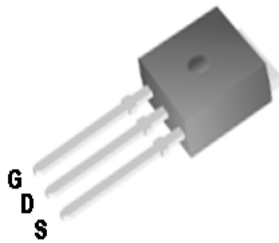


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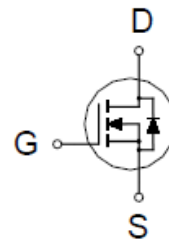
N-Channel Enhancement Mode MOSFET

PRODUCT SUMMARY

$V_{(BR)DSS}$	$R_{DS(ON)}$	I_D
80V	68mΩ @ $V_{GS} = 10V$	16A



TO-251



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

PARAMETERS/TEST CONDITIONS		SYMBOL	LIMITS	UNITS
Drain-Source Voltage		V_{DS}	80	V
Gate-Source Voltage		V_{GS}	±25	
Continuous Drain Current	$T_C = 25\text{ °C}$	I_D	16	A
	$T_C = 100\text{ °C}$		10	
Pulsed Drain Current ¹		I_{DM}	50	
Avalanche Current		I_{AS}	13.7	
Avalanche Energy	$L = 0.1mH$	E_{AS}	9.4	mJ
Power Dissipation	$T_C = 25\text{ °C}$	P_D	39	W
	$T_C = 100\text{ °C}$		15	
Junction & Storage Temperature Range		T_J, T_{STG}	-55 to 150	°C

THERMAL RESISTANCE RATINGS

THERMAL RESISTANCE	SYMBOL	TYPICAL	MAXIMUM	UNITS
Junction-to-Case	$R_{\theta JC}$		3.2	°C / W
Junction-to-Ambient	$R_{\theta JA}$		62.5	

¹Pulse width limited by maximum junction temperature.

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ELECTRICAL CHARACTERISTICS ($T_J = 25\text{ }^{\circ}\text{C}$, Unless Otherwise Noted)

PARAMETER	SYMBOL	TEST CONDITIONS	LIMITS			UNITS
			MIN	TYP	MAX	
STATIC						
Drain-Source Breakdown Voltage	$V_{(BR)DSS}$	$V_{GS} = 0V, I_D = 250\mu A$	80			V
Gate Threshold Voltage	$V_{GS(th)}$	$V_{DS} = V_{GS}, I_D = 250\mu A$	1.3	1.8	2.3	
Gate-Body Leakage	I_{GSS}	$V_{DS} = 0V, V_{GS} = \pm 25V$			± 100	nA
Zero Gate Voltage Drain Current	I_{DSS}	$V_{DS} = 64V, V_{GS} = 0V$			1	μA
		$V_{DS} = 60V, V_{GS} = 0V, T_J = 125\text{ }^{\circ}C$			10	
Drain-Source On-State Resistance ¹	$R_{DS(ON)}$	$V_{GS} = 4.5V, I_D = 10A$		50	78	m Ω
		$V_{GS} = 10V, I_D = 15A$		48	68	
Forward Transconductance ¹	g_{fs}	$V_{DS} = 5V, I_D = 15A$		34		S
DYNAMIC						
Input Capacitance	C_{iss}	$V_{GS} = 0V, V_{DS} = 25V, f = 1MHz$		540		pF
Output Capacitance	C_{oss}			70		
Reverse Transfer Capacitance	C_{rss}			42		
Gate Resistance	R_g	$V_{GS} = 0V, V_{DS} = 0V, f = 1MHz$		1.3		Ω
Total Gate Charge ²	Q_g	$V_{GS} = 10\text{ V},$ $V_{DS} = 40V, I_D = 15A$		14		nC
Gate-Source Charge ²	Q_{gs}			2		
Gate-Drain Charge ²	Q_{gd}			5		
Turn-On Delay Time ²	$t_{d(on)}$	$V_{DS} = 40V$ $I_D \cong 15A, V_{GS} = 10V, R_{GEN} = 6\Omega$		14		nS
Rise Time ²	t_r			12		
Turn-Off Delay Time ²	$t_{d(off)}$			38		
Fall Time ²	t_f			16		
SOURCE-DRAIN DIODE RATINGS AND CHARACTERISTICS ($T_J = 25\text{ }^{\circ}C$)						
Continuous Current	I_S				16	A
Forward Voltage ¹	V_{SD}	$I_F = 15A, V_{GS} = 0V$			1.3	V
Reverse Recovery Time	t_{rr}	$I_F = 15A, di_F/dt = 100A / \mu S$		26		nS
Reverse Recovery Charge	Q_{rr}			28		nC

