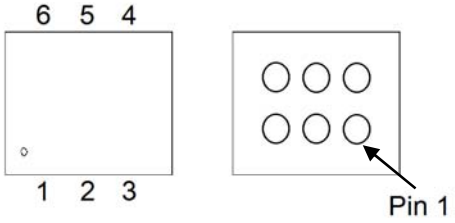
NIKO-SEM

Common Drain N-Channel Power MOSFET

PQ5K8JN
WLCSP
Halogen-Free & Lead-Free

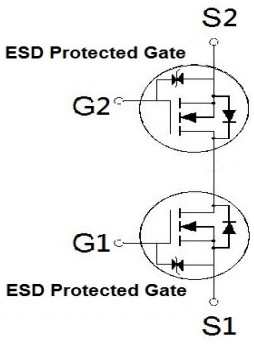
PRODUCT SUMMARY

$V_{(BR)SSS}$	$R_{SS(ON)}$	I_S
24V	6.3mΩ	13A



Top view Bottom view

1. Source1
2. Gate1
3. Source1
4. Source2
5. Gate2
6. Source2



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

PARAMETERS/TEST CONDITIONS	SYMBOL	LIMITS	UNITS
Source-Source Voltage	V_{SSS}	24	V
Gate-Source Voltage	V_{GSS}	±12	V
Continuous Source Current	I_S	13	A
Pulsed Source Current[1]	I_{SP}	60	
Total Dissipation[2]	P_T	1.7	W
Thermal Resistance[2]	$R_{\theta JA}$	73	°C / W
Operating Junction & Storage Temperature Range	T_j, T_{stg}	-55 to 150	°C

[1]PW≤10μs, duty cycle≤1%.
[2]When mounted on 1in^2 FR-4 board.

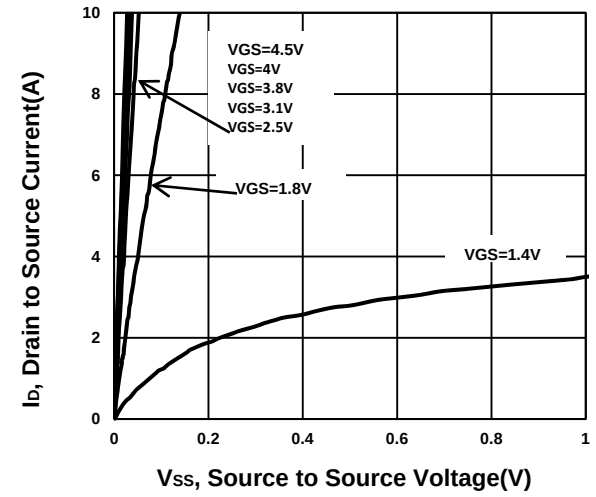
ELECTRICAL CHARACTERISTICS (T_J = 25 °C, Unless Otherwise Noted)

PARAMETER	SYMBOL	TEST CONDITIONS	LIMITS			UNIT
			MIN	TYP	MAX	
STATIC						
Source-Source Breakdown Voltage	$V_{(BR)SSS}$	V_{GS} = 0V, I_S = 1mA	24			V
Gate Threshold Voltage	$V_{GS(th)}$	V_{SS} = 10V , I_S = 1mA	0.6	0.95	1.3	
Gate-Source Leakage	I_{GSS}	V_{SS} = 0V, V_{GS} = ±12V			±30	μA
Zero Gate Voltage Source Current	I_{SSS}	V_{SS} = 20V, V_{GS} = 0V			1	μA
Source-Source On-State Resistance[1]	$R_{SS(ON)}$	V_{GS} = 4.5V, I_S = 3A	2.5	3.4	6.3	mΩ
		V_{GS} = 4V, I_S = 3A	2.6	3.5	6.7	
		V_{GS} = 3.8V, I_S = 3A	2.7	3.7	6.9	
		V_{GS} = 3.1V, I_S = 3A	3.3	4.6	8.6	
		V_{GS} = 2.5V, I_S = 3A	3.9	5.5	11.4	

