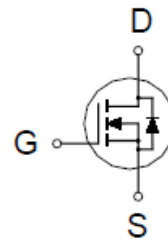
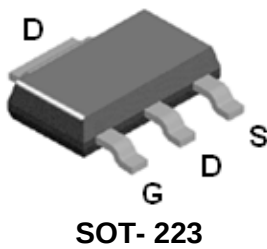


P1503BLH

N-Channel Enhancement Mode MOSFET

PRODUCT SUMMARY

$V_{(BR)DSS}$	$R_{DS(ON)}$	I_D
30V	15m Ω @ $V_{GS} = 10V$	12A



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

PARAMETERS/TEST CONDITIONS		SYMBOL	LIMITS	UNITS
Gate-Source Voltage		V_{GS}	± 20	V
Continuous Drain Current	$T_A = 25\text{ }^{\circ}\text{C}$	I_D	12	A
	$T_A = 100\text{ }^{\circ}\text{C}$		9.9	
Pulsed Drain Current ¹		I_{DM}	40	
Avalanche Current		I_{AS}	19	
Avalanche Energy	$L = 0.1\text{mH}$	E_{AS}	18	mJ
Power Dissipation ³	$T_A = 25\text{ }^{\circ}\text{C}$	P_D	3.9	W
	$T_A = 100\text{ }^{\circ}\text{C}$		2.5	
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	$t \leq 10\text{s}$	$R_{\theta JA}$		32	$^{\circ}\text{C} / \text{W}$
Junction-to-Ambient ²	Steady-State	$R_{\theta JA}$		60	

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 $T_A = 25^{\circ}\text{C}$.

³The Power dissipation is based on $R_{\theta JA}$ $t \leq 10\text{s}$ value.

P1503BLH

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	30			V
Gate Threshold Voltage	V _{GS(th)}	V _{DS} = V _{GS} , I _D = 250μA	1	1.5	3	
Gate-Body Leakage	I _{GSS}	V _{DS} = 0V, V _{GS} = ±20V			±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 = 125 °C			10	
Drain-Source On-State Resistance ¹	R _{DS(ON)}	V _{GS} = 4.5V, I _D = 11A		17.5	24	mΩ
		V _{GS} = 10V, I _D = 11A		12.5	15	
Forward Transconductance ¹	g _{fs}	V _{DS} = 5V, I _D = 11A		20		S
DYNAMIC						
Input Capacitance	C _{iss}	V _{GS} = 0V, V _{DS} = 15V, f = 1MHz		935		pF
Output Capacitance	C _{oss}			147		
Reverse Transfer Capacitance	C _{rss}			106		
Gate Resistance	R _g	V _{GS} = 0V, V _{DS} = 0V, f = 1MHz		1		Ω
Total Gate Charge ²	Q _{g(VGS=10V)}	V _{DS} = 15V, I _D = 11A		20		nC
	Q _{g(VGS=4.5V)}			11		
Gate-Source Charge ²	Q _{gs}			3		
Gate-Drain Charge ²	Q _{gd}			5		
Turn-On Delay Time ²	t _{d(on)}	V _{DS} = 15V, I _D ≅ 11A V _{GS} = 10V, R _{GS} = 6Ω		20		nS
Rise Time ²	t _r			11		
Turn-Off Delay Time ²	t _{d(off)}			36		
Fall Time ²	t _f			11		
SOURCE-DRAIN DIODE RATINGS AND CHARACTERISTICS (T _J = 25 °C)						
Continuous Current	I _S				3.5	A
Forward Voltage ¹	V _{SD}	I _F = 11A, V _{GS} = 0V			1.1	V
Reverse Recovery Time	t _{rr}	I _F = 11A, dI/dt = 100A / μS		15		nS
Reverse Recovery Charge	Q _{rr}			5		nC

