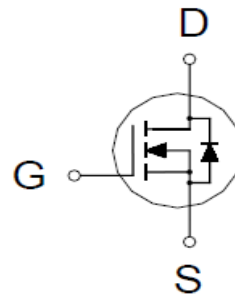


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N-Channel Enhancement Mode MOSFET

PRODUCT SUMMARY

$V_{(BR)DSS}$	$R_{DS(ON)}$	I_D
30V	9.5m Ω @ $V_{GS} = 10V$	31A



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

PARAMETERS/TEST CONDITIONS		SYMBOL	LIMITS	UNITS
Drain-Source Voltage		V_{DS}	30	V
Gate-Source Voltage		V_{GS}	± 25	
Continuous Drain Current ³	$T_c = 25\text{ }^{\circ}\text{C}$	I_D	31	A
	$T_c = 100\text{ }^{\circ}\text{C}$		19	
Pulsed Drain Current ¹		I_{DM}	90	
Continuous Drain Current	$T_A = 25\text{ }^{\circ}\text{C}$	I_D	10	
	$T_A = 70\text{ }^{\circ}\text{C}$		8	
Avalanche Current		I_{AS}	22	
Avalanche Energy	$L = 0.1\text{mH}$	E_{AS}	24	mJ
Power Dissipation	$T_c = 25\text{ }^{\circ}\text{C}$	P_D	18	W
	$T_c = 100\text{ }^{\circ}\text{C}$		7	
	$T_A = 25\text{ }^{\circ}\text{C}$		1.7	
	$T_A = 70\text{ }^{\circ}\text{C}$		1.1	
Operating 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 ²	Steady-State	$R_{\theta JA}$		70	$^{\circ}\text{C} / \text{W}$
Junction-to-Case	Steady-State	$R_{\theta JC}$		7	

¹Pulse width limited by maximum junction temperature.

²The value of $R_{\theta JA}$ is measured with the device mounted on 1in² FR-4 board with 2oz. Copper, in a still air environment with $T_A = 25^{\circ}\text{C}$.

³Package limitation current is 27A.

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

PARAMETER	SYMBOL	TEST CONDITIONS	LIMITS			UNITS
			MIN	TYP	MAX	
STATIC						
Drain-Source Breakdown Voltage	$V_{(BR)DSS}$	$V_{GS} = 0V, I_D = 250\mu A$	30			V
Gate Threshold Voltage	$V_{GS(th)}$	$V_{DS} = V_{GS}, I_D = 250\mu A$	1.3	2	2.3	
Gate-Body Leakage	I_{GSS}	$V_{DS} = 0V, V_{GS} = \pm 25V$			± 100	nA
Zero Gate Voltage Drain Current	I_{DSS}	$V_{DS} = 24V, V_{GS} = 0V$			1	μA
		$V_{DS} = 20V, V_{GS} = 0V, T_J = 55^\circ C$			10	
Drain-Source On-State Resistance ¹	$R_{DS(ON)}$	$V_{GS} = 4.5V, I_D = 8.8A$		14.3	17	m Ω
		$V_{GS} = 10V, I_D = 10A$		7.5	9.5	
Forward Transconductance ¹	g_{fs}	$V_{DS} = 5V, I_D = 10A$		28		S
DYNAMIC						
Input Capacitance	C_{iss}	$V_{GS} = 0V, V_{DS} = 15V, f = 1MHz$		530		pF
Output Capacitance	C_{oss}			160		
Reverse Transfer Capacitance	C_{rss}			90		
Gate Resistance	R_g	$V_{GS} = 0V, V_{DS} = 0V, f = 1MHz$		2.7		Ω
Total Gate Charge ²	$Q_g(V_{GS}=10V)$	$V_{DS} = 15V, V_{GS} = 10V, I_D = 10A$		12		nC
	$Q_g(V_{GS}=4.5V)$			6.7		
Gate-Source Charge ²	Q_{gs}			1.5		
Gate-Drain Charge ²	Q_{gd}			4.3		
Turn-On Delay Time ²	$t_{d(on)}$	$V_{DS}= 15V, I_D \cong 10A, V_{GS} = 10V, R_{GEN}= 6\Omega$		18		nS
Rise Time ²	t_r			16		
Turn-Off Delay Time ²	$t_{d(off)}$			35		
Fall Time ²	t_f			17		
SOURCE-DRAIN DIODE RATINGS AND CHARACTERISTICS ($T_J = 25^\circ C$)						
Continuous Current	I_S				15	A
Forward Voltage ¹	V_{SD}	$I_F = 10A, V_{GS} = 0V$			1.2	V
Reverse Recovery Time	t_{rr}	$I_F = 10A, dI_F/dt = 100A / \mu S$		15		nS
Reverse Recovery Charge	Q_{rr}			5		nC

