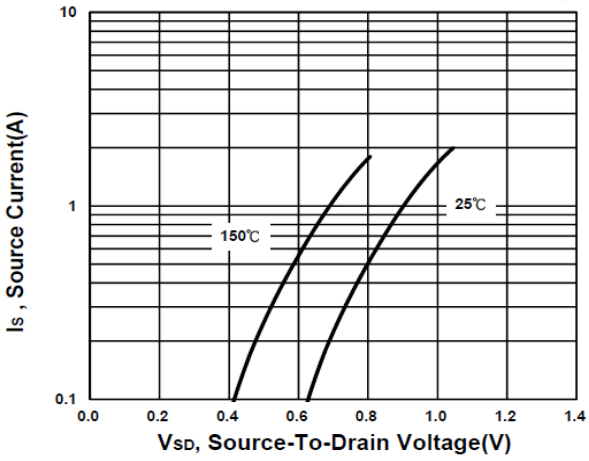
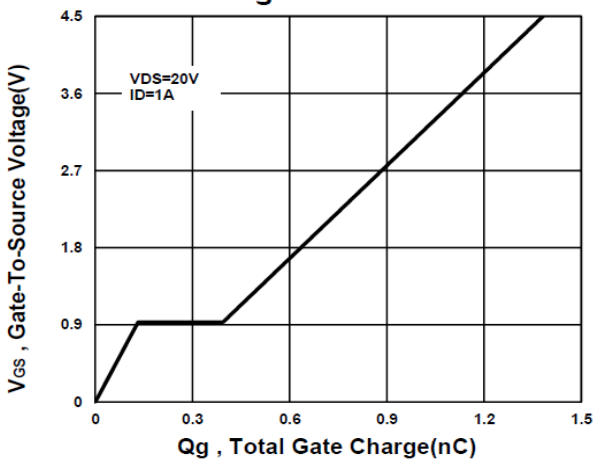
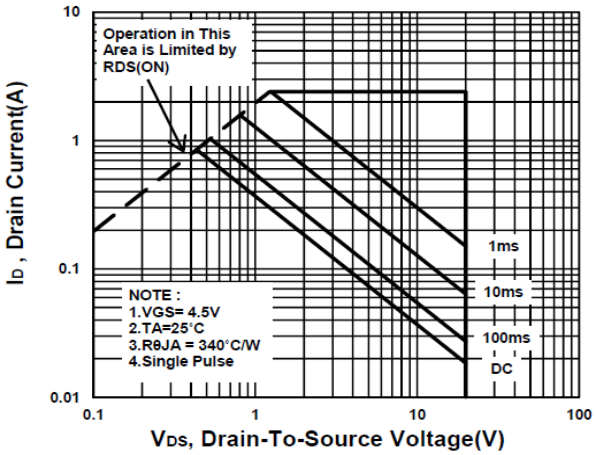
Source-Drain Diode Forward Voltage