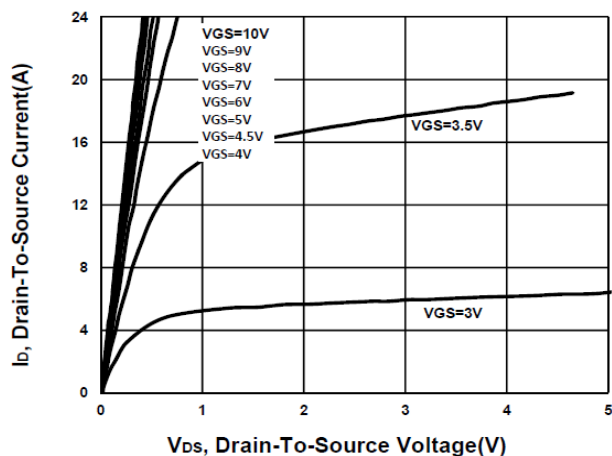
¹Pulse test : Pulse Width ≤ 300 μsec, Duty Cycle ≤ 2%.

²Independent of operating temperature.

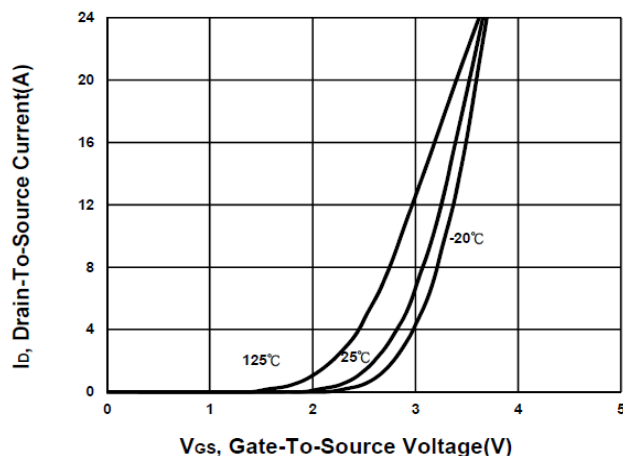
P1503BLH

N-Channel Enhancement Mode MOSFET

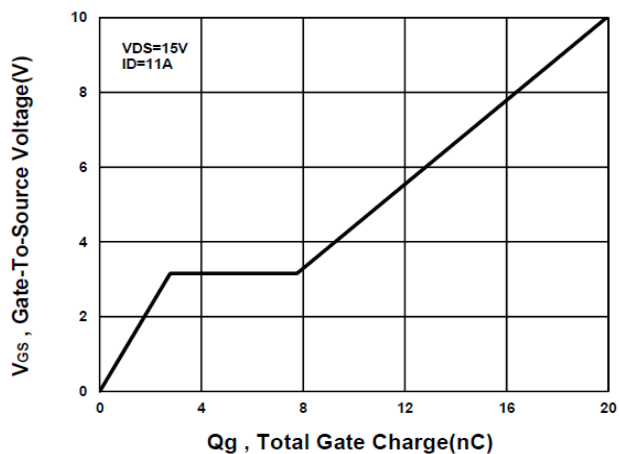
Output Characteristics



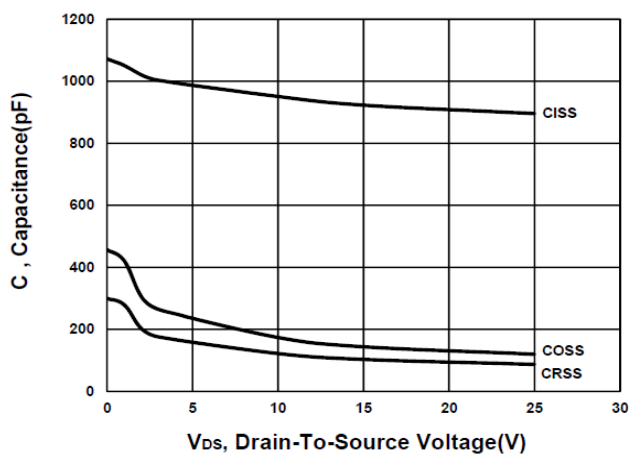
Transfer Characteristics



