UNIKC Semiconductor

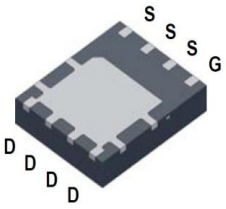
RoHS Compliant

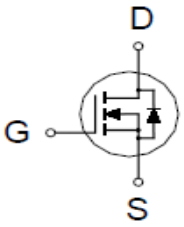
PK608BA

N-Channel Enhancement Mode MOSFET

PRODUCT SUMMARY

$V_{(BR)DSS}$	$R_{DS(ON)}$	I_D
40V	3.5mΩ @V_{GS} = 10V	87A





PDFN 5X6P

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

PARAMETERS/TEST CONDITIONS		SYMBOL	LIMITS	UNITS
Drain-Source Voltage		V_{DS}	40	V
Gate-Source Voltage		V_{GS}	±20	V
Continuous Drain Current[2]	T_c = 25 °C	I_D	87	A
	T_c = 100 °C		55	
Pulsed Drain Current[1]		I_{DM}	150	
Continuous Drain Current	T_A = 25 °C	I_D	20	
	T_A= 70 °C		15.6	
Avalanche Current		I_{AS}	49	
Avalanche Energy	L =0.1mH	E_{AS}	120	mJ
Power Dissipation	T_C = 25 °C	P_D	50	W
	T_C = 100 °C		20	
Power Dissipation	T_A = 25 °C	P_D	2.4	W
	T_A = 70 °C		1.5	
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]	$R_{\theta JA}$		50.2	°C / W
Junction-to-Case	$R_{\theta JC}$		2.5	

[1]Pulse width limited by maximum junction temperature.

[2]Package limitation current is 51A.

[3]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.

UNIKC Semiconductor

RoHS Compliant

PK608BA

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 = 250μA	40			V
Gate Threshold Voltage	$V_{GS(th)}$	V_{DS} = V_{GS}, I_D = 250μA	1.3	1.75	2.3	
Gate-Body Leakage	I_{GSS}	V_{DS} = 0V, V_{GS} = ±20V			±100	nA
Zero Gate Voltage Drain Current	I_{DSS}	V_{DS} = 40V, V_{GS} = 0V			1	μA
		V_{DS} = 32V, V_{GS} = 0V, T_J = 55 °C			10	
Drain-Source On-State Resistance[1]	$R_{DS(ON)}$	V_{GS} = 4.5V, I_D = 15A		3	4.6	mΩ
		V_{GS} = 10V , I_D = 20A		2.6	3.5	
Forward Transconductance[1]	g_{fs}	V_{DS} = 5V, I_D = 20A		136		S
DYNAMIC						
Input Capacitance	C_{iss}	V_{GS} = 0V, V_{DS} = 20V, f = 1MHz		3884		pF
Output Capacitance	C_{oss}			441		
Reverse Transfer Capacitance	C_{rss}			329		
Gate Resistance	R_g	V_{GS} = 0V, V_{DS} = 0V, f = 1MHz		1.1		Ω
Total Gate Charge[2]	Q_g V_{GS} =10V	V_{DS} = 20V, V_{GS} = 10V, I_D = 20A		77		nC
	Q_g V_{GS} =4.5V			40		
Gate-Source Charge[2]	Q_{gs}			11		
Gate-Drain Charge[2]	Q_{gd}			19		
Turn-On Delay Time[2]	$t_{d(on)}$	V_{DS} = 20V, I_D ≅ 20A, V_{GS} = 10V, R_{GEN} = 6Ω		25		nS
Rise Time[2]	t_r			18		
Turn-Off Delay Time[2]	$t_{d(off)}$			65		
Fall Time[2]	t_f			18		
SOURCE-DRAIN DIODE RATINGS AND CHARACTERISTICS (T_J = 25 °C)						
Continuous Current	I_S				38	A
Forward Voltage[1]	V_{SD}	I_F = 20A, V_{GS} = 0V			1.3	V
Reverse Recovery Time	t_{rr}	I_F = 20A, dI_F/dt = 100A / μS		25		nS
Reverse Recovery Charge	Q_{rr}			19		nC

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

[2]Independent of operating temperature.