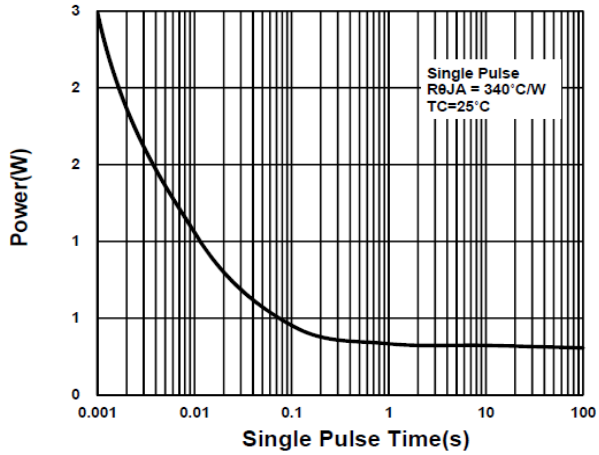
Gate charge Characteristics



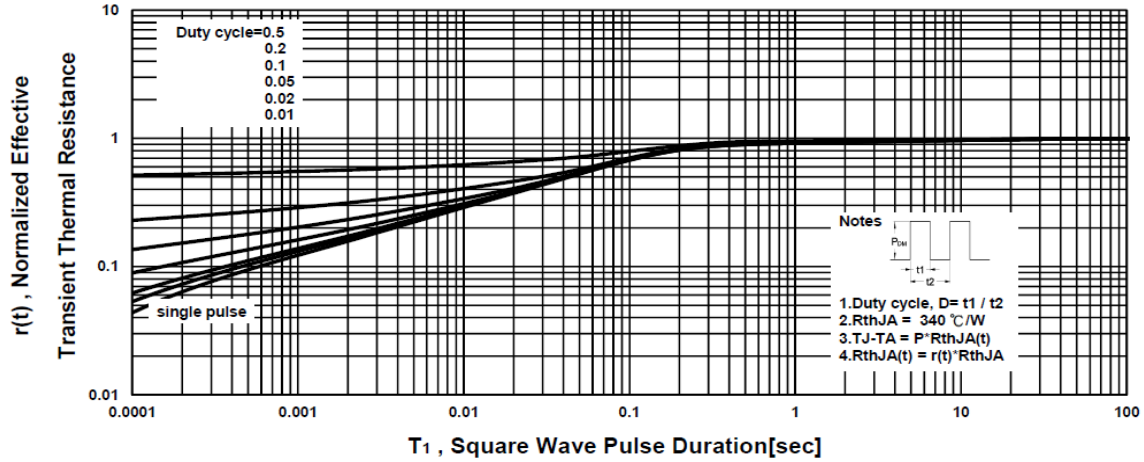
Safe Operating Area



Single Pulse Maximum Power Dissipation



Transient Thermal Response Curve



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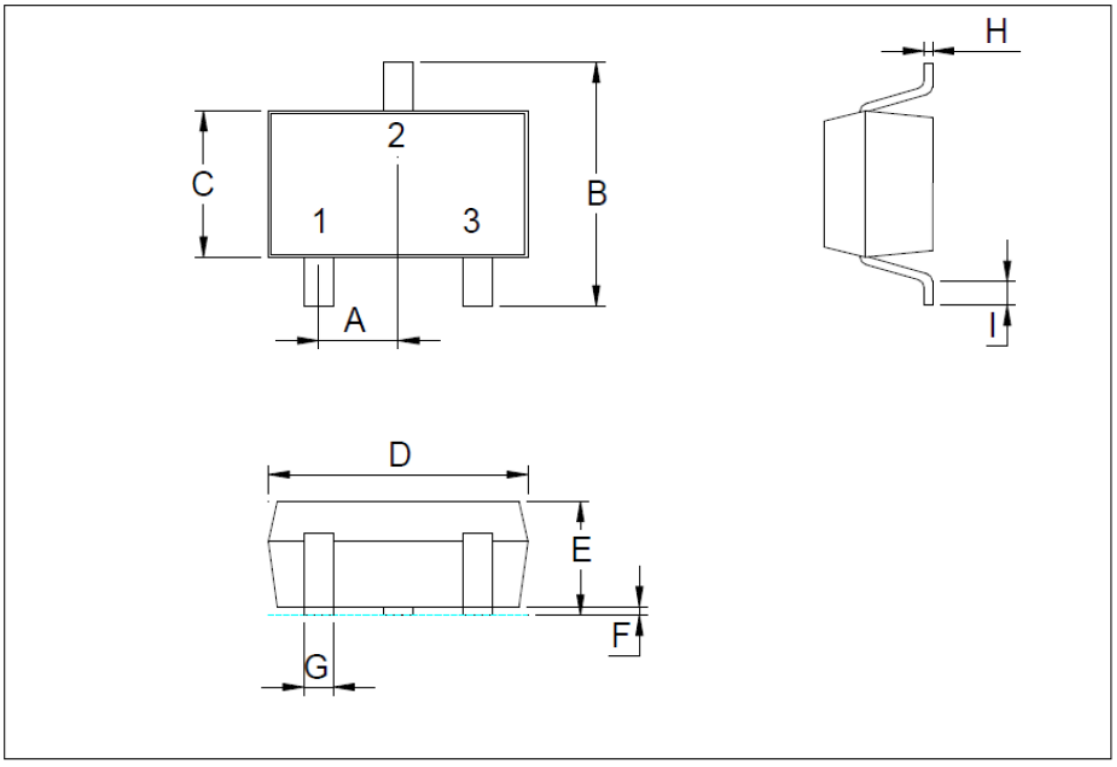
Package Dimension

