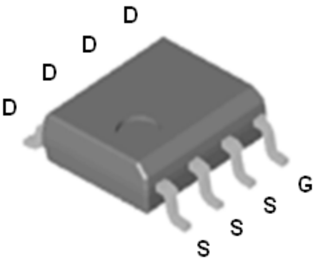
UNIKC
Semiconductor

P1210BVA

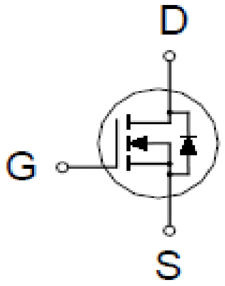
N-Channel Enhancement Mode MOSFET

PRODUCT SUMMARY

$V_{(BR)DSS}$	$R_{DS(ON)}$	I_D
100V	12mΩ @V_{GS} = 10V	8.7A



SOP-8



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

PARAMETERS/TEST CONDITIONS		SYMBOL	LIMITS	UNITS
Drain-Source Voltage		V_{DS}	100	V
Gate-Source Voltage		V_{GS}	±20	V
Continuous Drain Current	T_A = 25 °C	I_D	8.7	A
	T_A = 70 °C		6.9	
Pulsed Drain Current[1]		I_{DM}	32	
Avalanche Current		I_{AS}	15	
Avalanche Energy	L = 1mH	E_{AS}	112	mJ
Power Dissipation	T_A= 25 °C	P_D	2	W
	T_A =70 °C		1.3	
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]	$R_{\theta JA}$		62	°C / W
Junction-to-Case	$R_{\theta JC}$		25	

[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, in a still air environment with T_A =25° C.

P1210BVA

N-Channel Enhancement Mode MOSFET

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

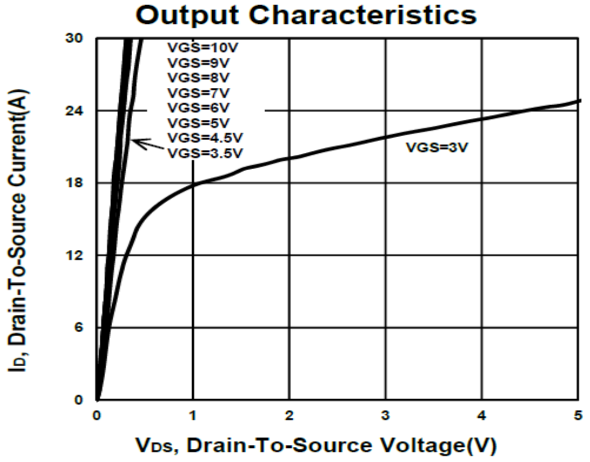
PARAMETER	SYMBOL	TEST CONDITIONS	LIMITS			UNITS
			MIN	TYP	MAX	
STATIC						
Drain-Source Breakdown Voltage	$V_{(BR)DSS}$	$V_{GS} = 0V$, $I_D = 250\mu A$	100			V
Gate Threshold Voltage	$V_{GS(th)}$	$V_{DS} = V_{GS}$, $I_D = 250\mu A$	1.4	1.8	2.4	
Gate-Body Leakage	I_{GSS}	$V_{DS} = 0V$, $V_{GS} = \pm 20V$			±100	nA
Zero Gate Voltage Drain Current	I_{DSS}	$V_{DS} = 80V$, $V_{GS} = 0V$			0.1	μA
		$V_{DS} = 80V$, $V_{GS} = 0V$, $T_J = 125$ °C			1	
Drain-Source On-State Resistance[1]	$R_{DS(ON)}$	$V_{GS} = 4.5V$, $I_D = 8A$		11.4	15	mΩ
		$V_{GS} = 10V$, $I_D = 8A$		9.7	12	
Forward Transconductance[1]	g_{fs}	$V_{DS} = 5V$, $I_D = 8A$		25		S
DYNAMIC						
Input Capacitance	C_{iss}	$V_{GS} = 0V$, $V_{DS} = 50V$, f = 1MHz		2108		pF
Output Capacitance	C_{oss}			205		
Reverse Transfer Capacitance	C_{rss}			10		
Gate Resistance	R_g	$V_{GS} = 0V$, $V_{DS} = 0V$, f = 1MHz		2		Ω
Total Gate Charge[2]	Q_g	$V_{DS} = 50V$, $V_{GS} = 10V$, $I_D = 8A$		37		nC
Gate-Source Charge[2]	Q_{gs}			6.1		
Gate-Drain Charge[2]	Q_{gd}			7.4		
Turn-On Delay Time[2]	$t_{d(on)}$	$V_{DS} = 50V$, $I_D \cong 8A$, $V_{GS} = 10V$, $R_{GEN} = 6\Omega$		7		nS
Rise Time[2]	t_r			3		
Turn-Off Delay Time[2]	$t_{d(off)}$			23		
Fall Time[2]	t_f			4		
SOURCE-DRAIN DIODE RATINGS AND CHARACTERISTICS (T_J = 25 °C)						
Continuous Current	I_S				1.6	A
Forward Voltage[1]	V_{SD}	$I_F = 8A$, $V_{GS} = 0V$			1.2	V
Diode Reverse Recovery Time	t_{rr}	$I_F = 8A$, dI/dt = 100A /μS		55		nS
Diode Reverse Recovery Charge	Q_{rr}			70		nC

