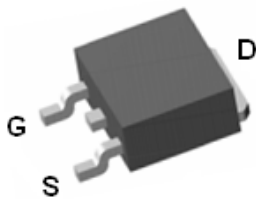


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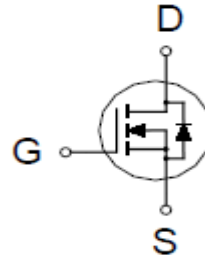
N-Channel Enhancement Mode MOSFET

PRODUCT SUMMARY

$V_{(BR)DSS}$	$R_{DS(ON)}$	I_D
60V	10m Ω @ $V_{GS} = 10V$	66A



TO-252



ABSOLUTE MAXIMUM RATINGS ($T_A = 25\text{ }^\circ\text{C}$ Unless Otherwise Noted)

PARAMETERS/TEST CONDITIONS		SYMBOL	LIMITS	UNITS
Drain-Source Voltage		V_{DS}	60	V
Gate-Source Voltage		V_{GS}	± 20	V
Continuous Drain Current ²	$T_C = 25\text{ }^\circ\text{C}$	I_D	66	A
	$T_C = 100\text{ }^\circ\text{C}$		42	
Pulsed Drain Current ¹		I_{DM}	150	
Avalanche Current		I_{AS}	38.5	
Avalanche Energy	$L = 0.1\text{mH}$	E_{AS}	74	mJ
Power Dissipation	$T_C = 25\text{ }^\circ\text{C}$	P_D	96	W
	$T_C = 100\text{ }^\circ\text{C}$		38	
Junction & Storage Temperature Range		T_j, T_{stg}	-55 to 150	$^\circ\text{C}$

THERMAL RESISTANCE RATINGS

THERMAL RESISTANCE	SYMBOL	TYPICAL	MAXIMUM	UNITS
Junction-to-Ambient	$R_{\theta JA}$		62.5	$^\circ\text{C} / \text{W}$
Junction-to-Case	$R_{\theta JC}$		1.3	

¹ Pulse width limited by maximum junction temperature.

² Package limitation current is 30A.

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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	60			V
Gate Threshold Voltage	V _{GS(th)}	V _{DS} = V _{GS} , I _D = 250μA	1.3	1.8	2.3	V
Gate-Body Leakage	I _{GSS}	V _{DS} = 0V, V _{GS} = ±20V			±100	nA
Zero Gate Voltage Drain Current	I _{DSS}	V _{DS} = 48V, V _{GS} = 0V			1	μA
		V _{DS} = 40V, V _{GS} = 0V, T _J = 125 °C			10	
Drain-Source On-State Resistance ¹	R _{DS(ON)}	V _{GS} = 4.5V, I _D = 20A		8.1	13	mΩ
		V _{GS} = 10V, I _D = 20A		6.8	10	
Forward Transconductance ¹	g _{fs}	V _{DS} = 10V, I _D = 20A		60		S
DYNAMIC						
Input Capacitance	C _{ISS}	V _{GS} = 0V, V _{DS} = 25V, f = 1MHz		1920		pF
Output Capacitance	C _{OSS}			215		
Reverse Transfer Capacitance	C _{RSS}			140		
Gate Resistance	R _g	V _{GS} = 0V, V _{DS} = 0V, f = 1MHz		0.7		Ω
Total Gate Charge ²	Q _g (V _{GS} =10V)	V _{DS} = 30V, I _D = 20A		42		nC
	Q _g (V _{GS} =4.5V)			23		
Gate-Source Charge ²	Q _{gs}			6		
Gate-Drain Charge ²	Q _{gd}			12		
Turn-On Delay Time ²	t _{d(on)}		V _{DS} = 30V, I _D ≅ 20A, V _{GS} = 10V, R _{GEN} = 6Ω		29	
Rise Time ²	t _r			31		
Turn-Off Delay Time ²	t _{d(off)}			51		
Fall Time ²	t _f			31		
SOURCE-DRAIN DIODE RATINGS AND CHARACTERISTICS (T_J = 25 °C)						
Continuous Current ³	I _S				66	A
Forward Voltage ¹	V _{SD}	I _F = 20A, V _{GS} = 0V			1.3	V
Diode Reverse Recovery Time	t _{rr}	I _F = 20A, dI/dt = 100A / μS		26		nS
Diode Reverse Recovery Charge	Q _{rr}			19		uC