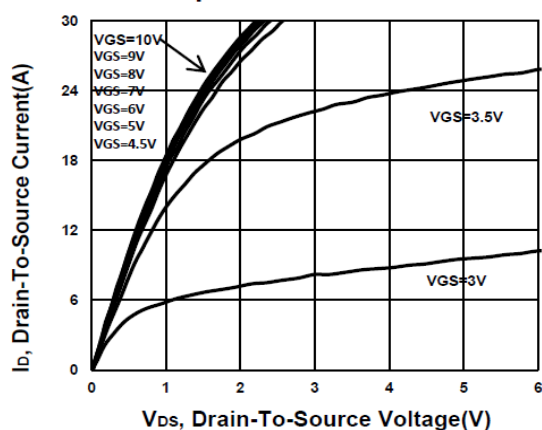
¹Pulse test : Pulse Width $\leq 300\text{ }\mu\text{sec}$, Duty Cycle $\leq 2\%$.

²Independent of operating temperature.

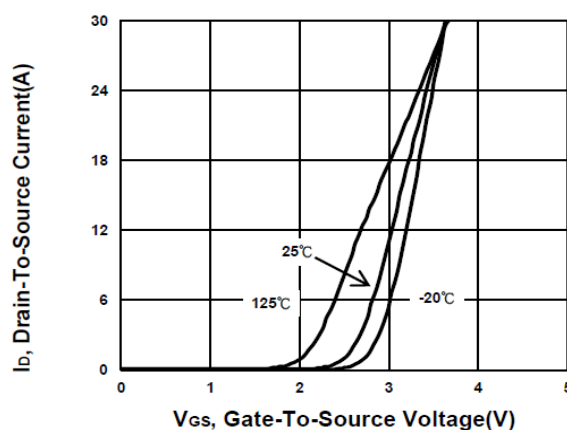
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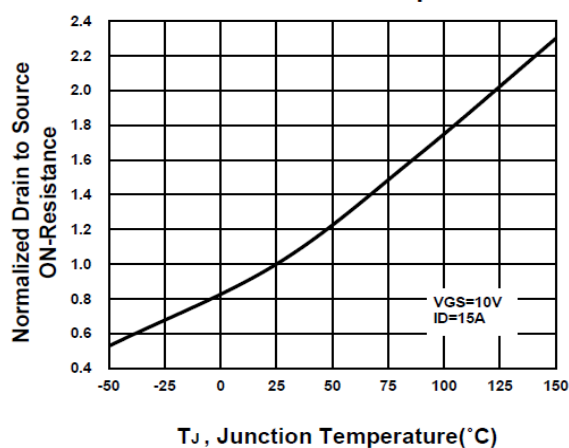
Output Characteristics