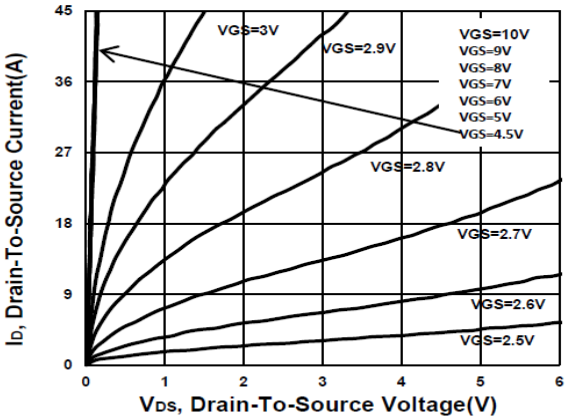
UNIKC Semiconductor

RoHS Compliant

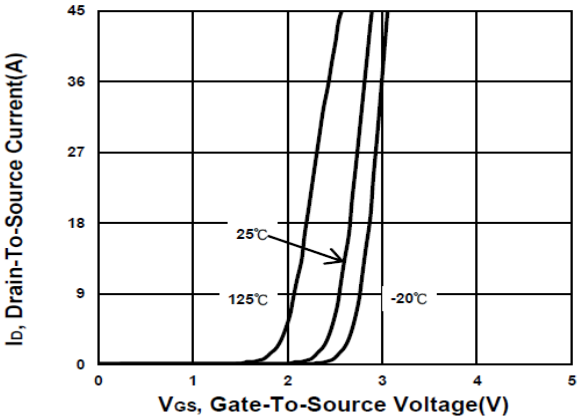
PK608BA

N-Channel Enhancement Mode MOSFET

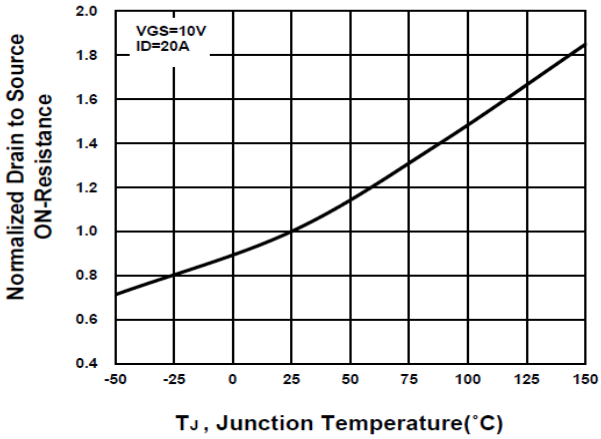
Output Characteristics



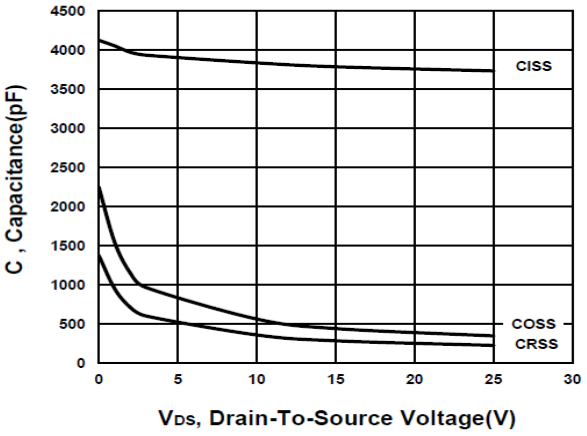
Transfer Characteristics



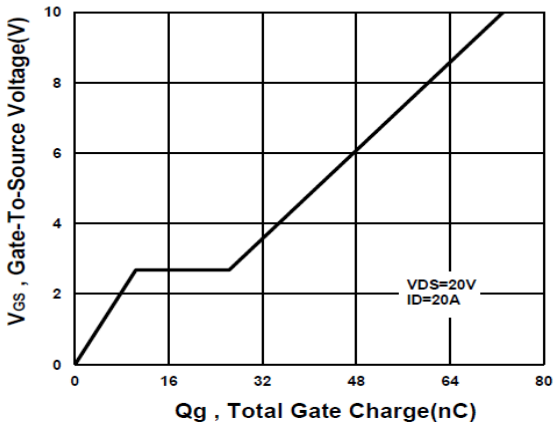
On-Resistance VS Temperature



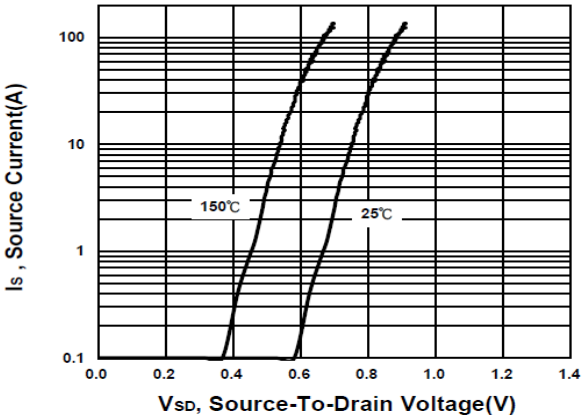