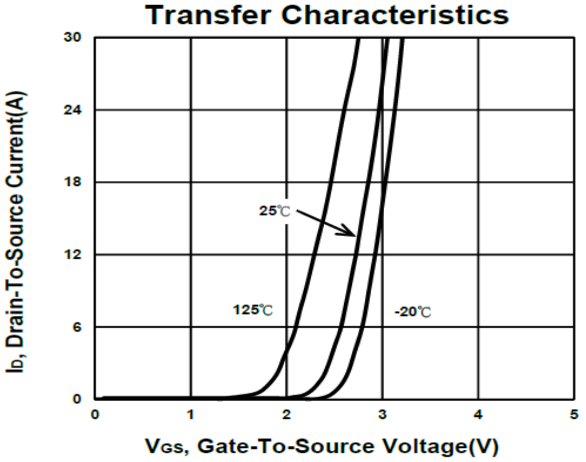
[1] Pulse test : Pulse Width ≤ 300 μsec, Duty Cycle ≤ 2%.

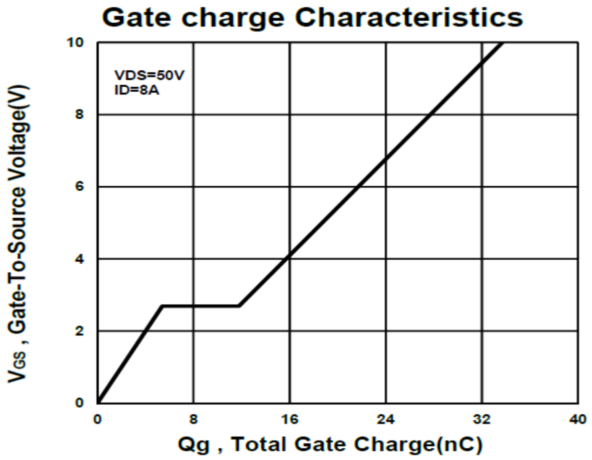
[2] Independent of operating temperature.

