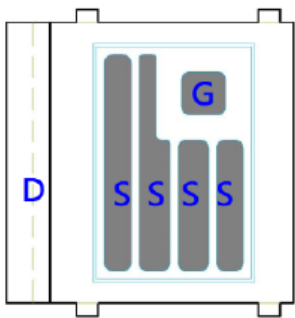


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PRODUCT SUMMARY

$V_{(BR)DSS}$	$R_{DS(ON)}$	I_D
30V	1.4m Ω @ $V_{GS} = 10V$	149A



Bottom View



Top View



Side View

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}	± 20	V
Continuous Drain Current ⁴	$T_C = 25\text{ }^\circ\text{C}$	I_D	149	A
	$T_C = 100\text{ }^\circ\text{C}$		94	
	$T_A = 25\text{ }^\circ\text{C}$		37	
	$T_A = 70\text{ }^\circ\text{C}$		29	
Pulsed Drain Current ¹		I_{DM}	200	
Avalanche Current		I_{AS}	51	
Avalanche Energy	$L = 0.1\text{mH}$	E_{AS}	130	mJ
Power Dissipation ³	$T_C = 25\text{ }^\circ\text{C}$	P_D	50	W
	$T_C = 100\text{ }^\circ\text{C}$		20	
	$T_A = 25\text{ }^\circ\text{C}$		3.1	
	$T_A = 70\text{ }^\circ\text{C}$		2	
Operating Junction & Storage Temperature Range		T_J, T_{stg}	-55 to 150	$^\circ\text{C}$

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THERMAL RESISTANCE RATINGS

THERMAL RESISTANCE		SYMBOL	TYPICAL	MAXIMUM	UNITS
Junction-to-Ambient ²	$t \leq 10s$	$R_{\theta JA}$		40	°C / W
Junction-to-Ambient ²	Steady-State	$R_{\theta JA}$		60	
Junction-to-Case	Top	$R_{\theta JC}$		2.5	

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 $T_A = 25^\circ C$.

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

⁴The maximum current rating is package limited.

ELECTRICAL CHARACTERISTICS ($T_J = 25^\circ C$, 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	1.6	2.3	
Gate-Body Leakage	I_{GSS}	$V_{DS} = 0V, V_{GS} = \pm 20V$			± 100	nA
Zero Gate Voltage Drain Current	I_{DSS}	$V_{DS} = 24V, V_{GS} = 0V$			1	μA
		$V_{DS} = 20V, V_{GS} = 0V, T_J = 55^\circ C$			10	
Drain-Source On-State Resistance ¹	$R_{DS(on)}$	$V_{GS} = 4.5V, I_D = 16A$		1.9	2.5	m Ω
		$V_{GS} = 10V, I_D = 20A$		1.1	1.4	
Forward Transconductance ¹	g_{fs}	$V_{DS} = 5V, I_D = 20A$		87		S
DYNAMIC						
Input Capacitance	C_{iss}	$V_{GS} = 0V, V_{DS} = 15V, f = 1MHz$		3322		pF
Output Capacitance	C_{oss}			1513		
Reverse Transfer Capacitance	C_{rss}			59		
Gate Resistance	R_g	$V_{GS} = 0V, V_{DS} = 0V, f = 1MHz$		0.8		Ω
Total Gate Charge ²	$Q_g(V_{GS}=10V)$	$V_{DS} = 15V, V_{GS} = 10V, I_D = 20A$		62.8		nC
	$Q_g(V_{GS}=4.5V)$			31.1		
Gate-Source Charge ²	Q_{gs}			8		
Gate-Drain Charge ²	Q_{gd}			13.7		
Turn-On Delay Time ²	$t_{d(on)}$		$V_{DS} = 15V, I_D \cong 20A, V_{GS} = 10V, R_{GEN} = 6\Omega$		26	
Rise Time ²	t_r			130		
Turn-Off Delay Time ²	$t_{d(off)}$			95		
Fall Time ²	t_f			148		

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SOURCE-DRAIN DIODE RATINGS AND CHARACTERISTICS (T_J = 25 °C)

Continuous Current ³	I _S			41	A
Forward Voltage ¹	V _{SD}	I _F = 20A, V _{GS} = 0V		1.2	V
Reverse Recovery Time	t _{rr}	I _F = 20A, di _F /dt = 100A / μS		60	nS
Reverse Recovery Charge	Q _{rr}			66	nC

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

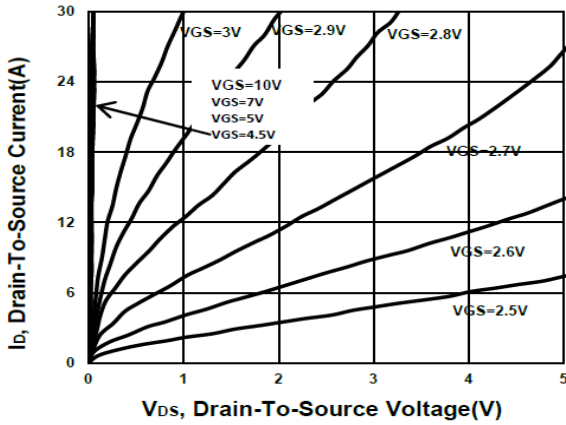
²Independent of operating temperature.