Capacitance Characteristic



Gate charge Characteristics



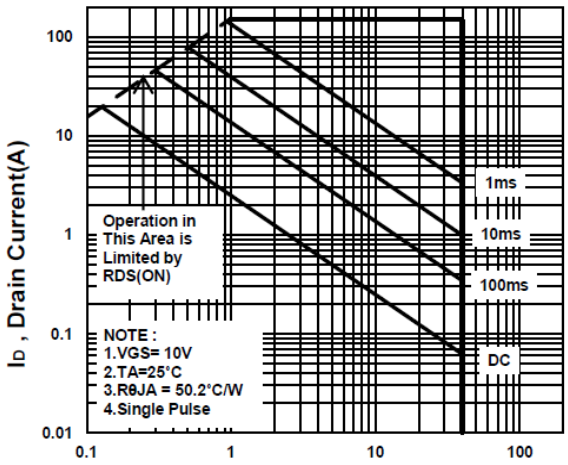
Source-Drain Diode Forward Voltage



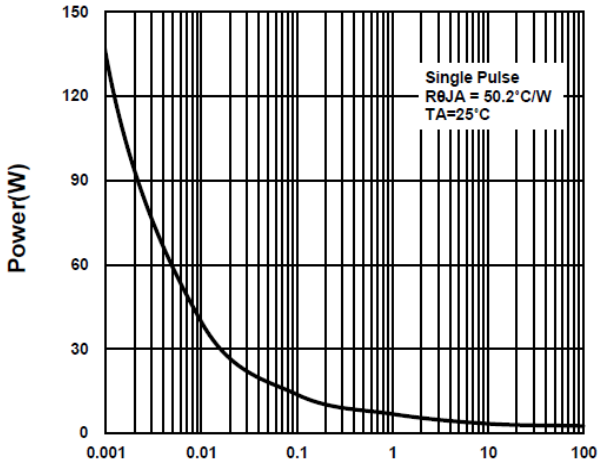
PK608BA

N-Channel Enhancement Mode MOSFET

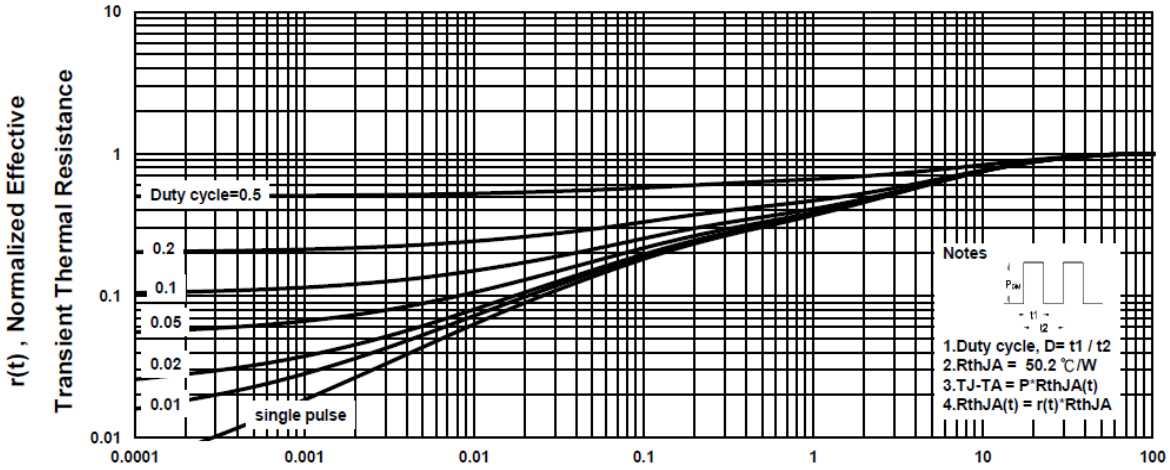
Safe Operating Area



Single Pulse Maximum Power Dissipation



Transient Thermal Response Curve

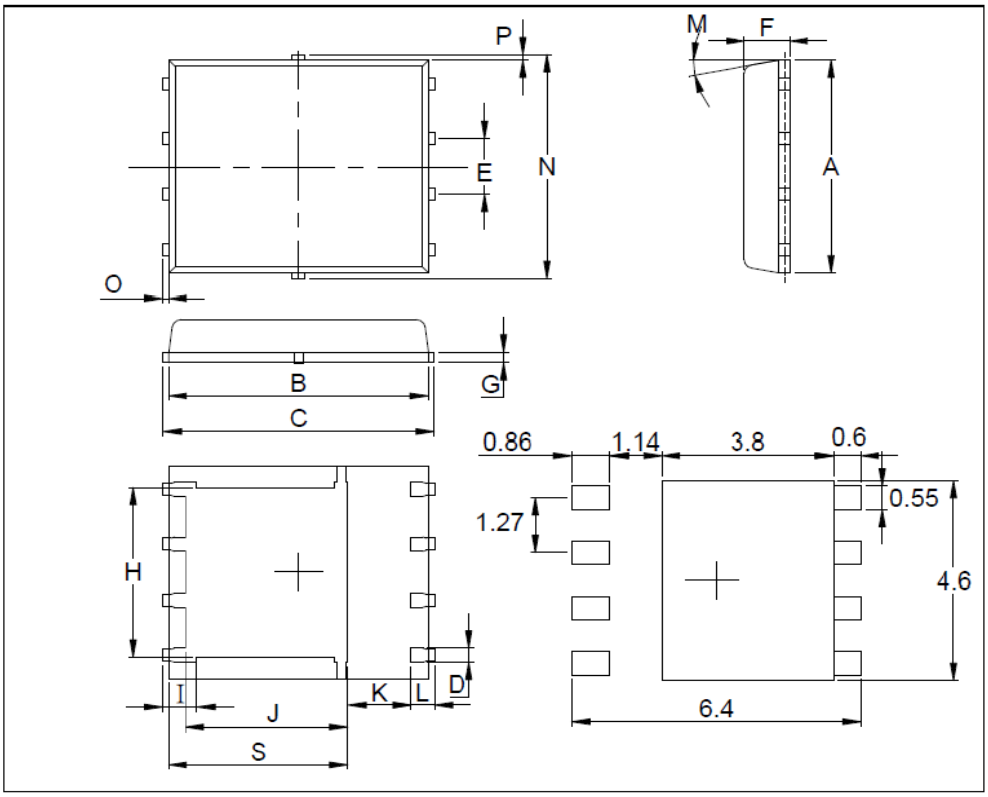