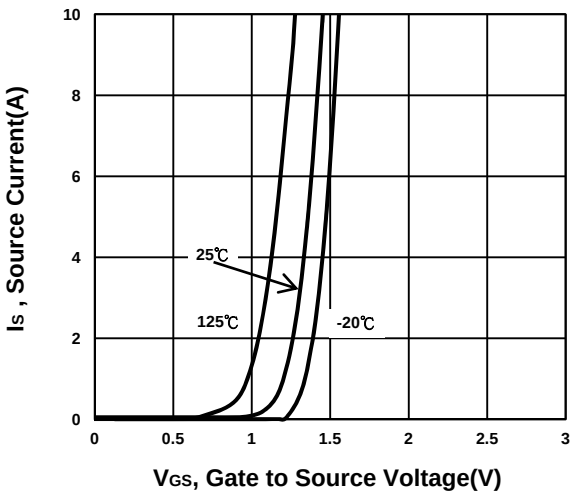
Forward Transfer Admittance[1]	$\lvert y_{fs} \rvert$	V_{SS} = 5V, I_S = 3A		30		S
DYNAMIC						
Input Capacitance	C_{iss}	V_{GS} = 0V, V_{DS} = 12V, f = 1MHz		2287		pF
Output Capacitance	C_{oss}			306		
Reverse Transfer Capacitance	C_{rss}			235		
Total Gate Chang[2]	Qg	V_{SS} = 12V , V_{GS} = 4.5V I_S = 5A		24		nC
Turn-On Delay Time[2]	$t_{d(on)}$	V_{SS} = 12V, $I_S \cong$ 5A, V_{GS} = 4.5V		39		nS
Rise Time[2]	t_r			62		
Turn-Off Delay Time[2]	$t_{d(off)}$			68		
Fall Time[2]	t_f			41		
SOURCE-DRAIN DIODE RATINGS AND CHARACTERISTICS (T_J = 25 °C)						
Forward Source-Source Voltage[1]	V_F	I_S = 5A, V_{GS} = 0V		0.6	1.2	V