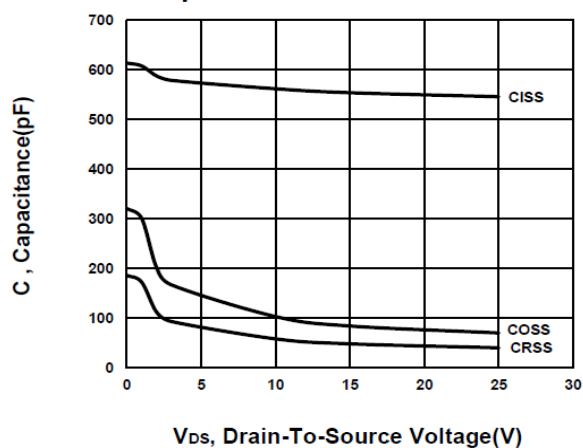
Transfer Characteristics



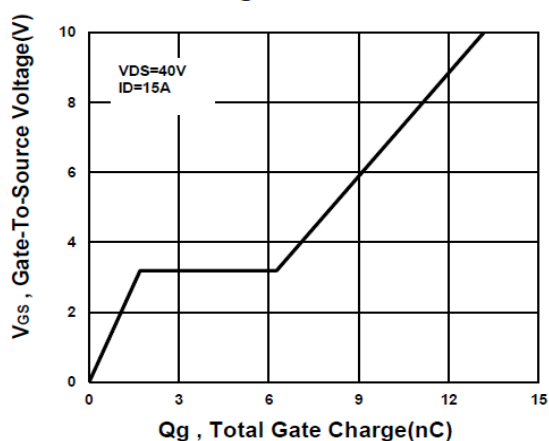
On-Resistance VS Temperature



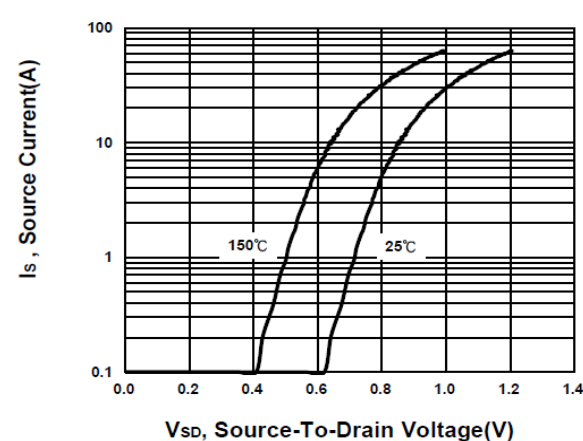
Capacitance Characteristic



Gate charge Characteristics



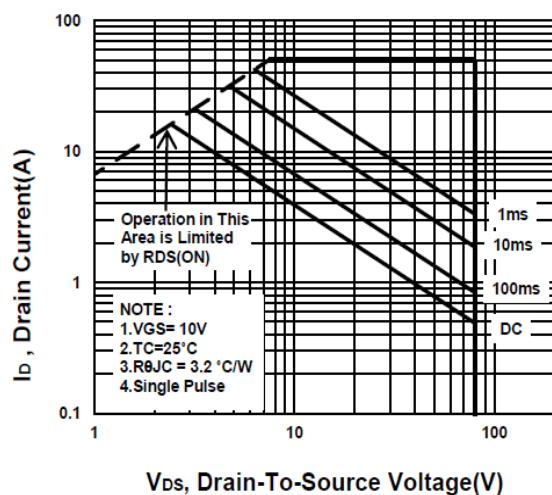
Source-Drain Diode Forward Voltage



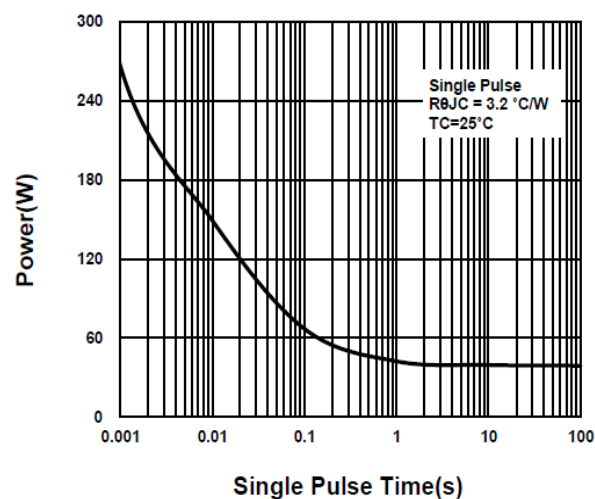
