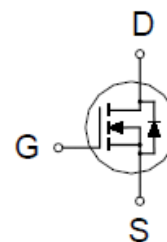
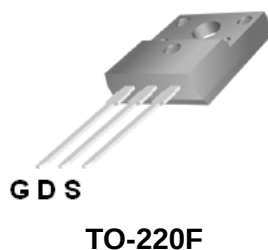


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N-Channel Enhancement Mode MOSFET

PRODUCT SUMMARY

$V_{(BR)DSS}$	$R_{DS(ON)}$	I_D
200V	150mΩ @ $V_{GS} = 10V$	18A



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

PARAMETERS/TEST CONDITIONS		SYMBOL	LIMITS	UNITS
Drain-Source Voltage		V_{DS}	200	V
Gate-Source Voltage		V_{GS}	±20	
Continuous Drain Current	$T_C = 25\text{ }^{\circ}\text{C}$	I_D	18	A
	$T_C = 100\text{ }^{\circ}\text{C}$		7	
Pulsed Drain Current ¹		I_{DM}	30	
Avalanche Current		I_{AS}	11	
Avalanche Energy	$L = 1\text{mH}$	E_{AS}	61	mJ
Power Dissipation	$T_C = 25\text{ }^{\circ}\text{C}$	P_D	42	W
	$T_C = 100\text{ }^{\circ}\text{C}$		17	
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-Case	$R_{\theta JC}$		3	$^{\circ}\text{C} / \text{W}$
Junction-to-Ambient	$R_{\theta JA}$		62.5	

¹Pulse width limited by maximum junction temperature.

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

PARAMETER	SYMBOL	TEST CONDITIONS	LIMITS			UNITS
			MIN	TYP	MAX	
STATIC						
Drain-Source Breakdown Voltage	$V_{(BR)DSS}$	$V_{GS} = 0V, I_D = 250\mu A$	200			V
Gate Threshold Voltage	$V_{GS(th)}$	$V_{DS} = V_{GS}, I_D = 250\mu A$	1	2	3	
Gate-Body Leakage	I_{GSS}	$V_{DS} = 0V, V_{GS} = \pm 20V$			± 100	nA
Zero Gate Voltage Drain Current	I_{DSS}	$V_{DS} = 200V, V_{GS} = 0V$			1	μA
		$V_{DS} = 160V, V_{GS} = 0V, T_J = 125^\circ C$			10	
Drain-Source On-State Resistance ¹	$R_{DS(ON)}$	$V_{GS} = 10V, I_D = 9A$		117	150	mΩ
		$V_{GS} = 4.5V, I_D = 9A$		175	195	
Forward Transconductance ¹	g_{fs}	$V_{DS} = 10V, I_D = 9A$		15		S
DYNAMIC						
Input Capacitance	C_{iss}	$V_{GS} = 0V, V_{DS} = 25V, f = 1MHz$		811		pF
Output Capacitance	C_{oss}			137		
Reverse Transfer Capacitance	C_{rss}			19		
Total Gate Charge ²	$Q_{g(VGS=10V)}$	$V_{DS} = 160V, I_D = 18A$		25		nC
	$Q_{g(VGS=4.5V)}$			13		
Gate-Source Charge ²	Q_{gs}			3		
Gate-Drain Charge ²	Q_{gd}			10		
Turn-On Delay Time ²	$t_{d(on)}$	$V_{DS} = 100V, I_D \cong 18A, V_{GS} = 10V, R_{GEN} = 25\Omega$		21		nS
Rise Time ²	t_r			140		
Turn-Off Delay Time ²	$t_{d(off)}$			183		
Fall Time ²	t_f			133		
SOURCE-DRAIN DIODE RATINGS AND CHARACTERISTICS ($T_J = 25^\circ C$)						
Continuous Current	I_S				18	A
Forward Voltage ¹	V_{SD}	$I_F = 18A, V_{GS} = 0V$			1	V
Reverse Recovery Time	t_{rr}	$I_F = 18A, dI_F/dt = 100A/\mu s$		130		nS
Reverse Recovery Charge	Q_{rr}			0.67		uC