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

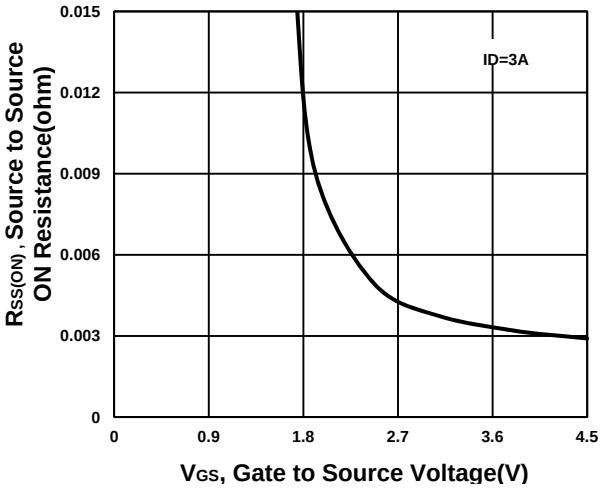
I_D -- V_{SS}



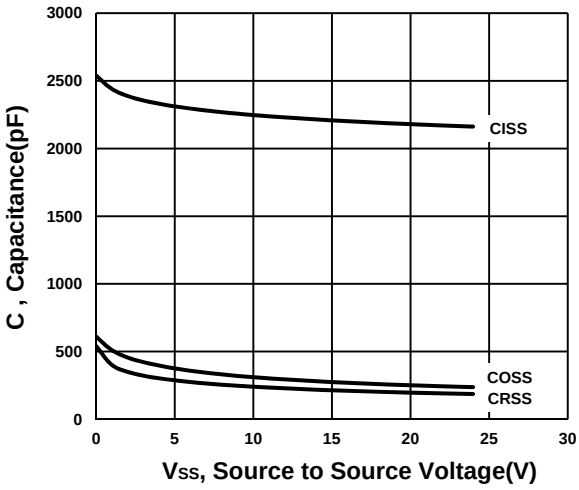
I_S -- V_{GS}



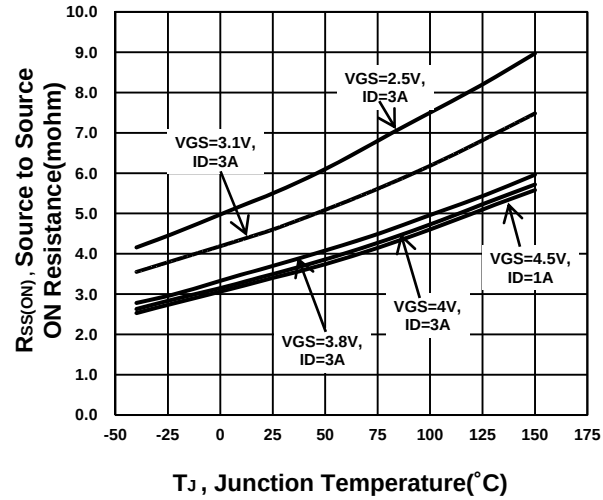
$R_{SS(ON)}$ -- V_{GS}



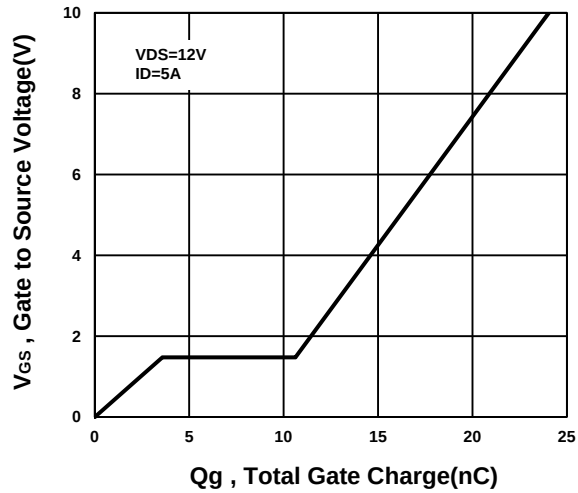
Capacitance Characteristic



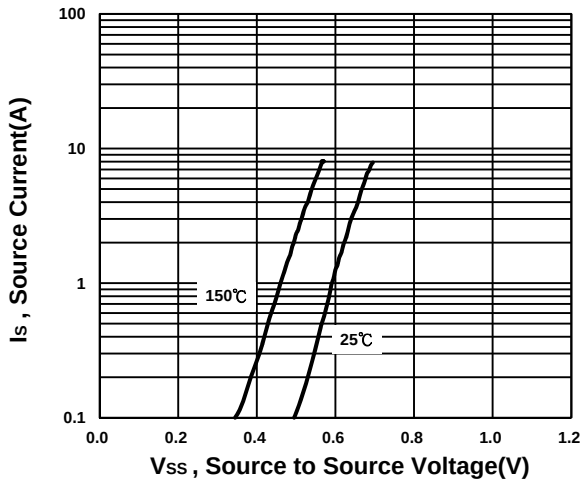
$R_{SS(ON)}$ -- Ta