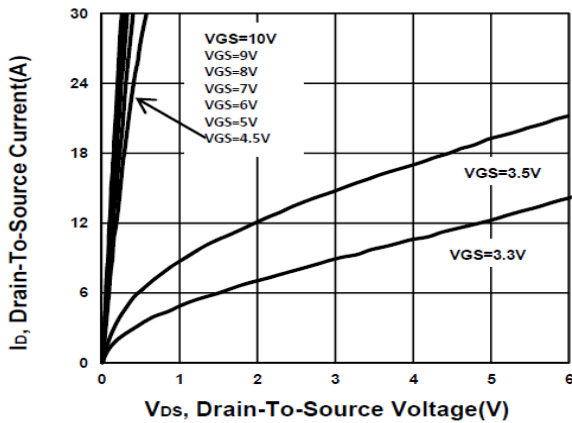
¹Pulse test : Pulse Width $\leq 300 \mu\text{sec}$, Duty Cycle $\leq 2\%$.

²Independent of operating temperature.

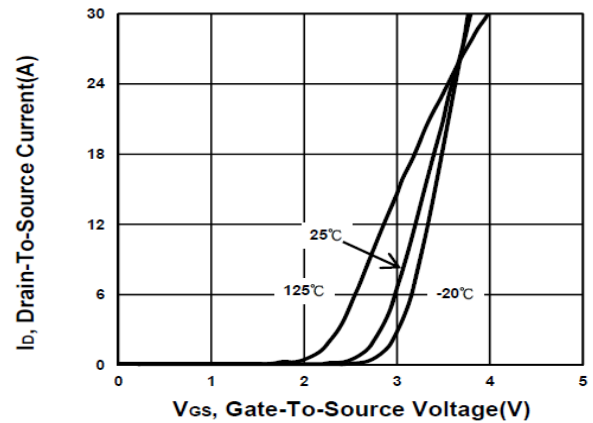
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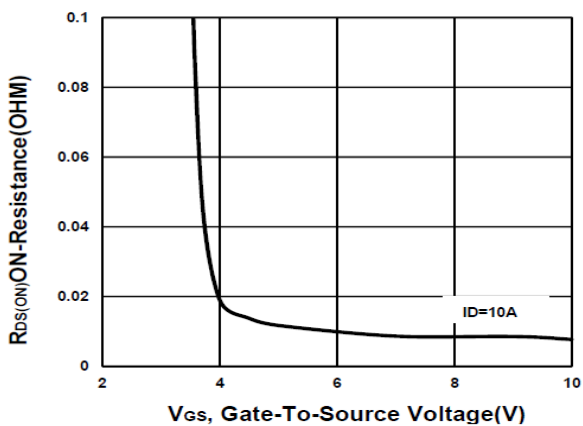
Output Characteristics