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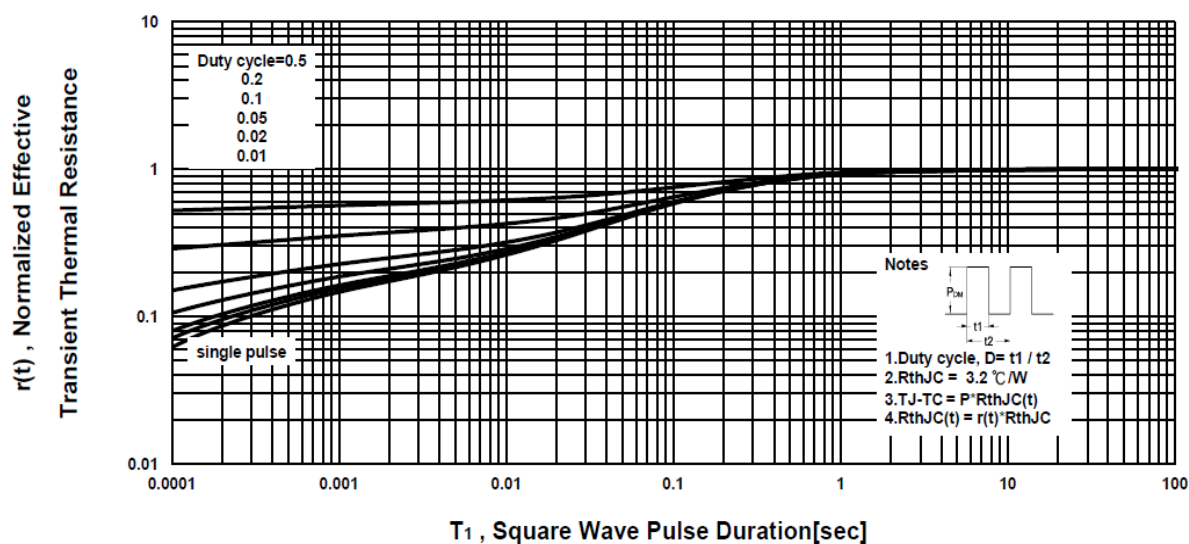
Safe Operating Area



Single Pulse Maximum Power Dissipation



Transient Thermal Response Curve



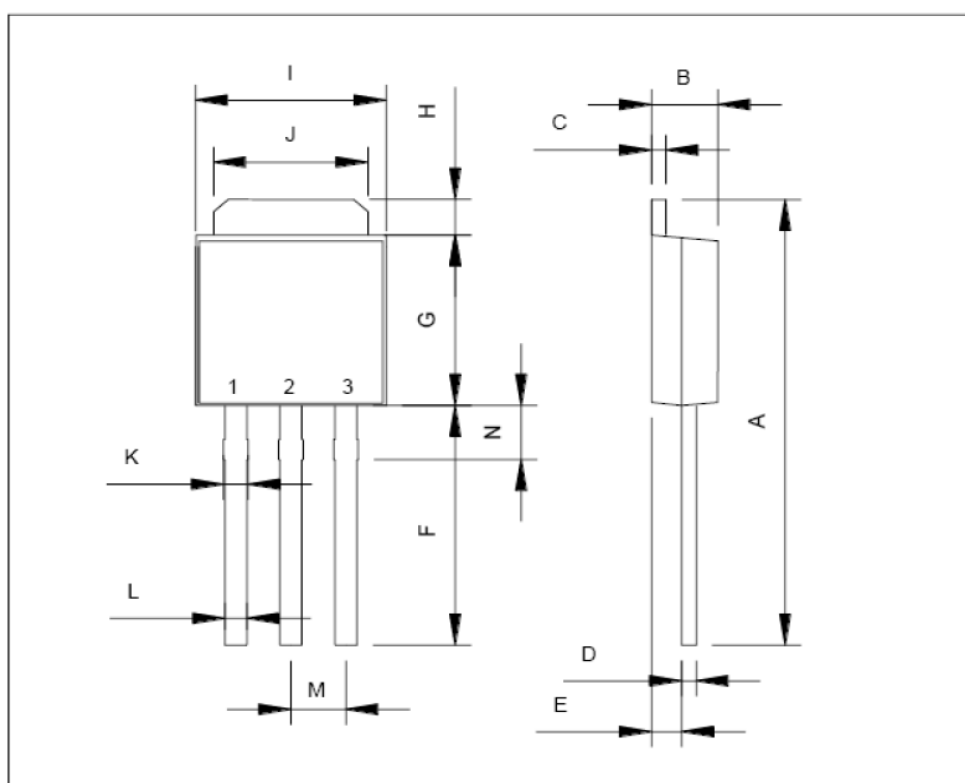
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N-Channel Enhancement Mode MOSFET