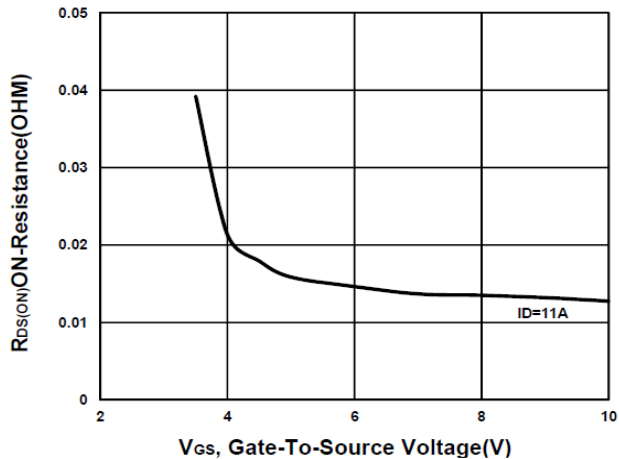
Gate charge Characteristics



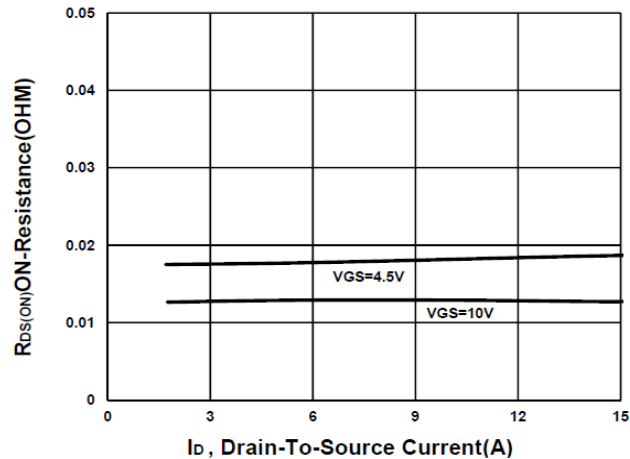
Capacitance Characteristic



On-Resistance VS Gate-To-Source



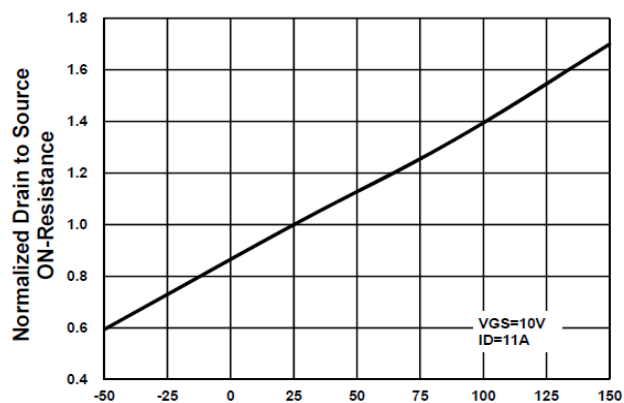
On-Resistance VS Drain Current



P1503BLH

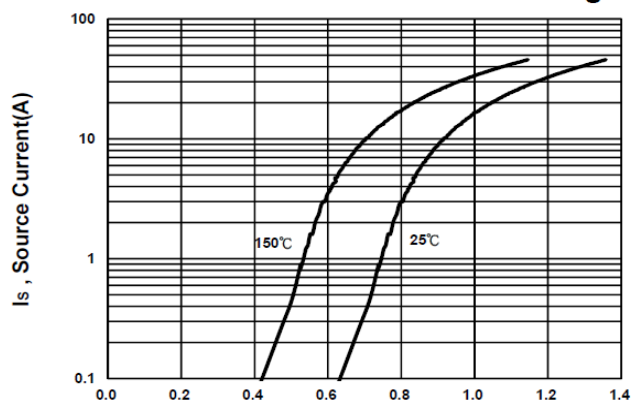
N-Channel Enhancement Mode MOSFET