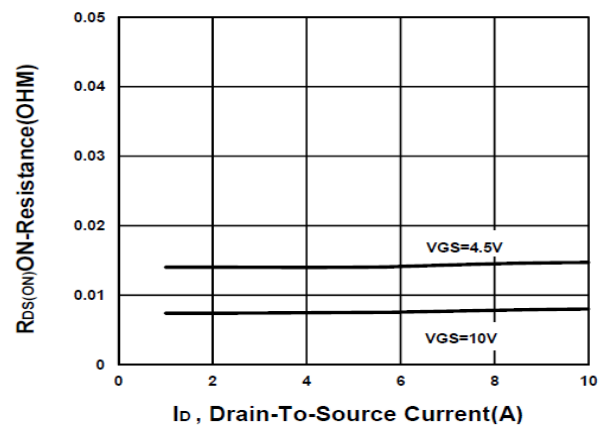
Transfer Characteristics



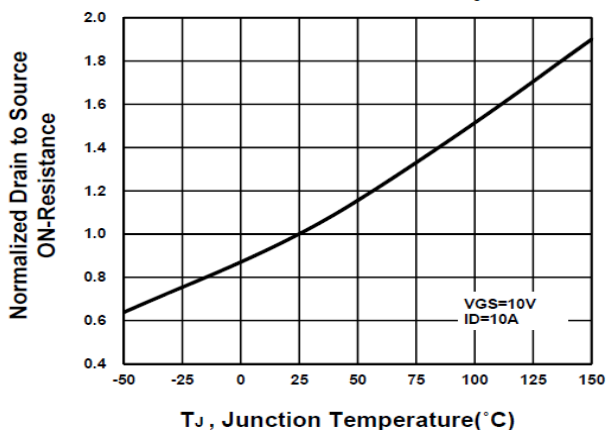
On-Resistance VS Gate-To-Source



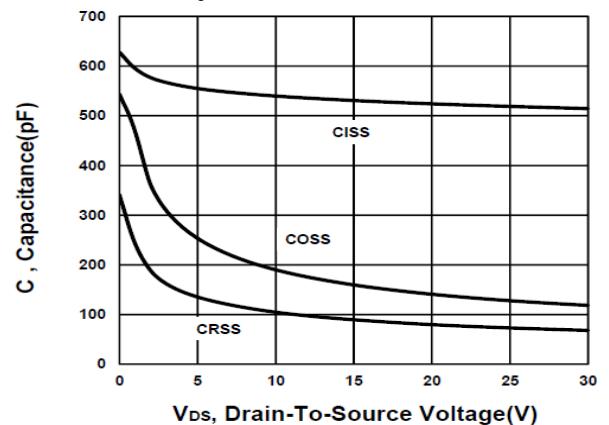
On-Resistance VS Drain Current



On-Resistance VS Temperature



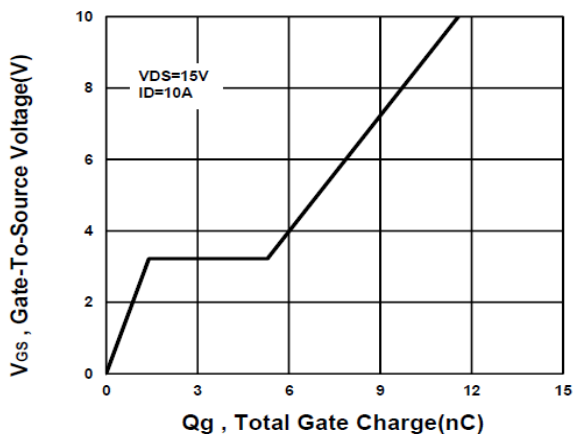
Capacitance Characteristic



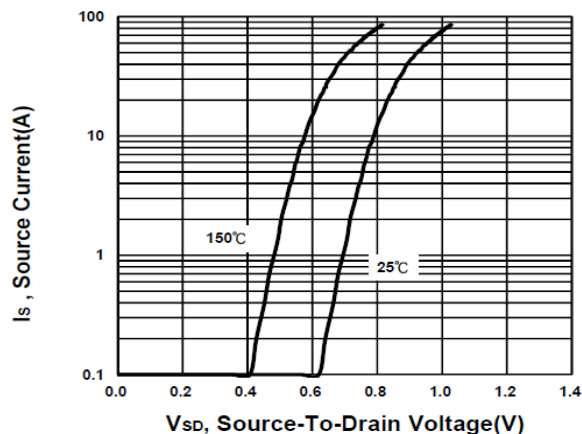
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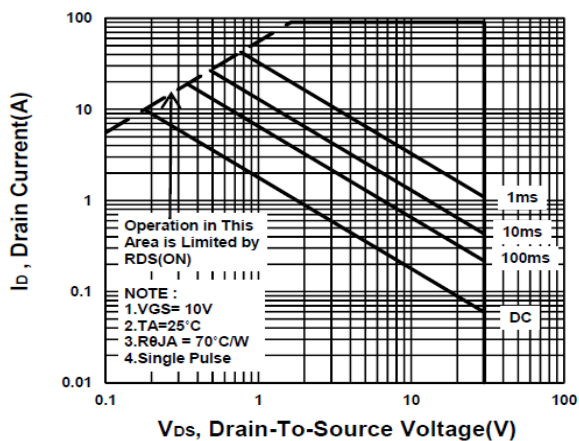
Gate charge Characteristics