Package Dimension

TO-251 MECHANICAL DATA

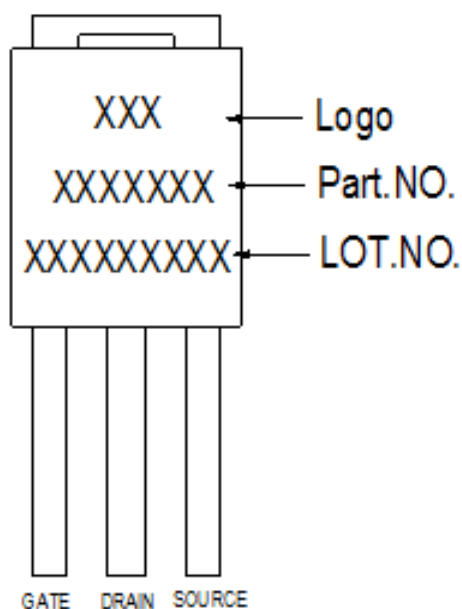
Dimension	mm			Dimension	mm		
	Min.	Typ.	Max.		Min.	Typ.	Max.
A	14	15	17.14	H	0.89		1.7
B	2.1	2.3	2.5	I	6.3		6.8
C	0.4	0.5	0.6	J	4.8		5.5
D	0.35	0.5	0.65	K	0.5	0.84	1.14
E	0.9	1.1	1.5	L	0.4	0.76	0.912
F	7		9.65	M		2.3	
G	5.3		6.22	N	1.4	2.16	2.23



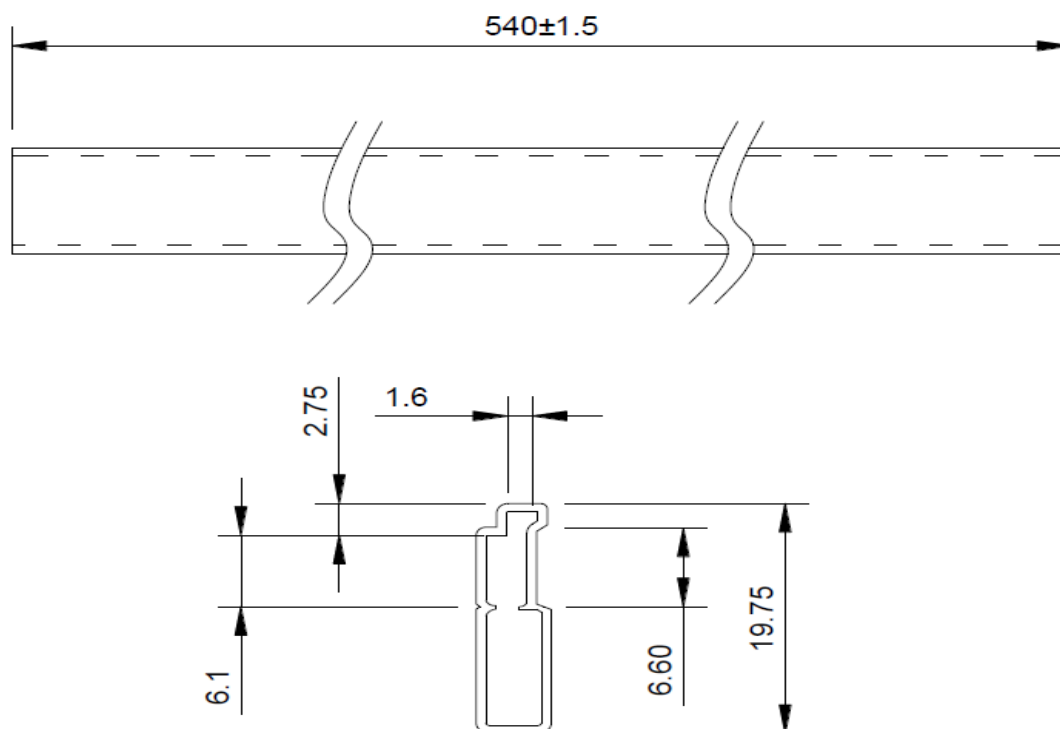
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N-Channel Enhancement Mode MOSFET