³The maximum current rating is package limited.

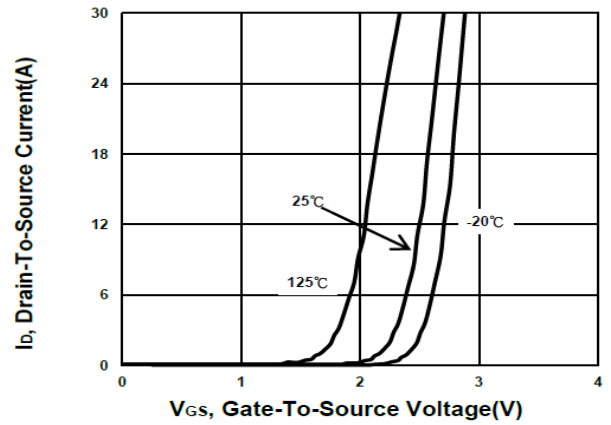
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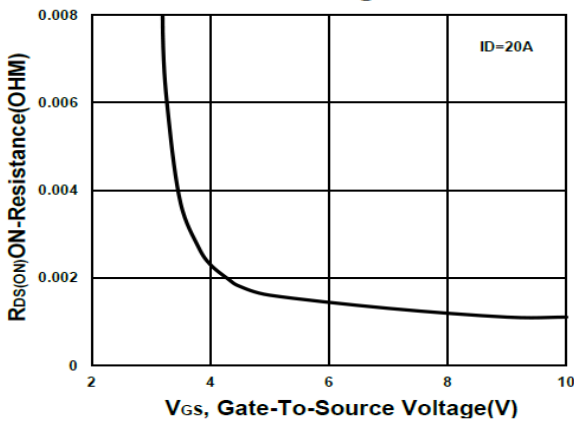
Output Characteristics