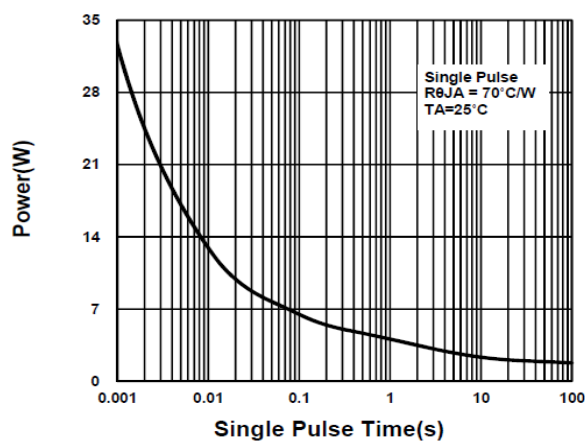
Source-Drain Diode Forward Voltage



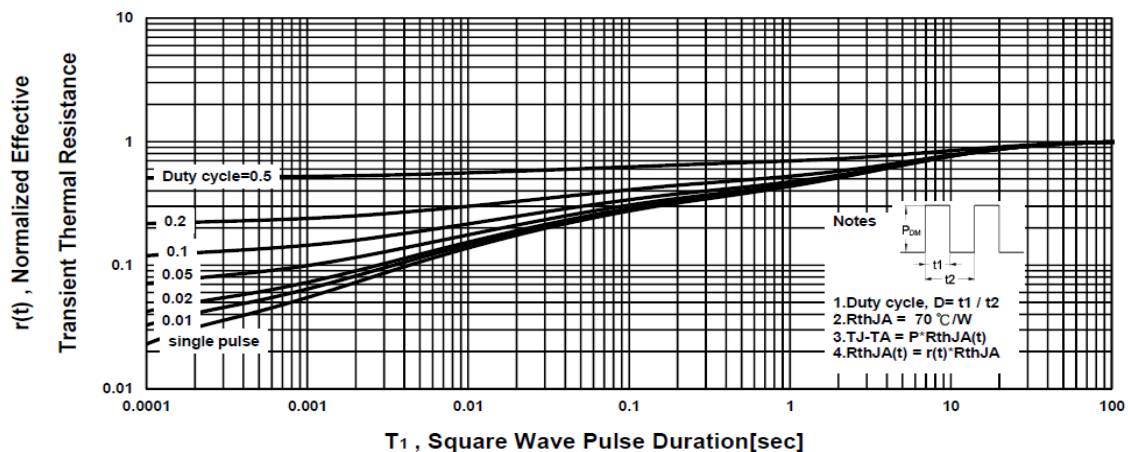
Safe Operating Area



Single Pulse Maximum Power Dissipation



Transient Thermal Response Curve



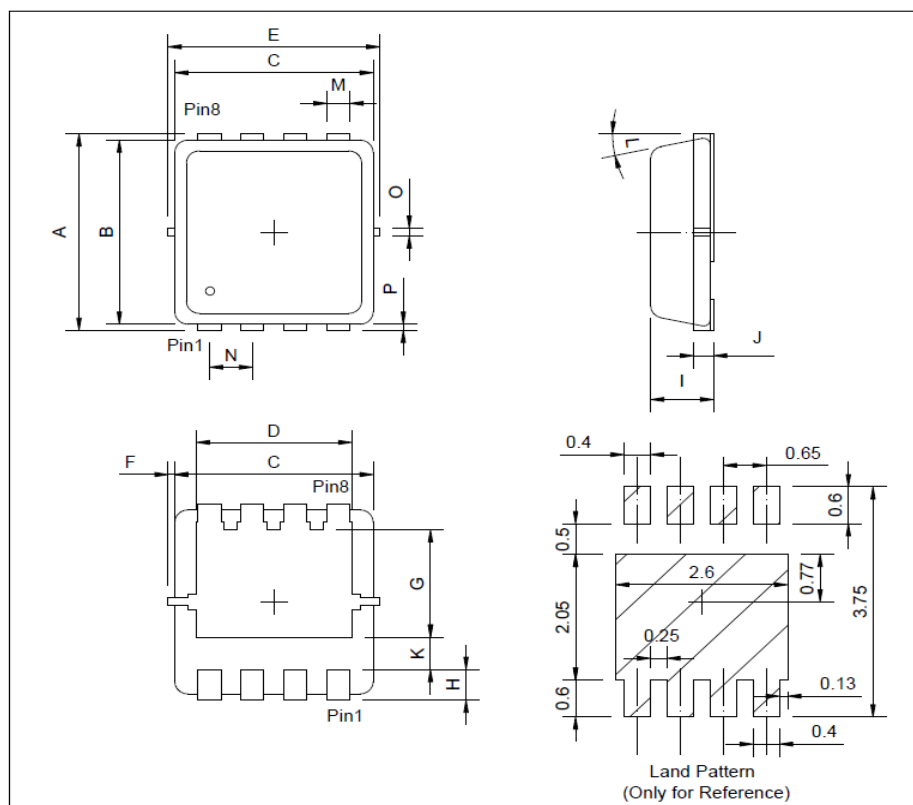
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Package Dimension