SOT-323 MECHANICAL DATA

Dimension	mm			Dimension	mm		
	Min.	Typ.	Max.		Min.	Typ.	Max.
A		0.65		H	0.08		0.25
B	1.80		2.45	I	0.15		0.46
C	1.15		1.35	J			
D	1.80		2.20	K			
E	0.80		1.00	L			
F	0.00		0.10	M			
G	0.20		0.40	N			



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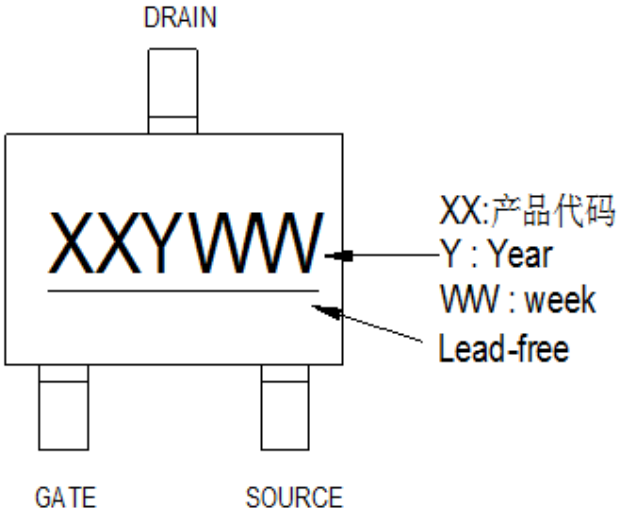
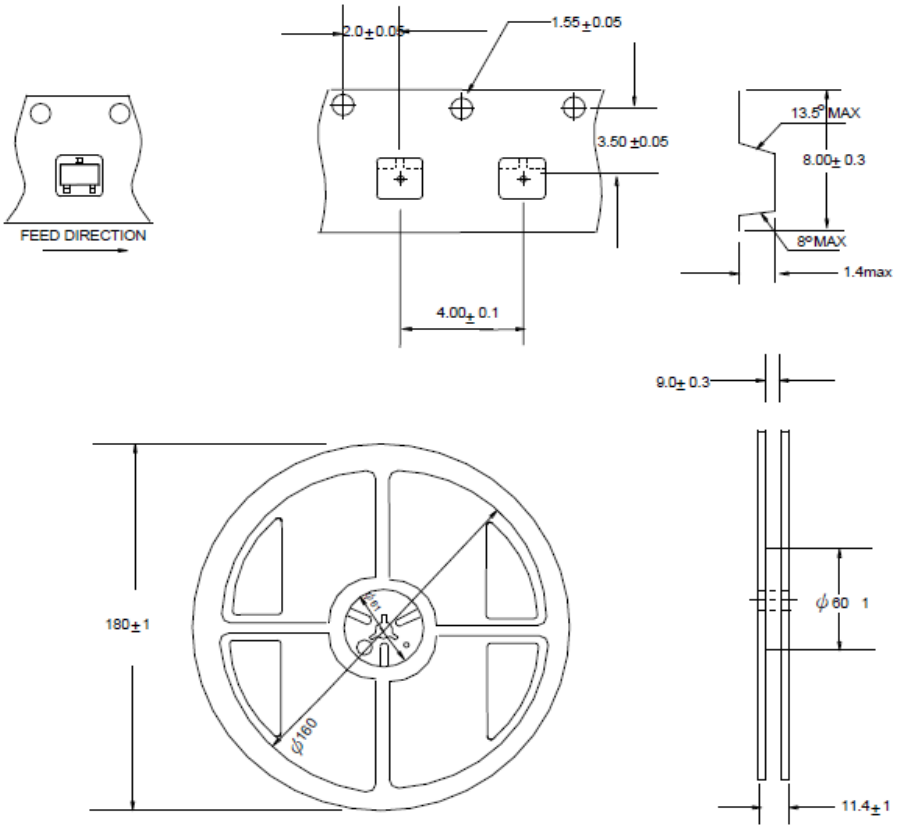
A. Marking Information（产品代码为：90）