On-Resistance VS Temperature



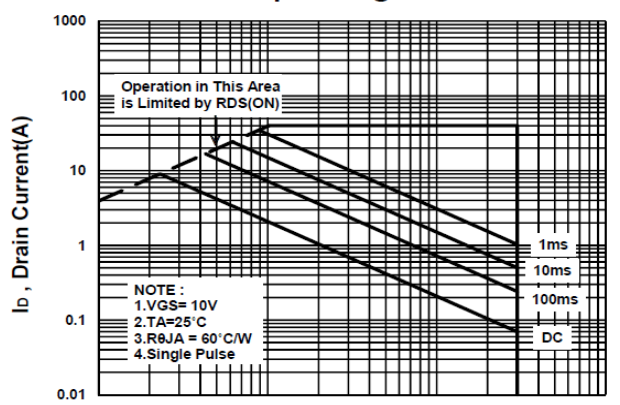
T_J , Junction Temperature($^{\circ}\text{C}$)

Source-Drain Diode Forward Voltage



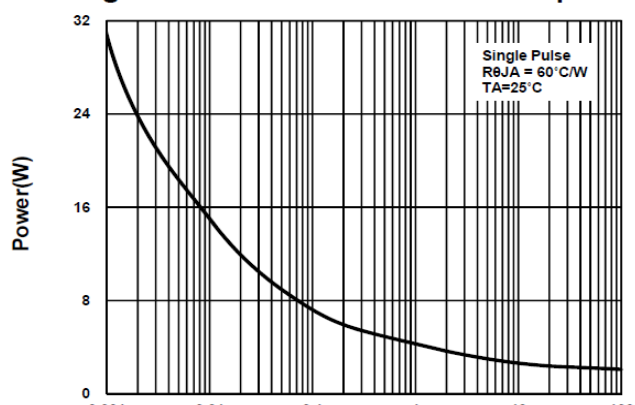
V_{SD} , Source-To-Drain Voltage(V)

Safe Operating Area



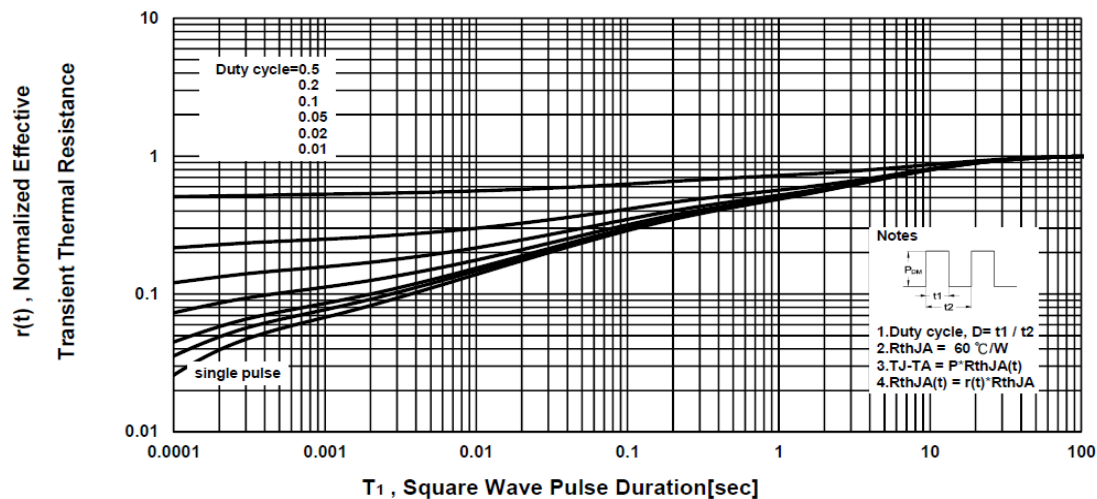
V_{DS} , Drain-To-Source Voltage(V)