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

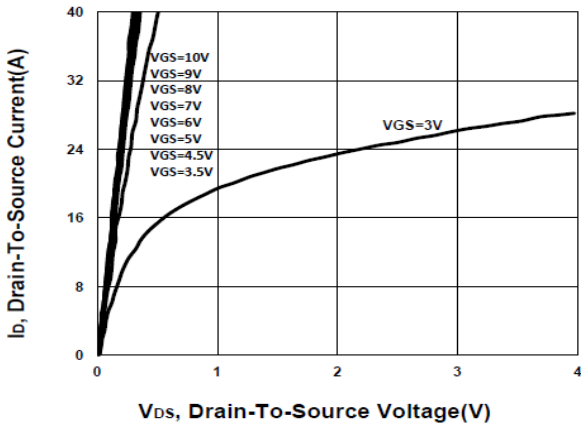
² Independent of operating temperature.

³ Package limitation current is 30A.

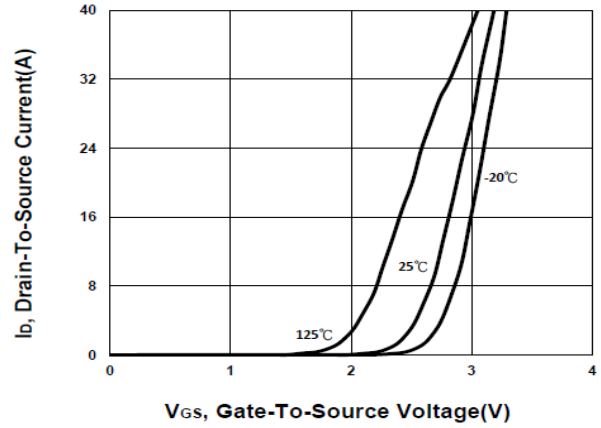
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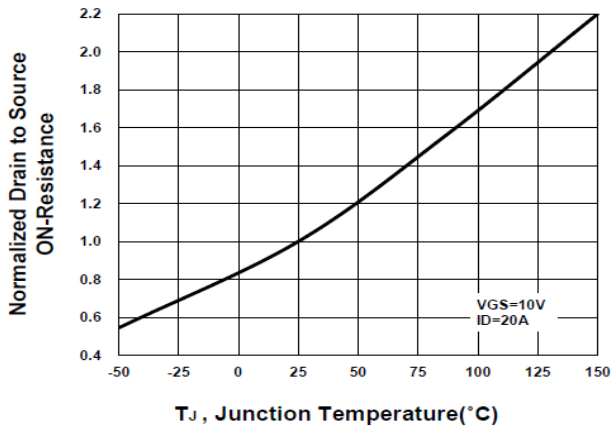
Output Characteristics