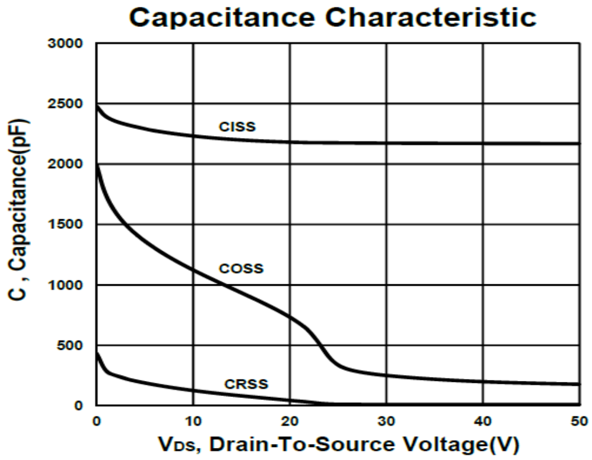
P1210BVA

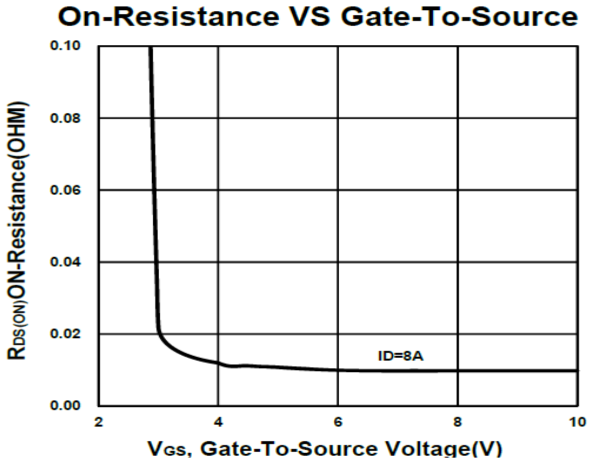
N-Channel Enhancement Mode MOSFET

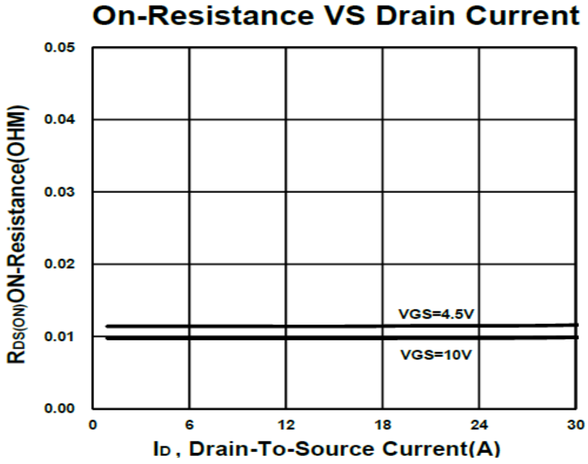

Output Characteristics


Transfer Characteristics


Gate charge Characteristics


Capacitance Characteristic

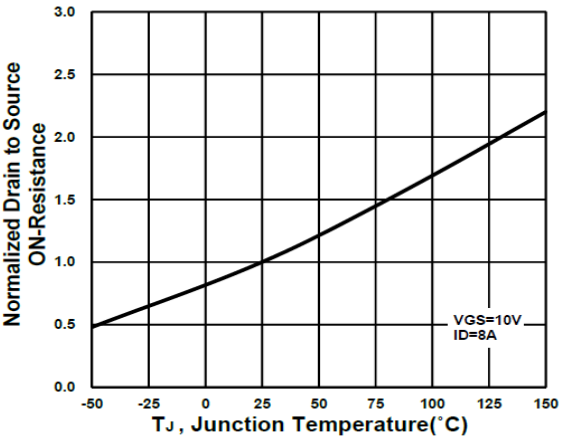

On-Resistance VS Gate-To-Source


On-Resistance VS Drain Current