Single Pulse Maximum Power Dissipation



Single Pulse Time(s)

Transient Thermal Response Curve

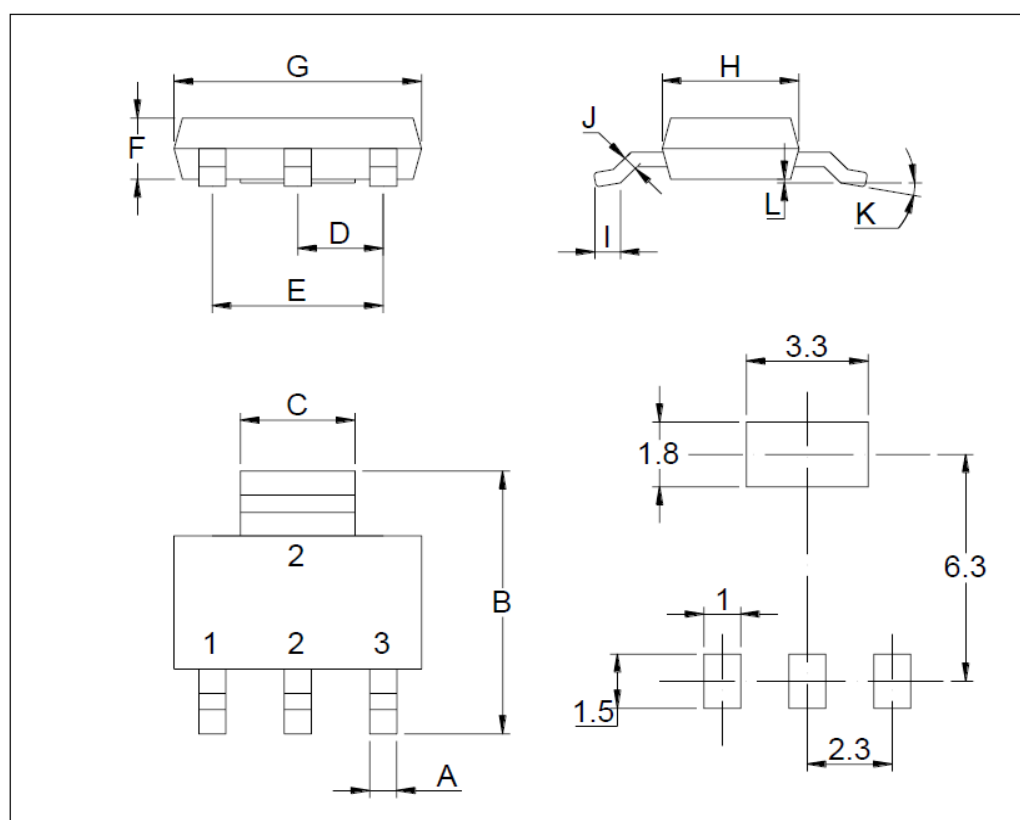


P1503BLH

N-Channel Enhancement Mode MOSFET

SOT-223 MECHANICAL DATA

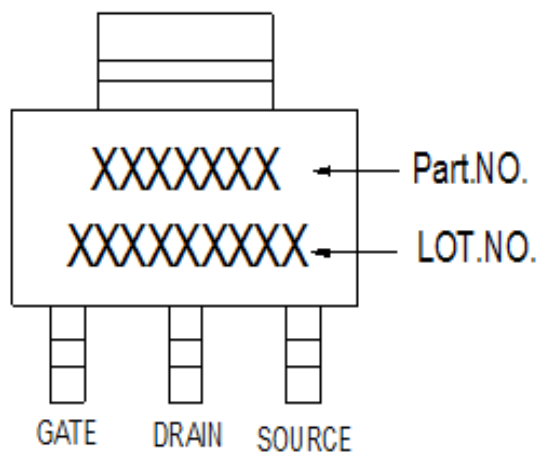
Dimension	mm			Dimension	mm		
	Min.	Typ.	Max.		Min.	Typ.	Max.
A	0.60	0.76	0.84	H	3.30	3.50	3.70
B	6.70	7.00	7.30	I	0.50	1.00	1.20
C	2.85	3.00	3.10	J	0.23	0.3	0.4
D	2.25	2.30	2.35	K	0°		10°
E	4.35	4.60	4.85	L	0	0.1	0.2
F	1.40	1.60	1.80	M			
G	6.30	6.50	6.80	N			