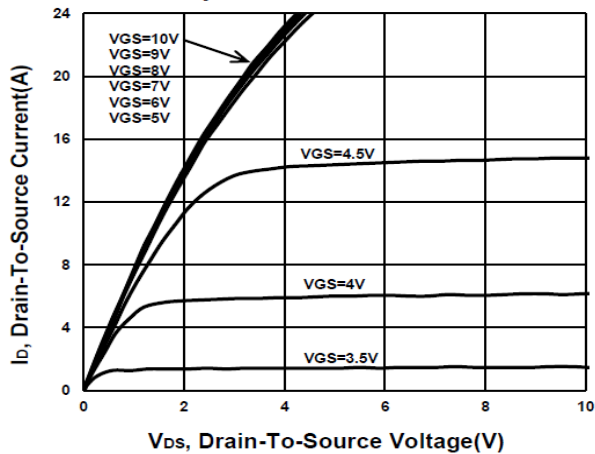
¹Pulse test : Pulse Width $\leq 300 \mu\text{sec}$, Duty Cycle $\leq 2\%$.

²Independent of operating temperature.

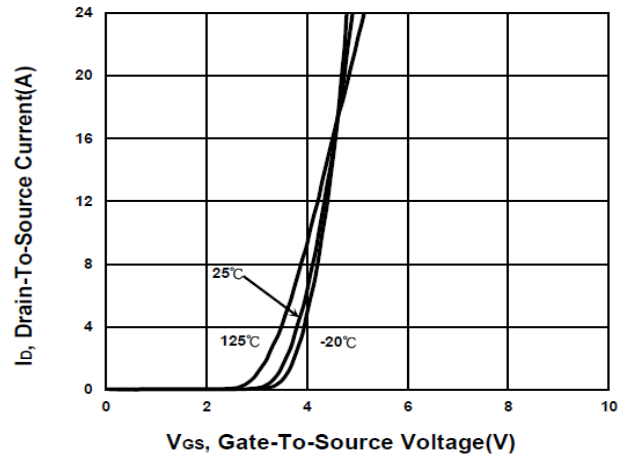
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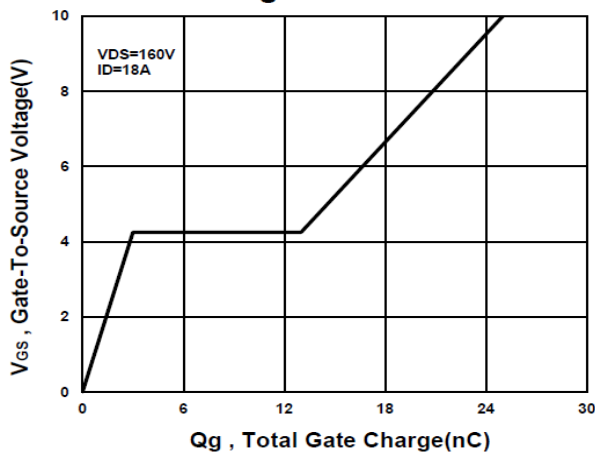
Output Characteristics