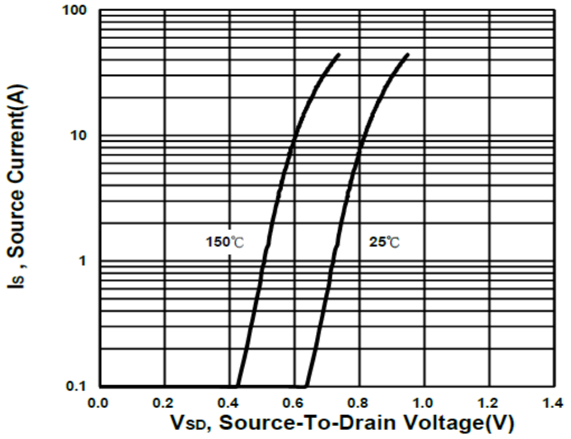
P1210BVA

N-Channel Enhancement Mode MOSFET

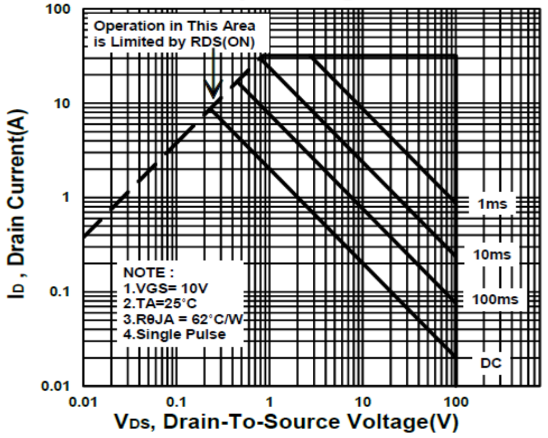
On-Resistance VS Temperature



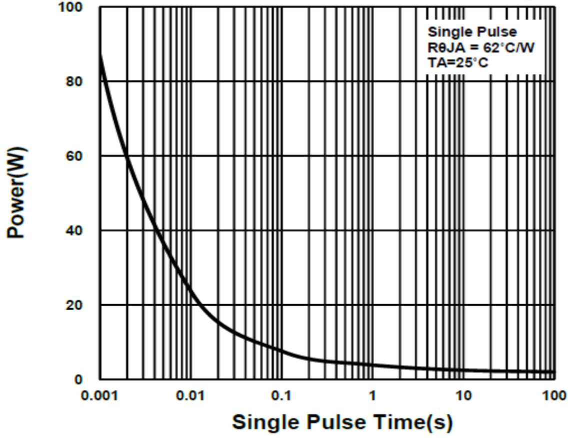
Source-Drain Diode Forward Voltage



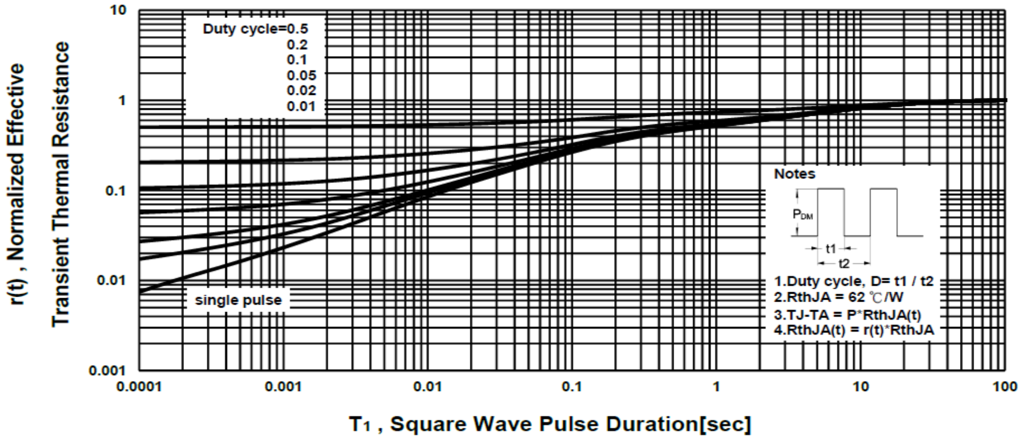
Safe Operating Area



Single Pulse Maximum Power Dissipation



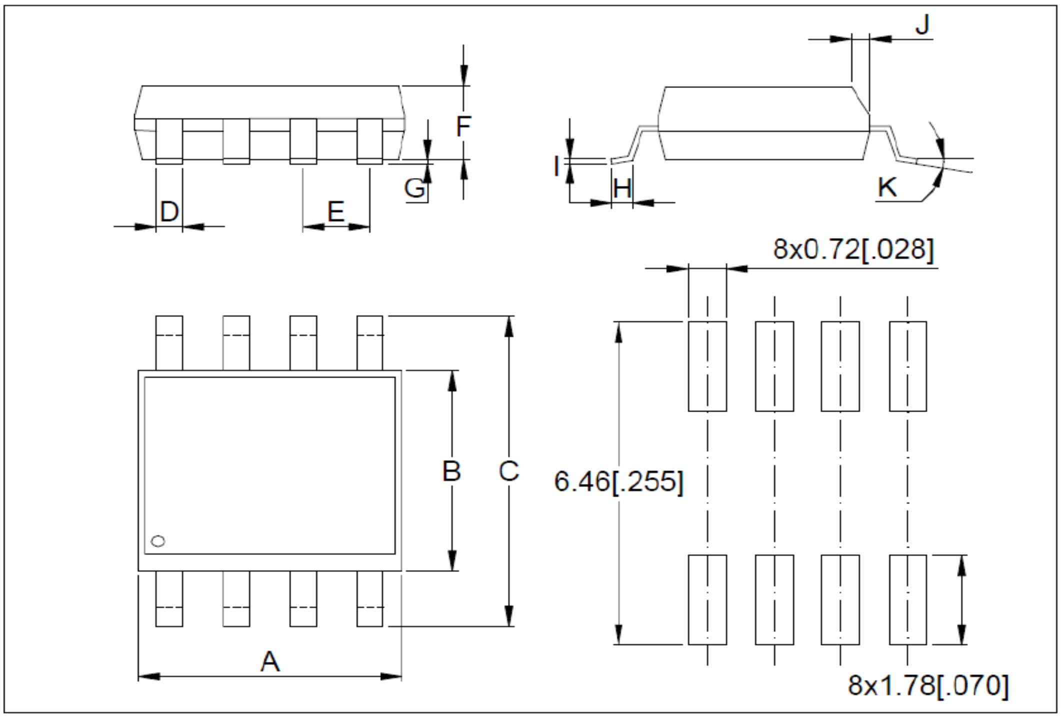