B. Tape&Reel Information:3000pcs/Reel



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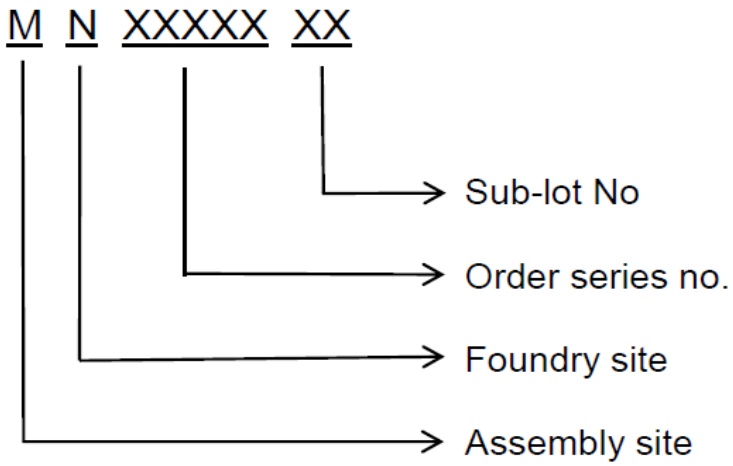
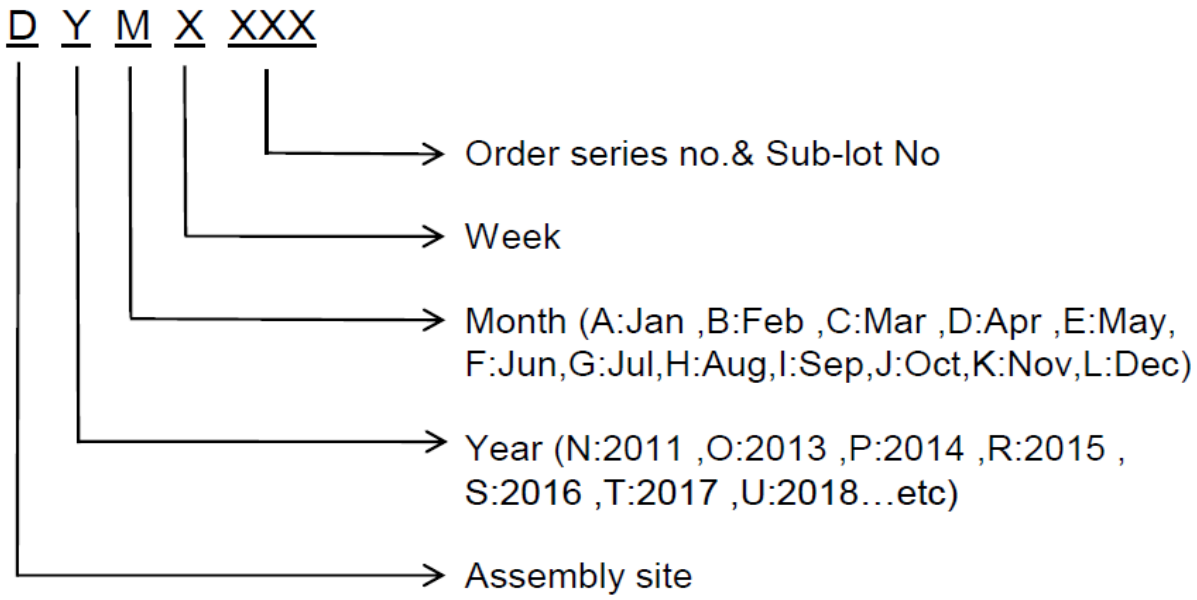
C. Lot No.&Date Code rule

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	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