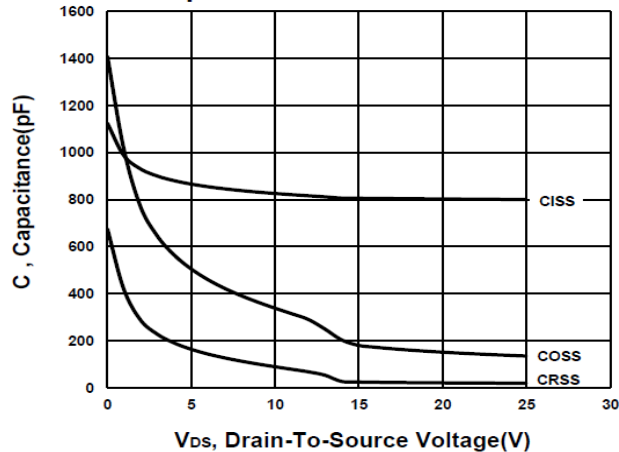
Transfer Characteristics



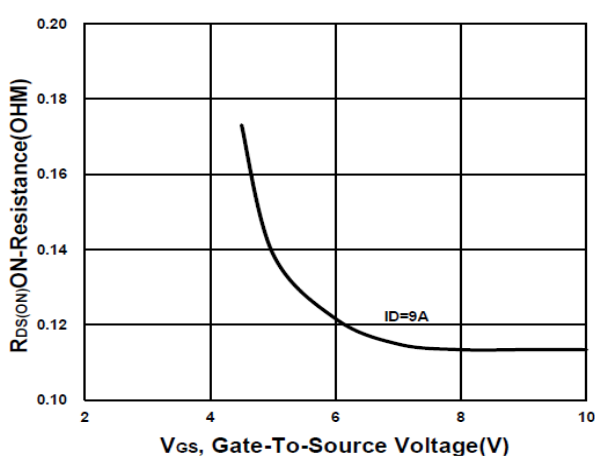
Gate charge Characteristics



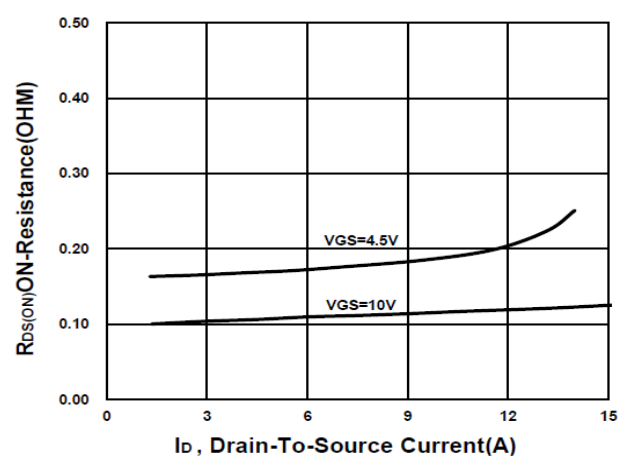
Capacitance Characteristic



On-Resistance VS Gate-To-Source



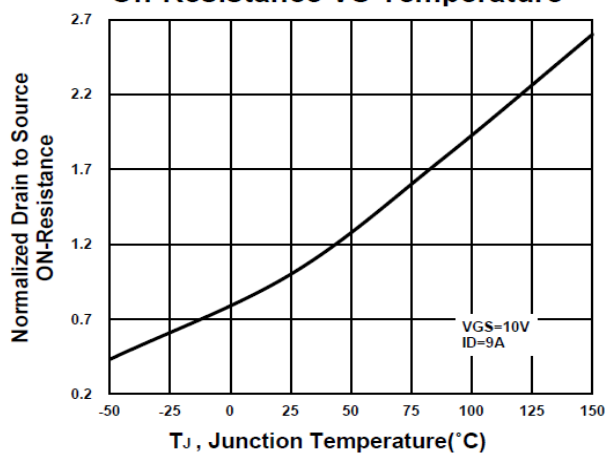
On-Resistance VS Drain Current



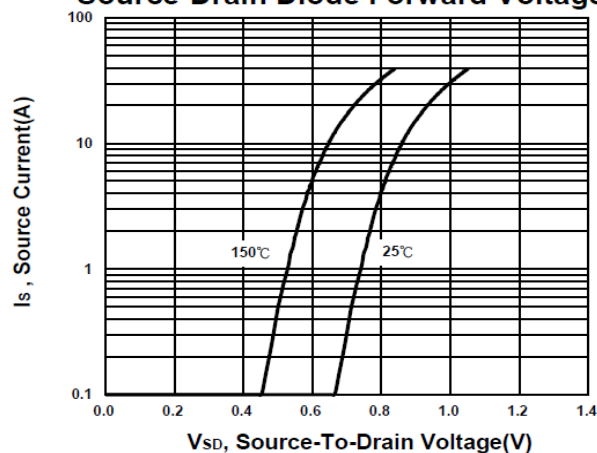
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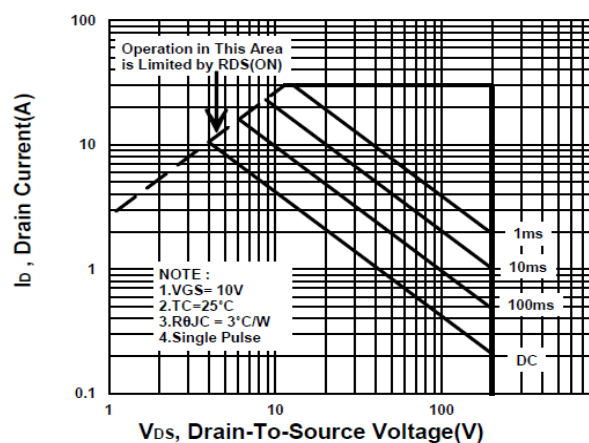
On-Resistance VS Temperature