Transient Thermal Response Curve



Package Dimension

SOP-8 MECHANICAL DATA

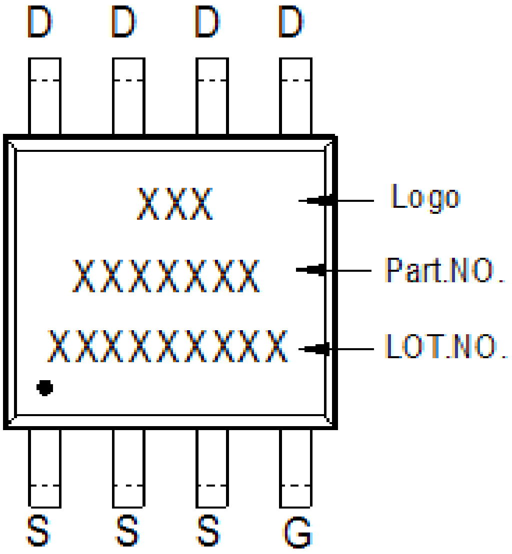
Dimension	mm			Dimension	mm		
	Min.	Typ.	Max.		Min.	Typ.	Max.
A	4.8	4.9	5.0	H	0.4	0.6	0.93
B	3.8	3.9	4.0	I	0.19	0.21	0.25
C	5.79	6.0	6.2	J	0.25	0.375	0.5
D	0.33	0.4	0.51	K	0°	3°	18°
E	1.25	1.27	1.29				
F	1.1	1.3	1.65				
G	0.05	0.15	0.25				