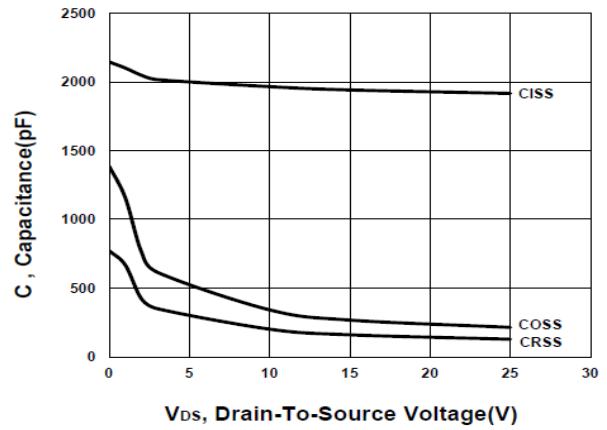
Transfer Characteristics



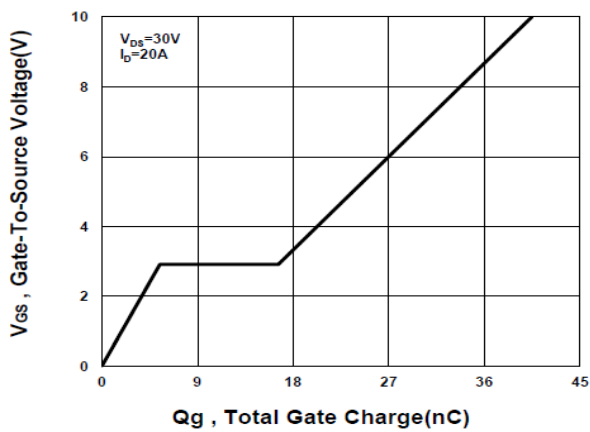
On-Resistance VS Temperature



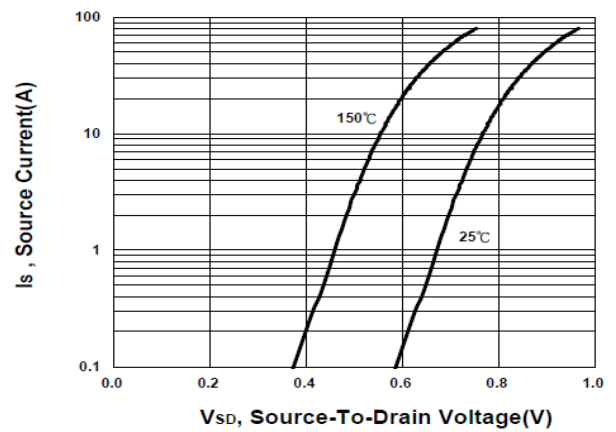
Capacitance Characteristic



Gate charge Characteristics



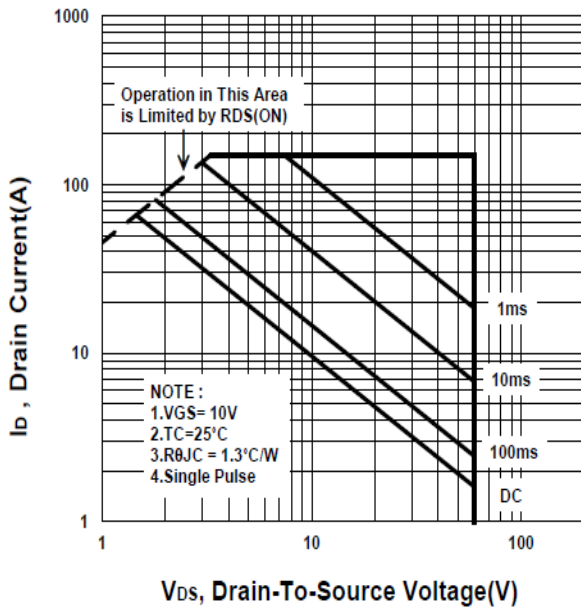
Source-Drain Diode Forward Voltage