PDFN 3x3P MECHANICAL DATA

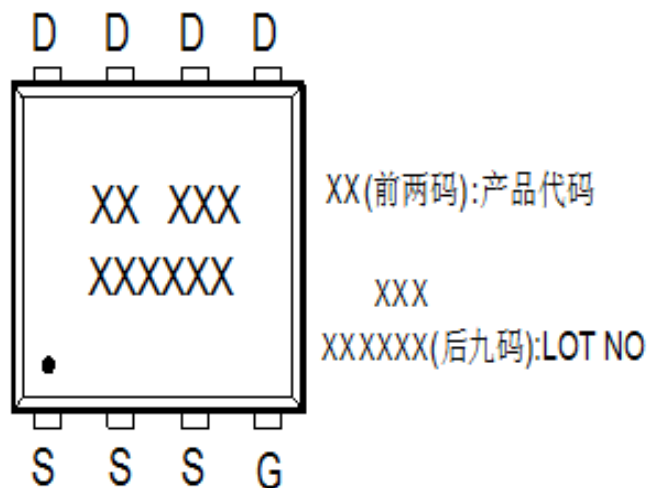
Dimension	mm			Dimension	mm		
	Min.	Typ.	Max.		Min.	Typ.	Max.
A	3	3.3	3.6	I	0.65	0.8	0.9
B	2.88	3	3.2	J	0.1	0.15	0.25
C	2.9	3	3.25	K	0.59		
D	2.29	2.45	2.69	L	0°	10°	12°
E	3	3.3	3.6	M	0.14	0.3	0.4
F	0	0.1	0.2	N	0.55	0.65	0.75
G	1.35	1.75	2.2	O		0.2	
H	0.15	0.3	0.55	P	0		0.2