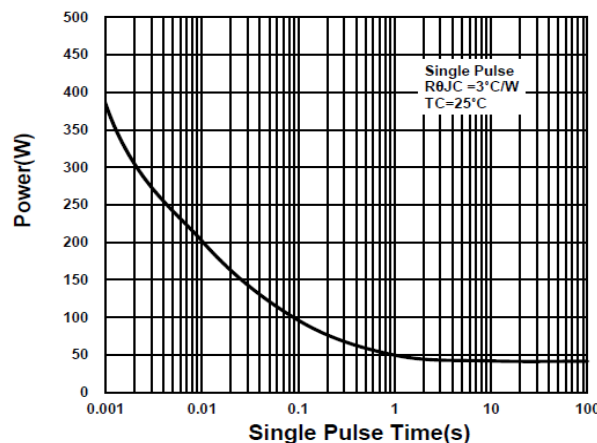
Source-Drain Diode Forward Voltage



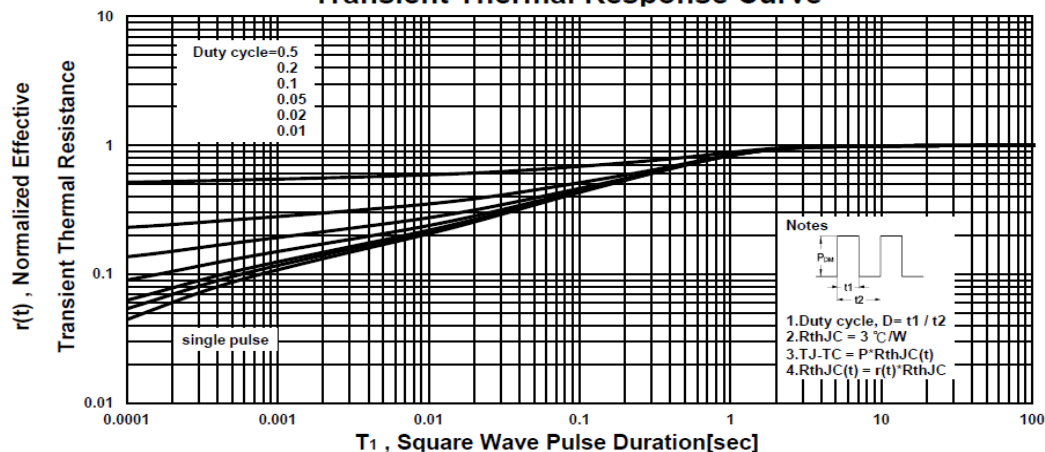
Safe Operating Area



Single Pulse Maximum Power Dissipation



Transient Thermal Response Curve



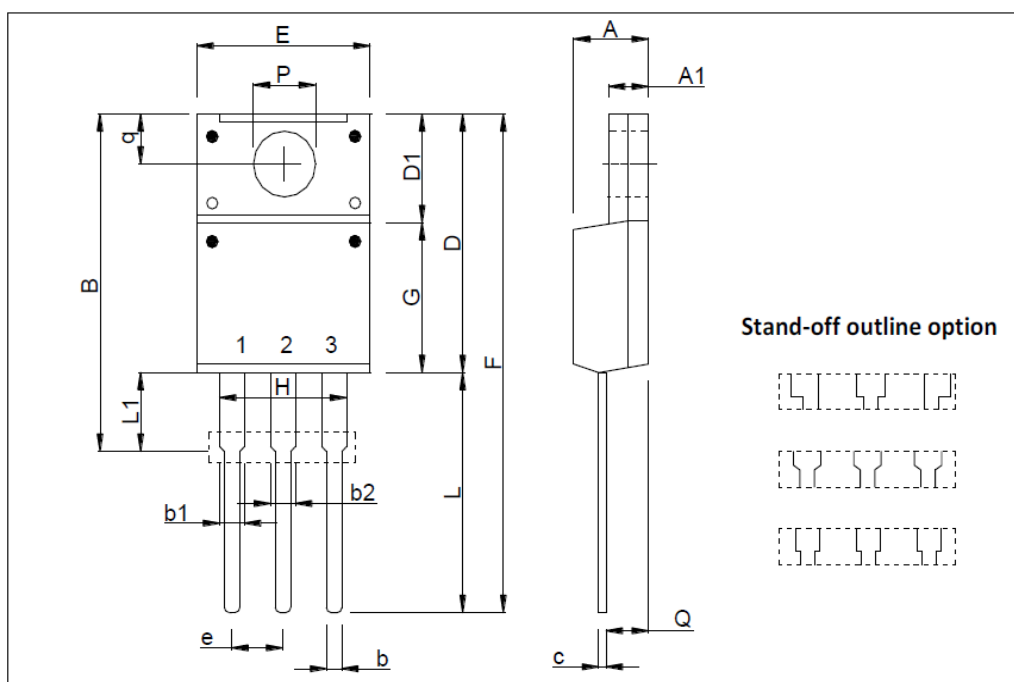
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Package Dimension