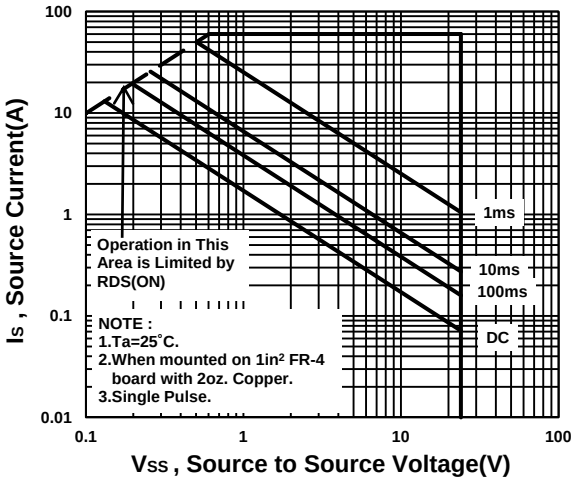
Gate charge Characteristics



I_S -- V_F



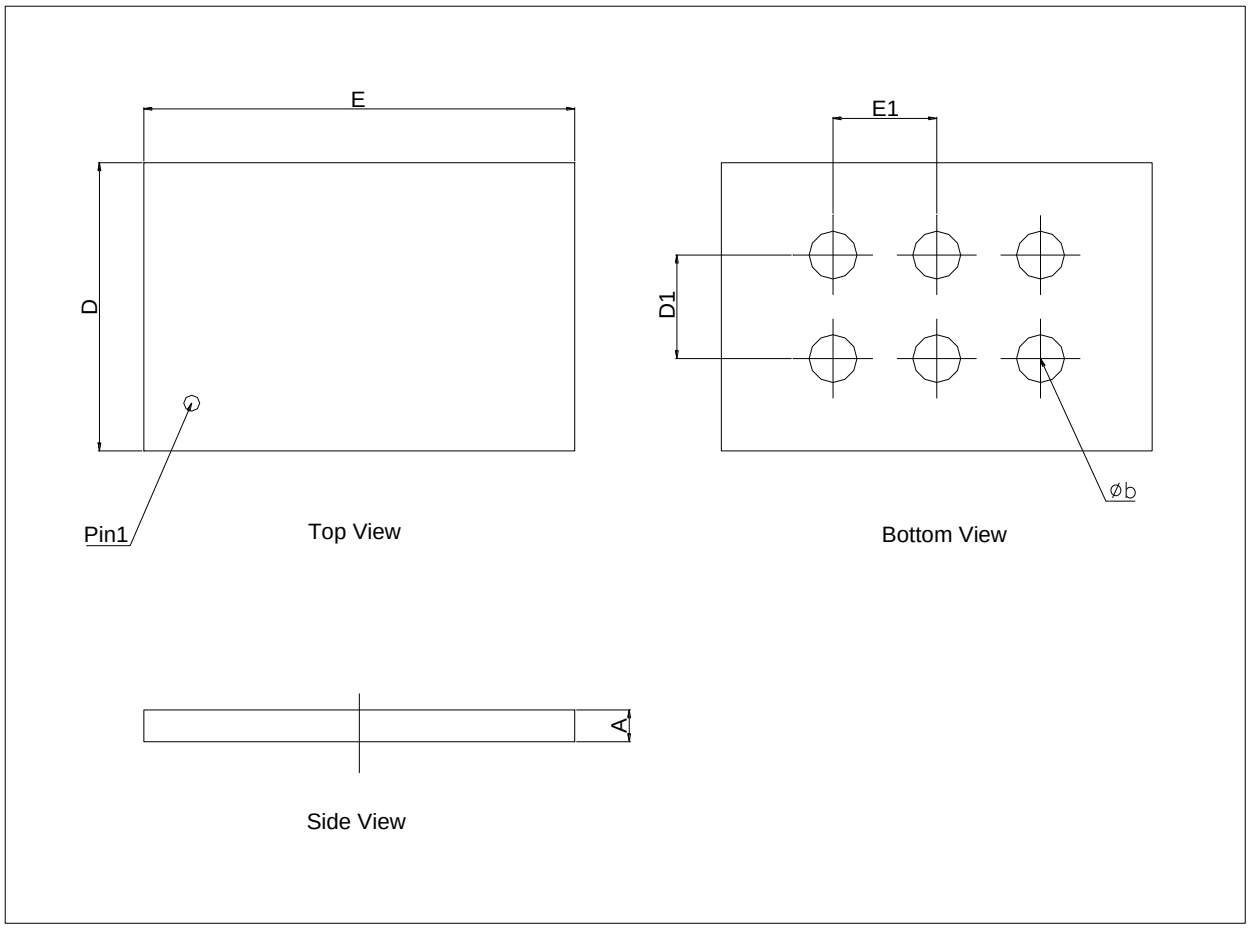
Safe Operating Area



Package Dimension

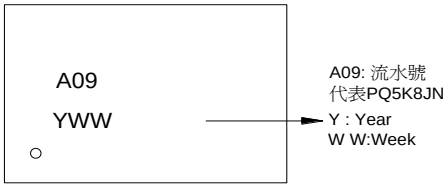
WLCSP(1.81*2.7) MECHANICAL DATA

Dimension	mm			Dimension	mm		
	Min.	Typ.	Max.		Min.	Typ.	Max.
A	0.18		0.22	E		2.7	
φ b		0.26		E1		0.65	
D		1.81					
D1		0.65					