PK608BA

N-Channel Enhancement Mode MOSFET

PDFN 5x6P MECHANICAL DATA

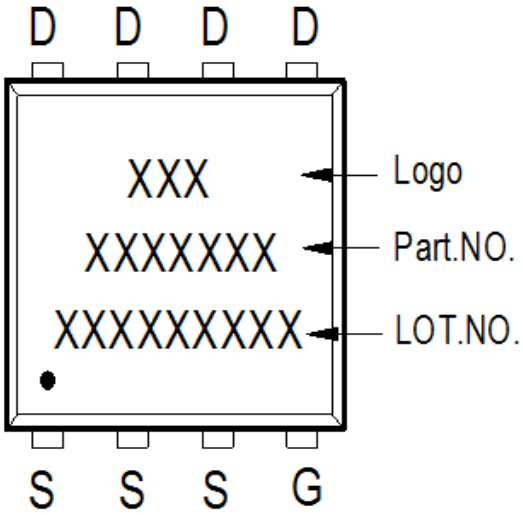
Dimension	mm			Dimension	mm		
	Min.	Typ.	Max.		Min.	Typ.	Max.
A	4.8		5.15	J	3.33		3.78
B	5.44		5.9	K	0.9		
C	5.9		6.35	L	0.35		0.712
D	0.33		0.51	M	0°		12°
E		1.27		N	4.8		5.5
F	0.8		1.25	O	0.05		0.3
G	0.15		0.34	P	0.06		0.2
H	3.61		4.31	S	3.69		4.19
I	0.35		0.71				