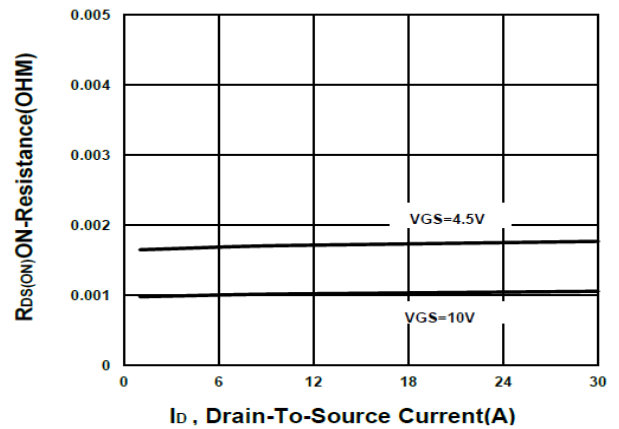
Transfer Characteristics



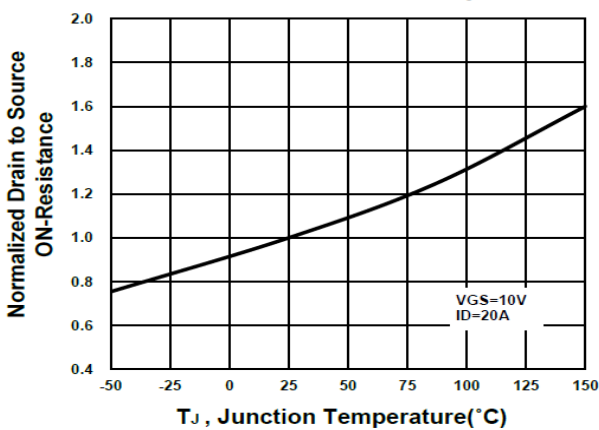
On-Resistance VS Gate-To-Source Voltage



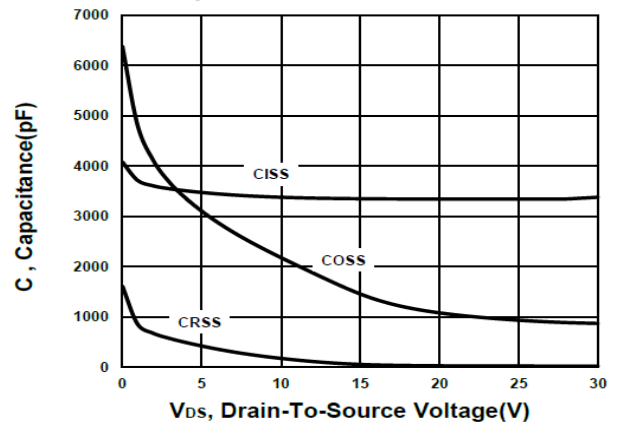
On-Resistance VS Drain Current



On-Resistance VS Temperature



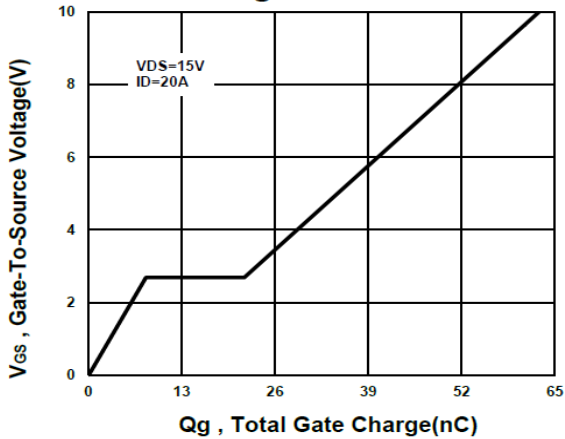
Capacitance Characteristic



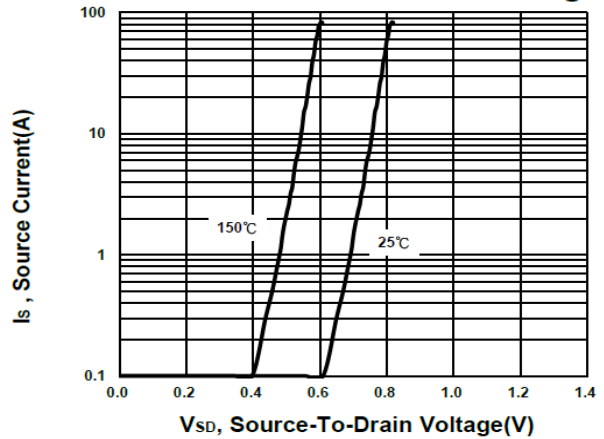
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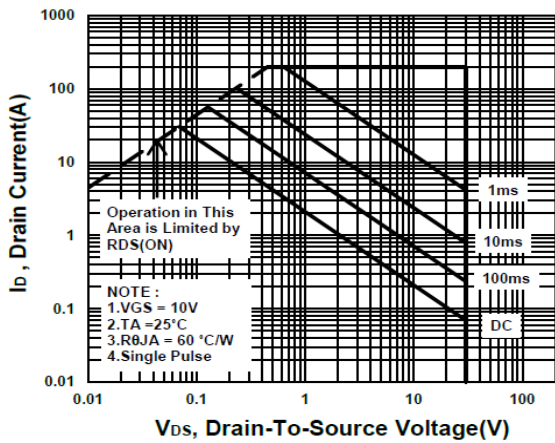
Gate charge Characteristics