TO-220F (3-Lead) MECHANICAL DATA

Dimension	mm			Dimension	mm		
	Min.	Typ.	Max.		Min.	Typ.	Max.
A	4.4		4.93	e	2.34		2.74
A1	2.34		3.1	F	27.2		30.6
B	18.8		20	G	7.7		9.39
b	0.65		1	H	6.18		6.82
b1	0.93		1.6	L	12.7		14.2
b2	0.95		1.6	L1	2.88		3.7
c	0.4		1	P	2.98		3.7
D	13.5		16.4	Q	2.3		2.96
D1	6.48		6.95	q	3.1		3.8
E	9.8		10.4				

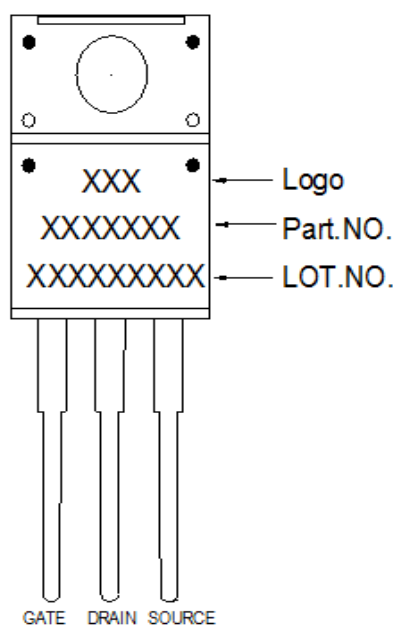