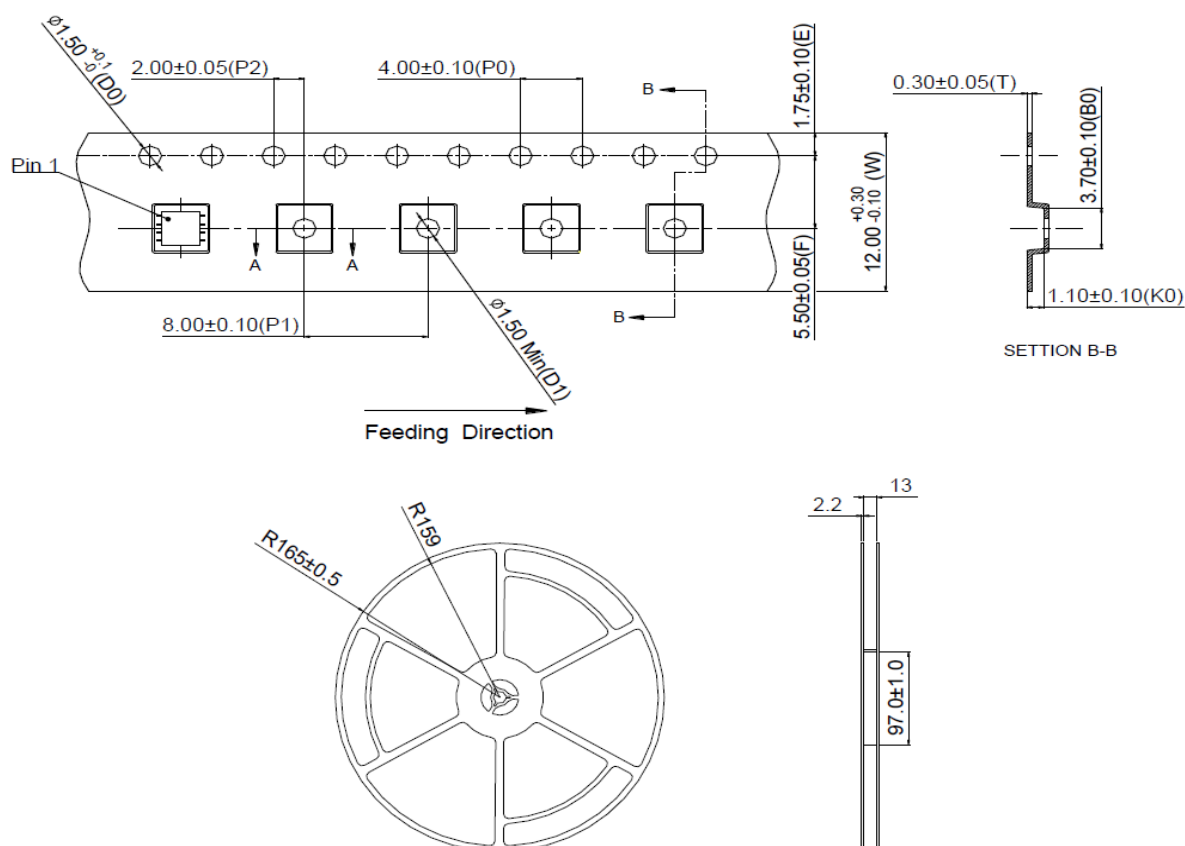
PE5E4BA

N-Channel Enhancement Mode MOSFET

A. Marking Information(此产品代码为: L8)



B. Tape&Reel Information:5000pcs/Reel