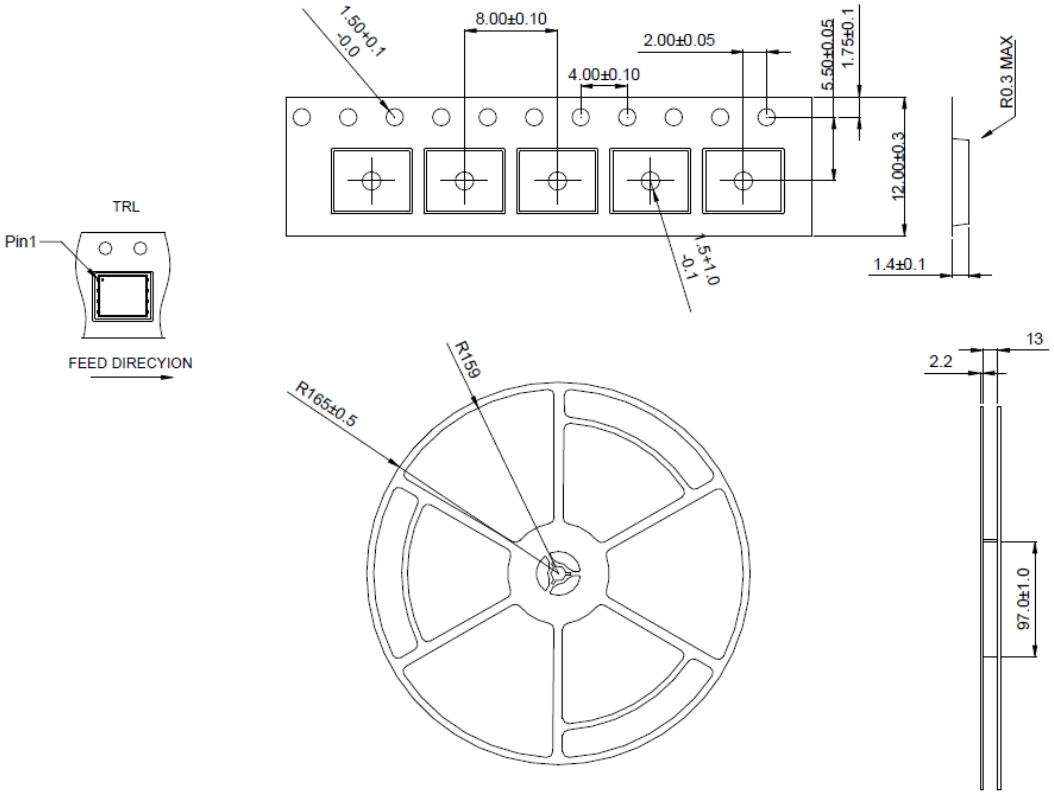
PK608BA

N-Channel Enhancement Mode MOSFET

A. Marking Information



B. Tape&Reel Information:3000pcs/Reel



UNIKC Semiconductor

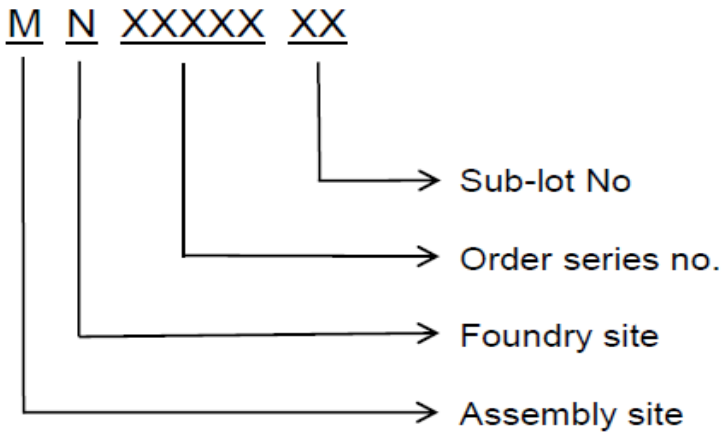
RoHS Compliant

PK608BA