*因各家封装模具不同而外观略有所差异，不影响电性及Layout。

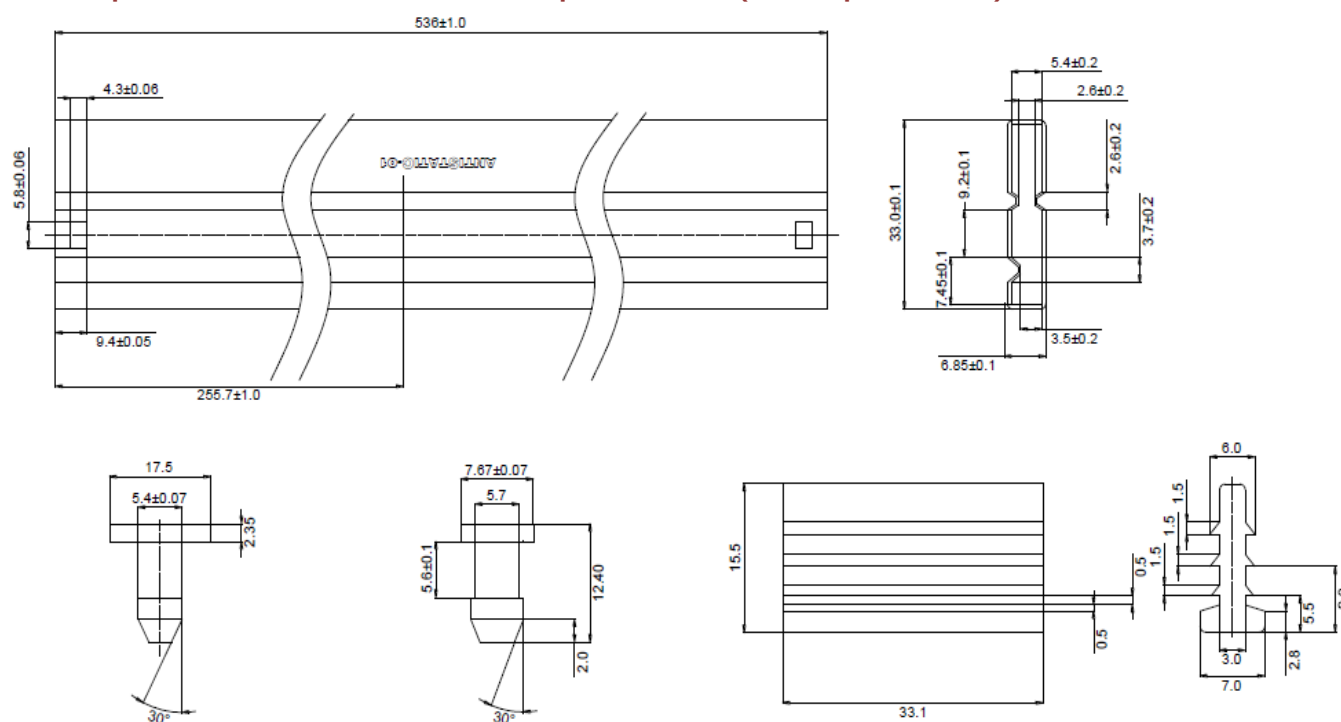
P1820HTFB

N-Channel Enhancement Mode MOSFET

A. Marking Information



B. Tape&Reel Information:50pcs/Tube(2000pcs/Box)

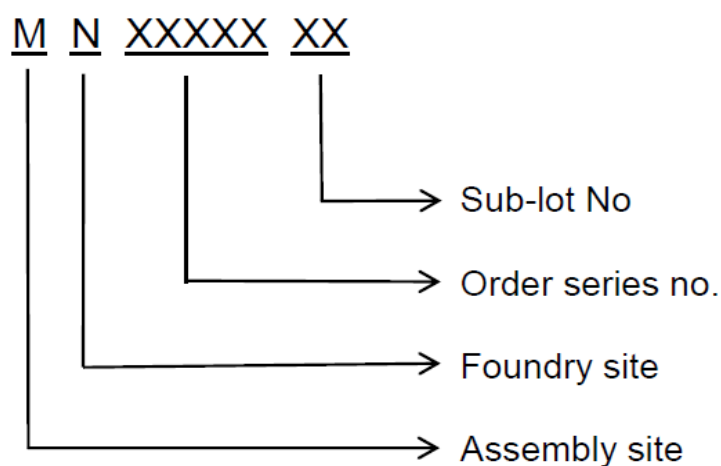


P1820HTFB

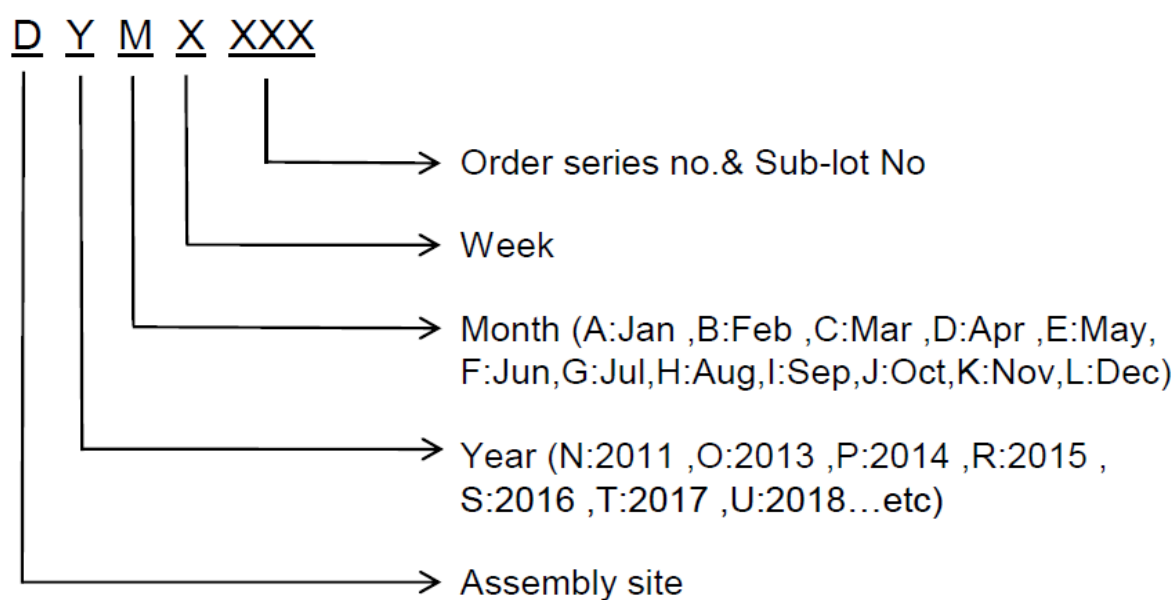
N-Channel Enhancement Mode MOSFET

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