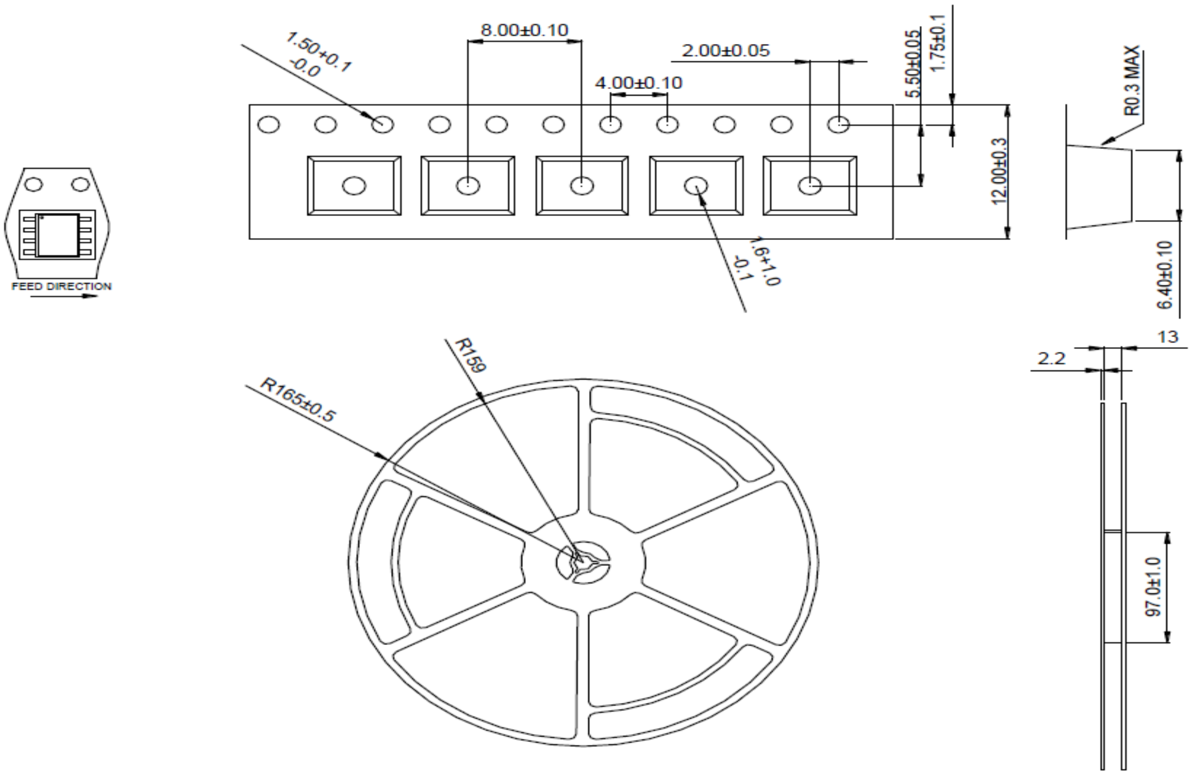
P1210BVA

N-Channel Enhancement Mode MOSFET

A. Marking Information

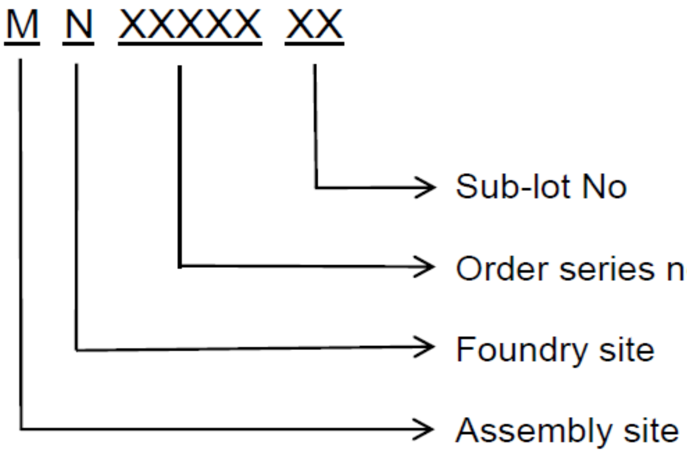


B. Tape&Reel Information:2500pcs/Reel



C. Lot No.&Date Code rule

1.Lot No.



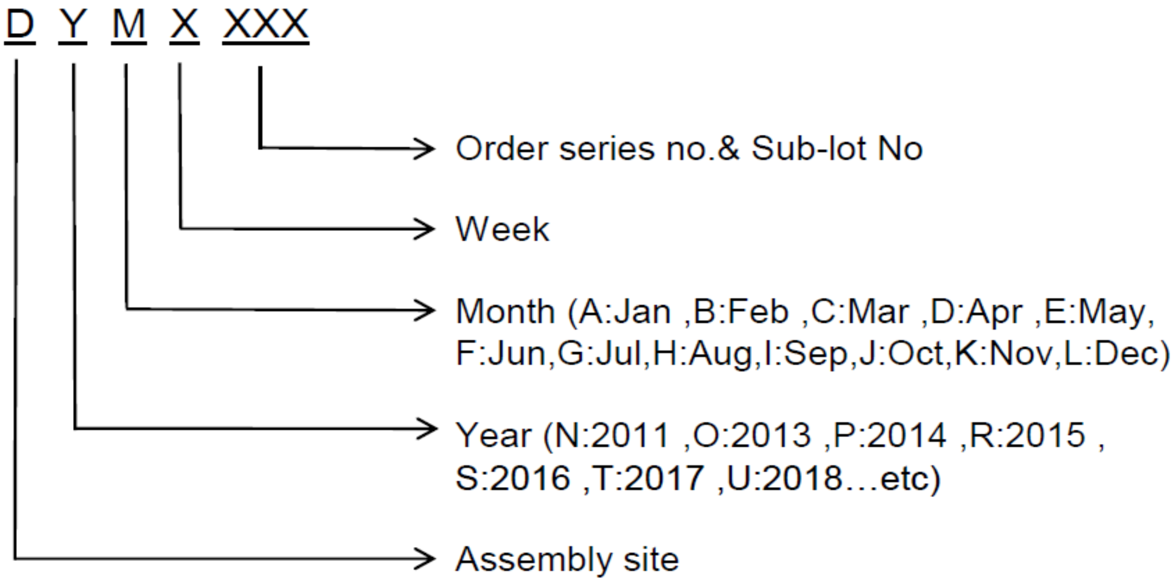
Sub-lot No

Order series no.

Foundry site

Assembly site

2.Date Code



Order series no.& Sub-lot No

Week

Month (A:Jan ,B:Feb ,C:Mar ,D:Apr ,E:May, F:Jun,G:Jul,H:Aug,I:Sep,J:Oct,K:Nov,L:Dec)

Year (N:2011 ,O:2013 ,P:2014 ,R:2015 , S:2016 ,T:2017 ,U:2018…etc)

Assembly site

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