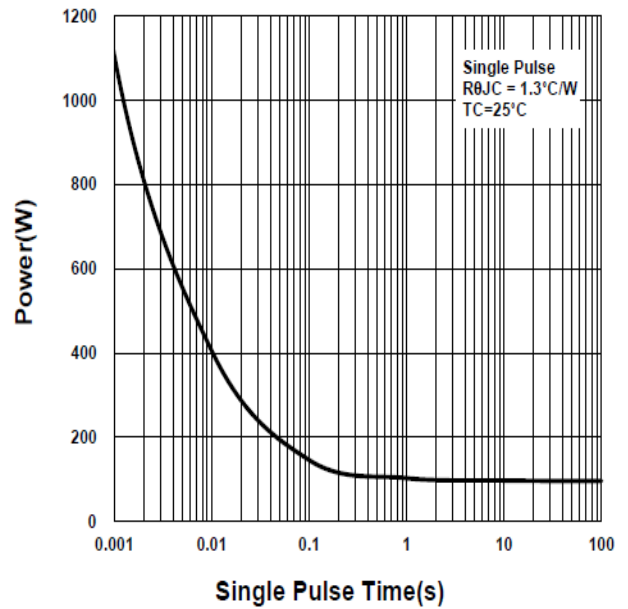
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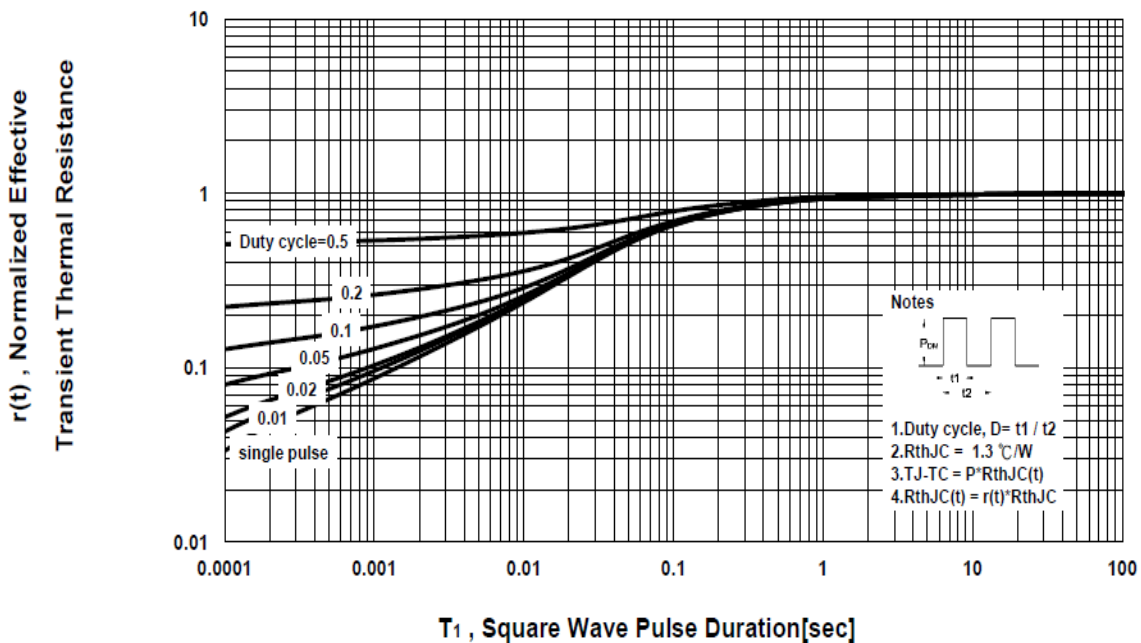
Safe Operating Area



Single Pulse Maximum Power Dissipation



Transient Thermal Response Curve



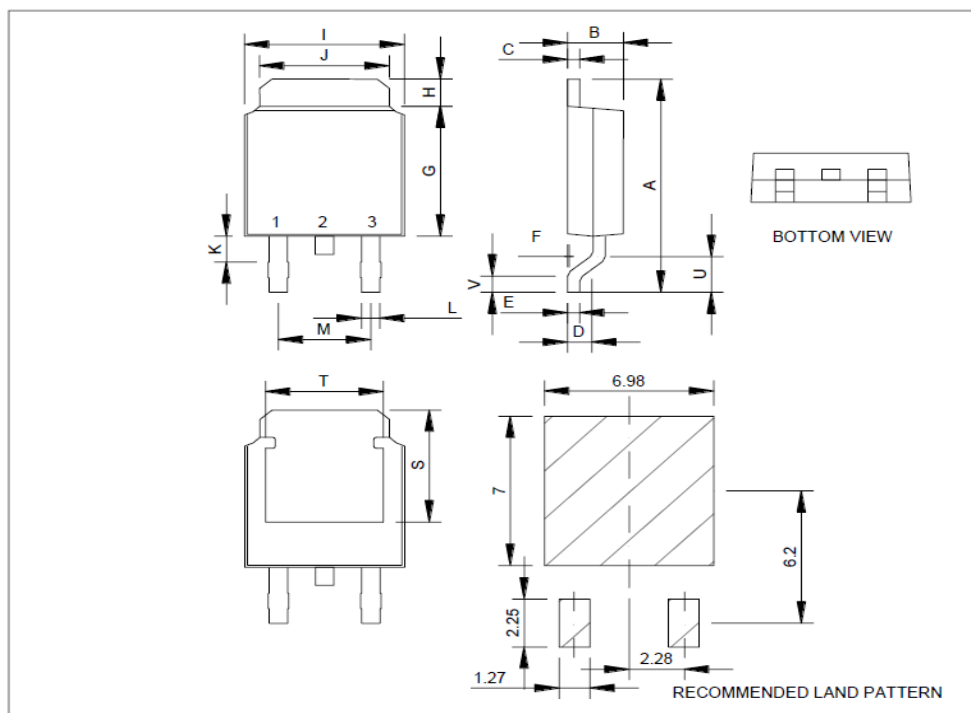
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Package Dimension