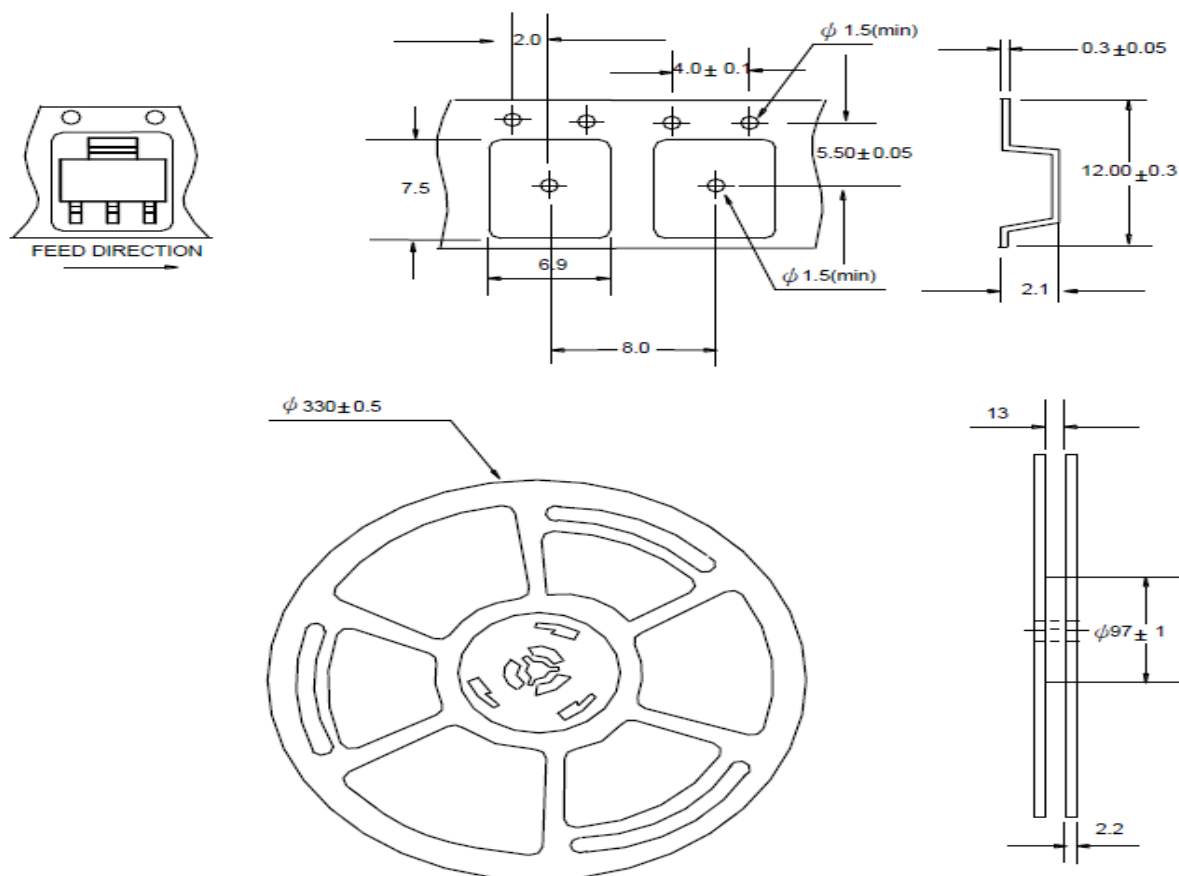
P1503BLH

N-Channel Enhancement Mode MOSFET

A. Marking Information



B. Tape&Reel Information:2500pcs/Reel

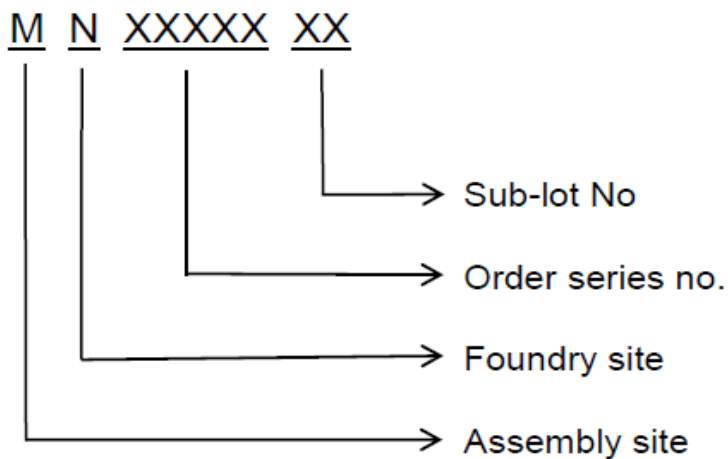


P1503BLH

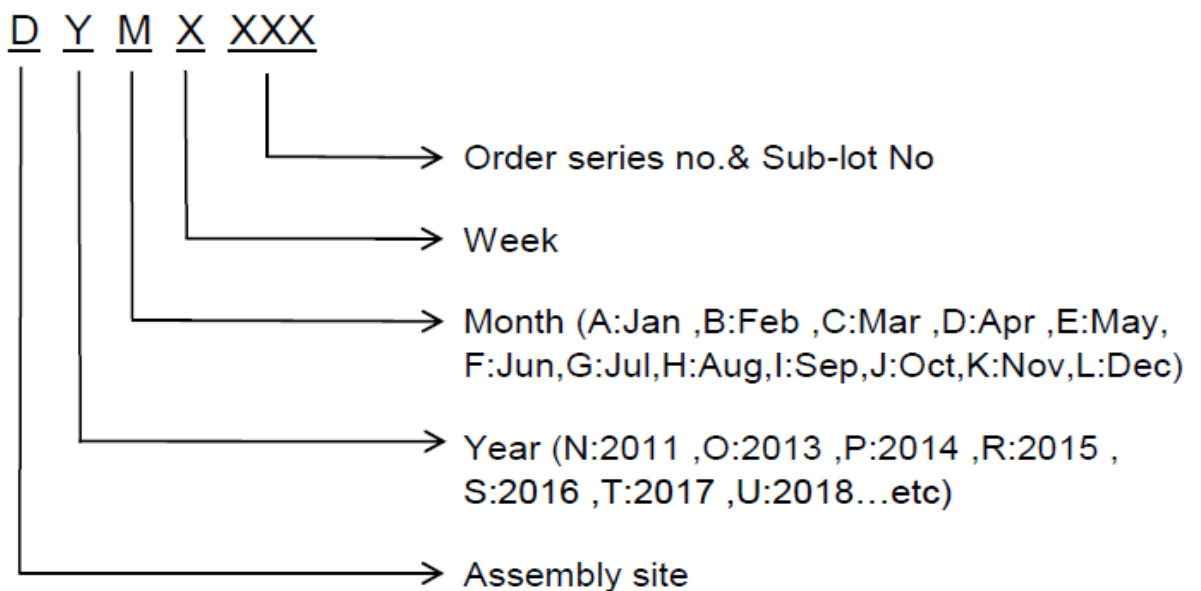
N-Channel Enhancement Mode MOSFET

C. Lot No.&Date Code rule

1.Lot No.



2.Date Code



P1503BLH

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"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