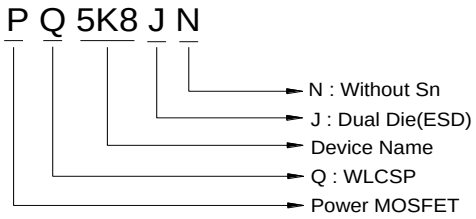


A. Marking Information:(Please see the corresponding data sheet)

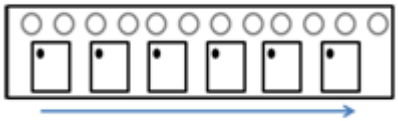
1.零件Marking 文字面說明

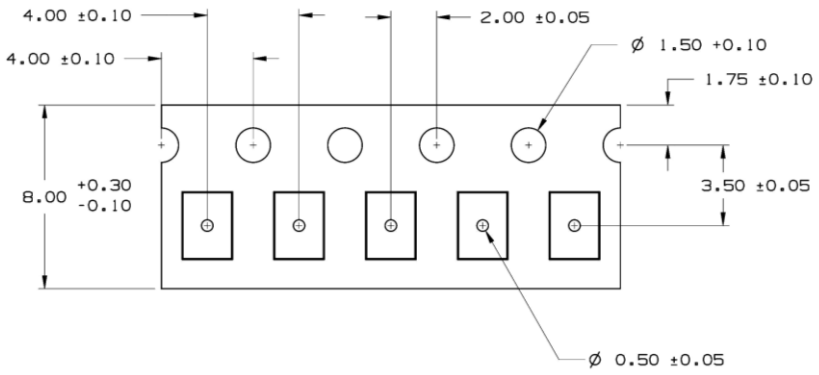


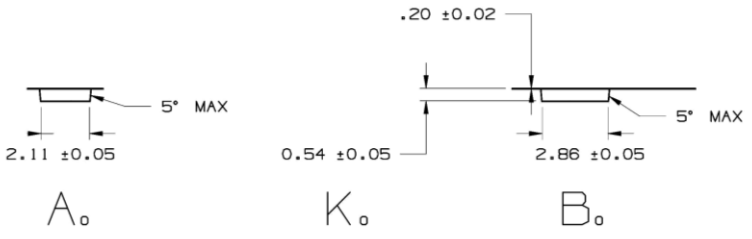
2.零件 Part number 說明

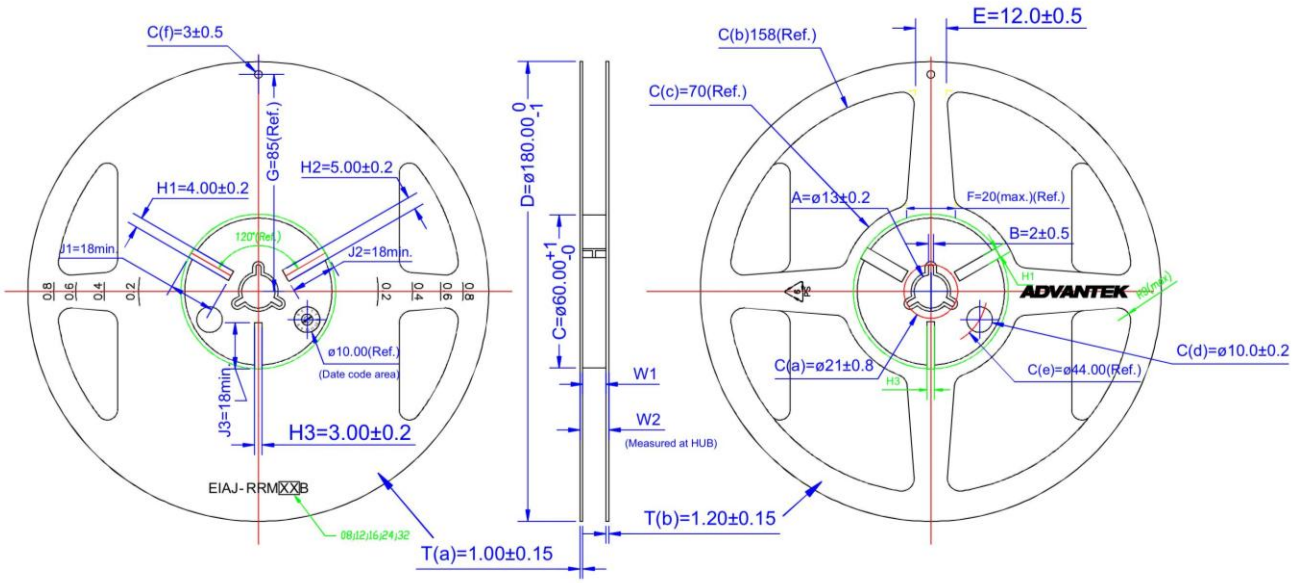


B. Tape&Reel Information: 5000pcs/Reel





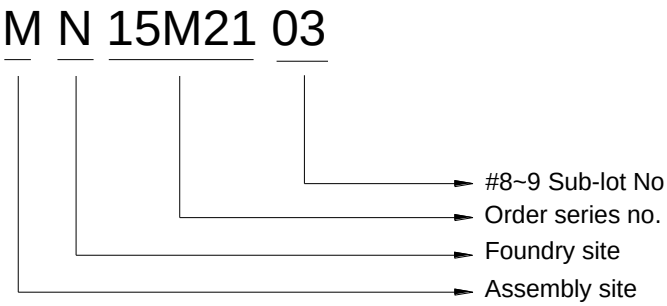




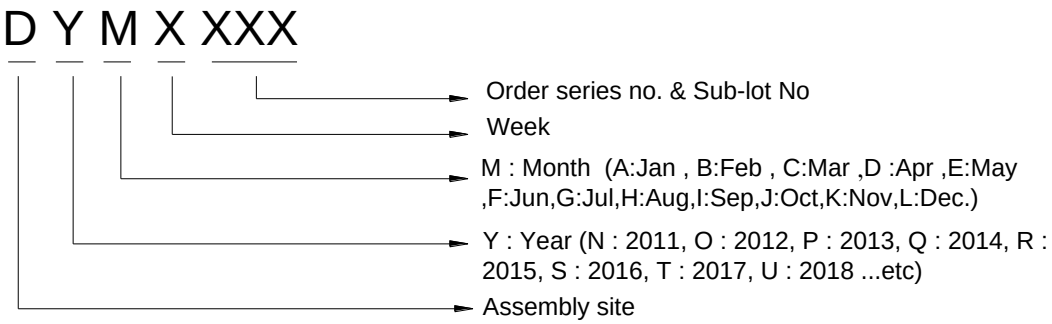
附註:All Dimension in millimeter

C. Lot.No. & Date Code rule

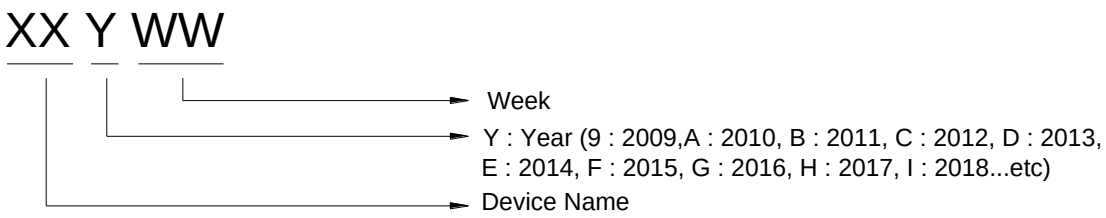
1.LOT.NO.



2.Date Code

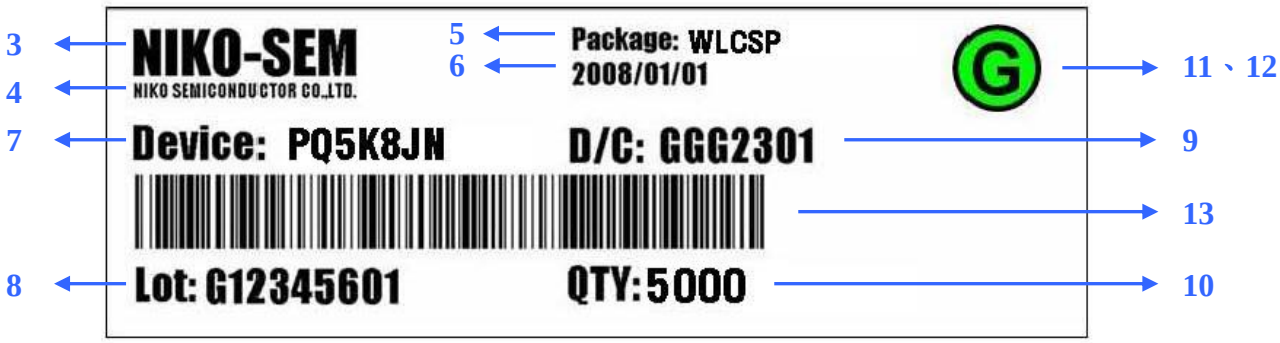


3.Date Code (for Small package)



D. Label rule

標籤內容 (Label content)



1	Label Size	30 * 90 mm
2	Font style	Times New Roman or Arial (或可區分英文"O"和數字"0"，"G 和"Q"的字型即可) (Or any font capable of being distinguished for Letter O and digital 0, and for G and Q))
3	NIKO-SEM	Height: 4 mm
4	NIKO SEMICONDUCTOR CO., LTD.	Height: 1 mm
5	Package	Height: 2 mm
6	Date	Height: 2 mm Shipping date: YYYY/MM/DD, ex. 2008/09/12
7	Device	Height: 3 mm (Max: 16 Digit) Device Name not including Rev.
8	Lot	Height: 3 mm (Max: 9 Digit) Sub lot
9	D/C	Height: 3 mm (Max: 7 Digit)
10	QTY	Height: 3 mm (Max: 6 Digit) Thousand mark is no needed
11	Pb Free label	Diameter: 1 cm bottom color: Green Font color: Black Font style: Arial
12	Halogen Free label	Diameter: 1 cm bottom color: Green Font color: Black Font style: Arial
13	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