TO-252 (DPAK) MECHANICAL DATA

Dimension	mm			Dimension	mm		
	Min.	Typ.	Max.		Min.	Typ.	Max.
A	8.9	10	10.41	J	4.8		5.64
B	2.1	2.2	2.4	K	0.15		1.1
C	0.4	0.5	0.61	L	0.4	0.76	0.89
D	0.82	1.2	1.5	M	4.2	4.58	5
E	0.4	0.5	0.61	S	4.9	5.1	5.3
F	0		0.2	T	4.6	4.75	5.44
G	5.3	6.1	6.3	U	1.4		1.78
H	0.9		1.7	V	0.55	1.25	1.7
I	6.3	6.5	6.8				

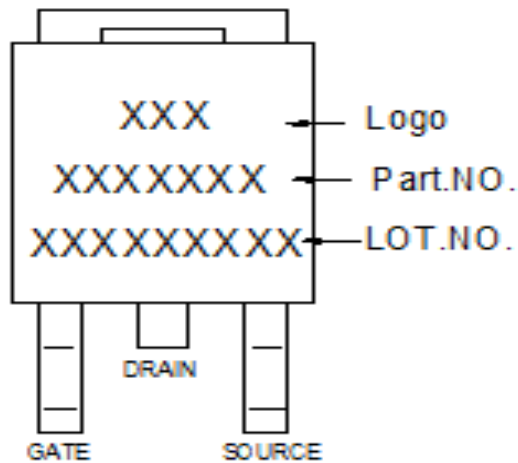


*因为各家封装模具不同而外观略有所差异，不影响电性及Layout。

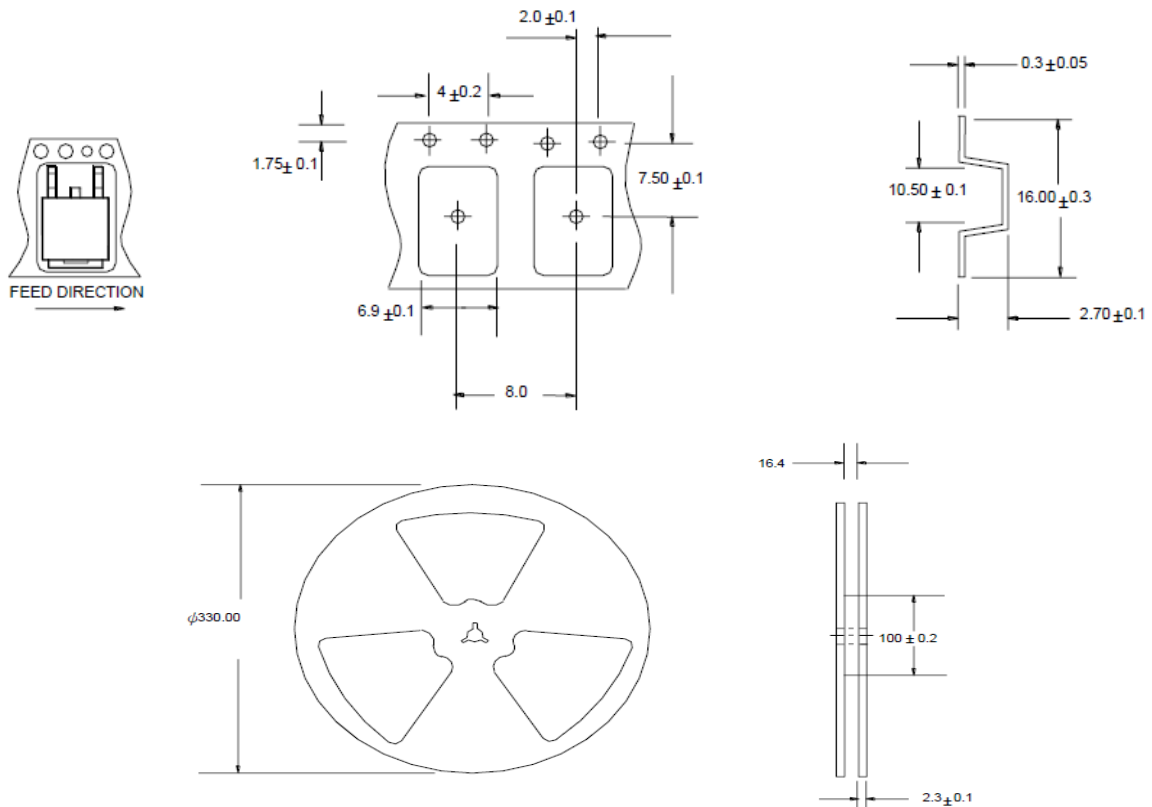
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N-Channel Enhancement Mode MOSFET