A. Marking Information



B. Tape&Reel Information:75pcs/Tube

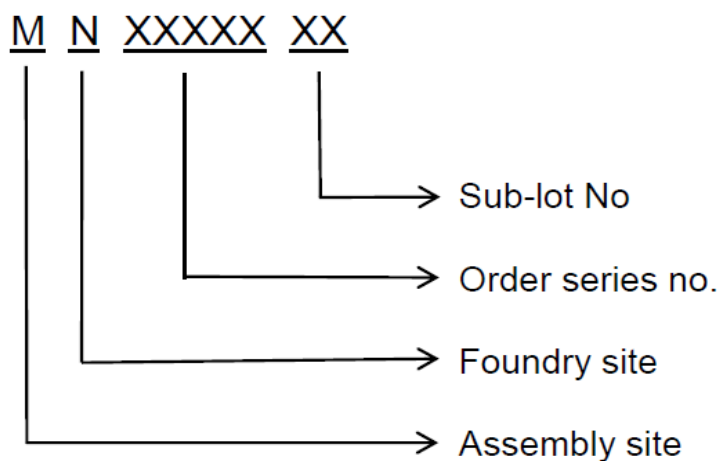


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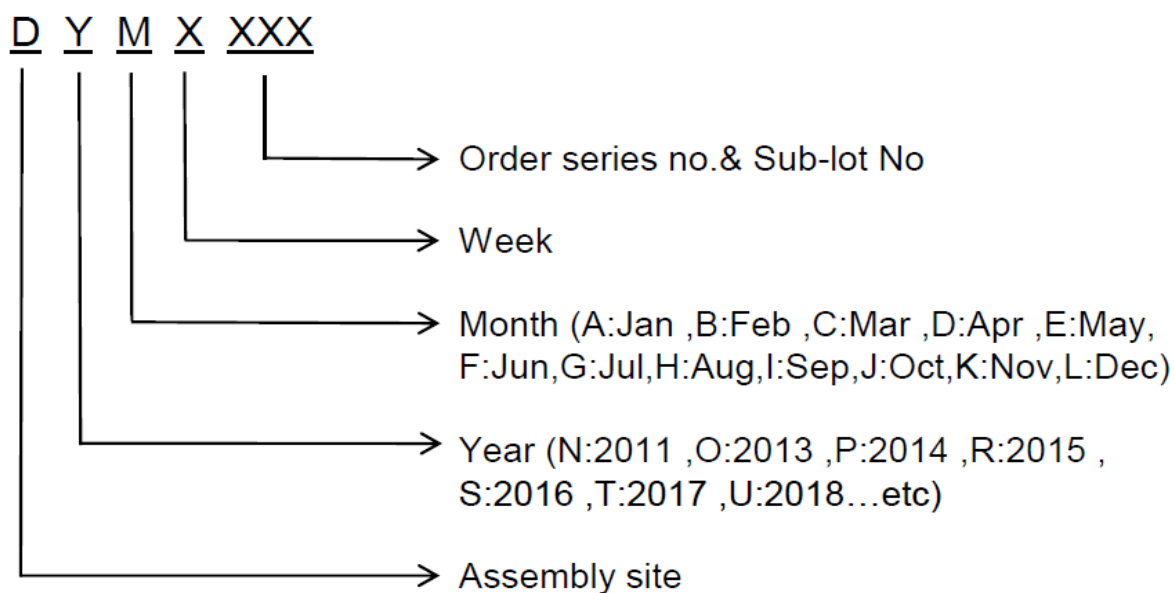
N-Channel Enhancement Mode MOSFET

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"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	 long axis: 12 mm minor axis: 6 mm bottom color: White Font color: Black Font style: Arial
11	Halogen Free label	 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