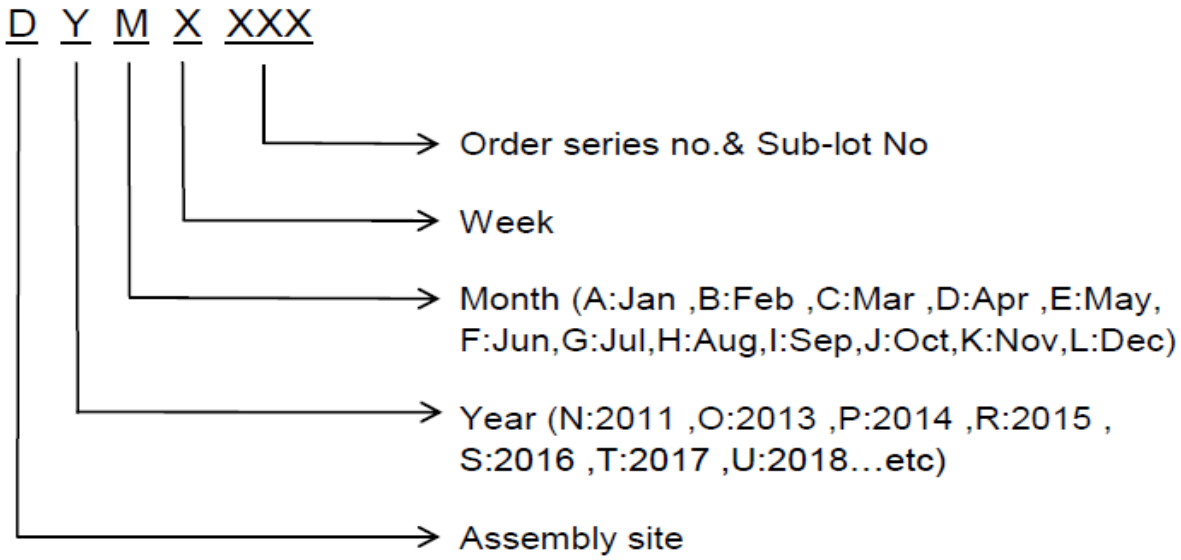
N-Channel Enhancement Mode MOSFET

C. Lot No.&Date Code rule

1.Lot No.



2.Date Code



UNIKC Semiconductor

RoHS Compliant

PK608BA

N-Channel Enhancement Mode MOSFET

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