A. Marking Information



B. Tape & Reel Information: 2500pcs/Reel

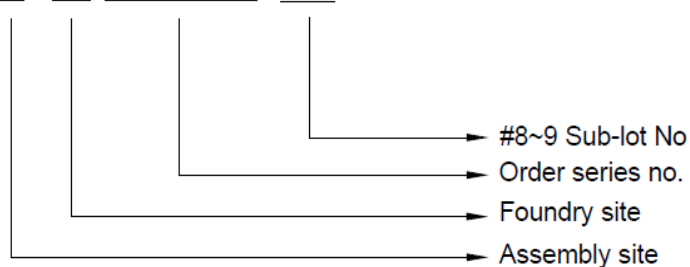


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C. Lot.No. & Date Code rule

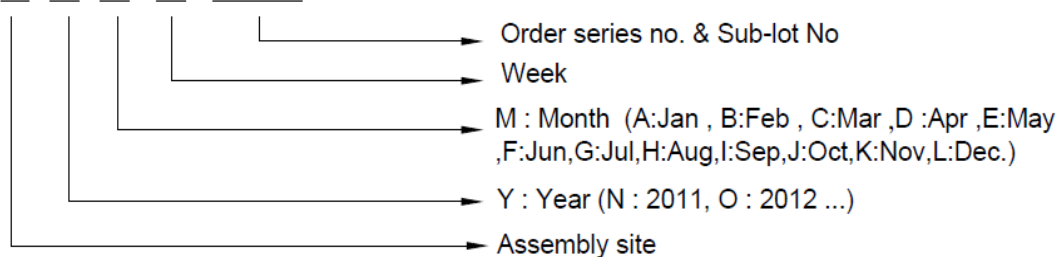
1.LOT.NO.

M N 15M21 03



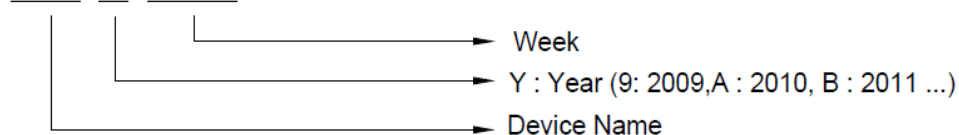
2.Date Code

D Y M X XXX



3.Date Code (for Small package)

XX Y WW





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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”0”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