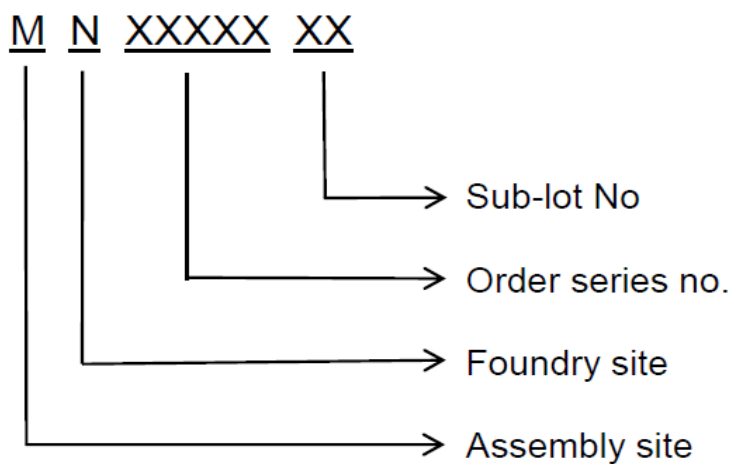


PE5E4BA

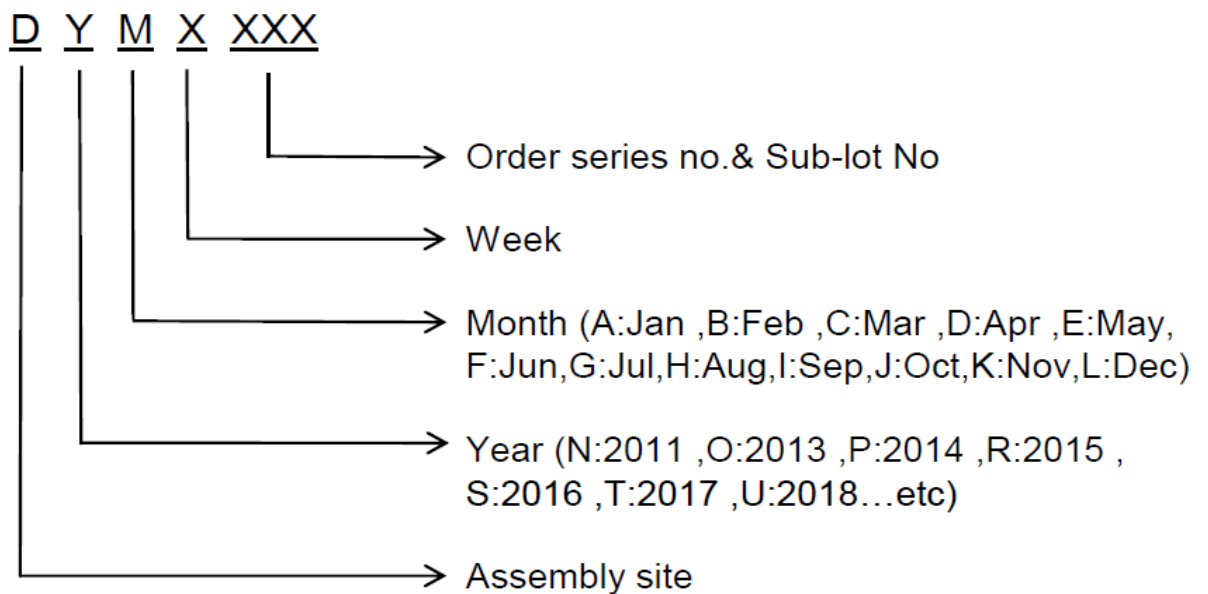
N-Channel Enhancement Mode MOSFET

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