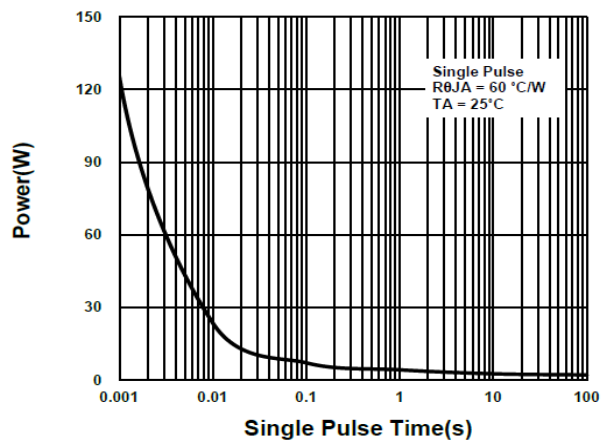
Source-Drain Diode Forward Voltage



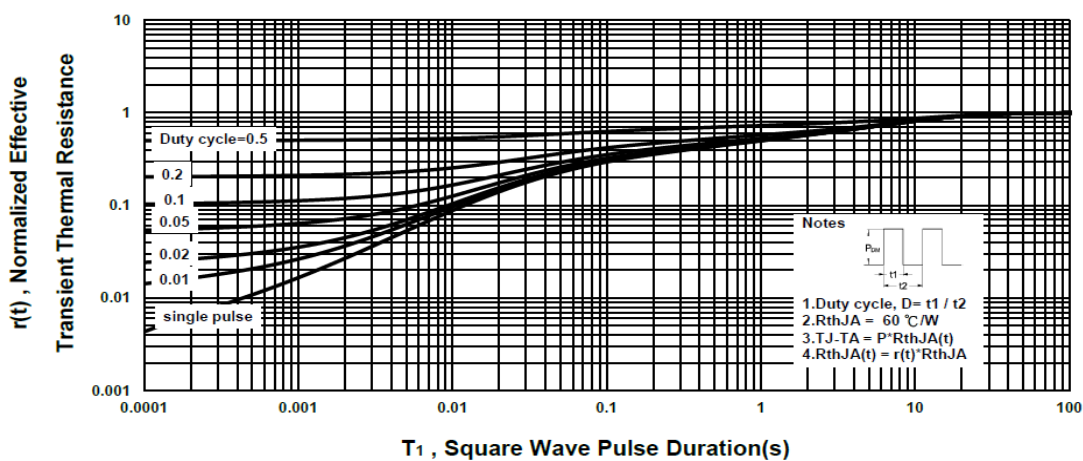
Safe Operating Area



Single Pulse Maximum Power Dissipation



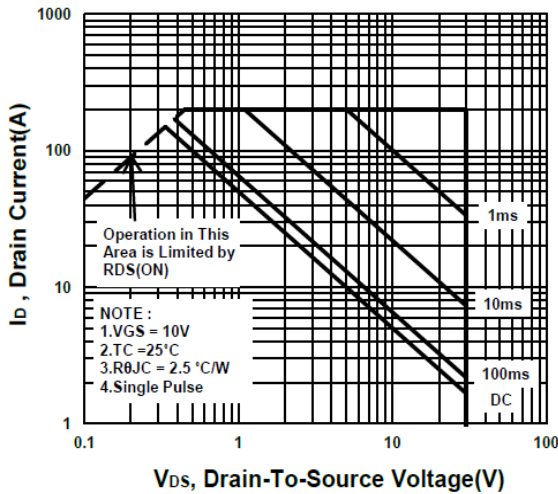
Transient Thermal Response Curve



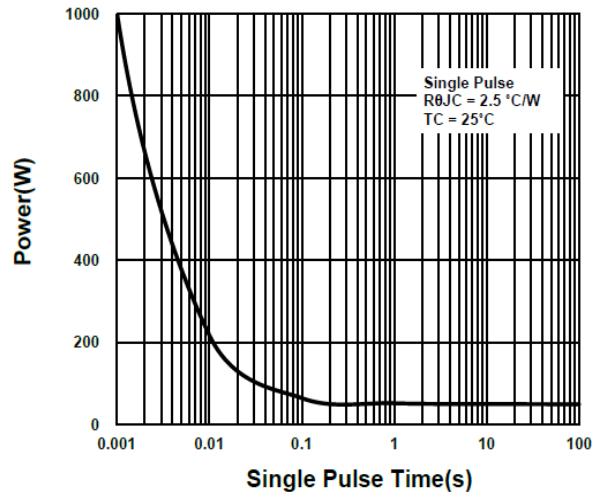
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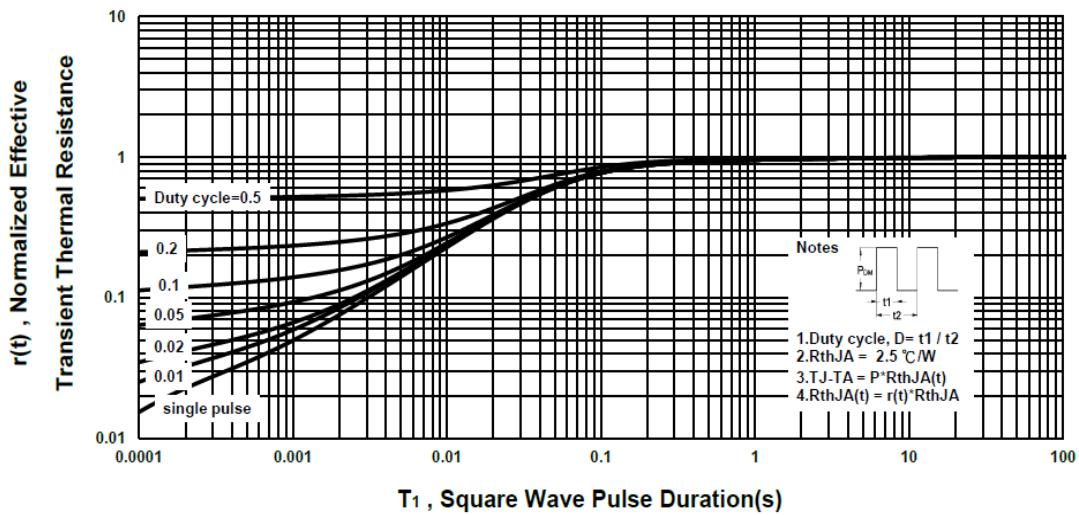
Safe Operating Area, (Top)



Single Pulse Maximum Power Dissipation, (Top)



Transient Thermal Response Curve, (Top)



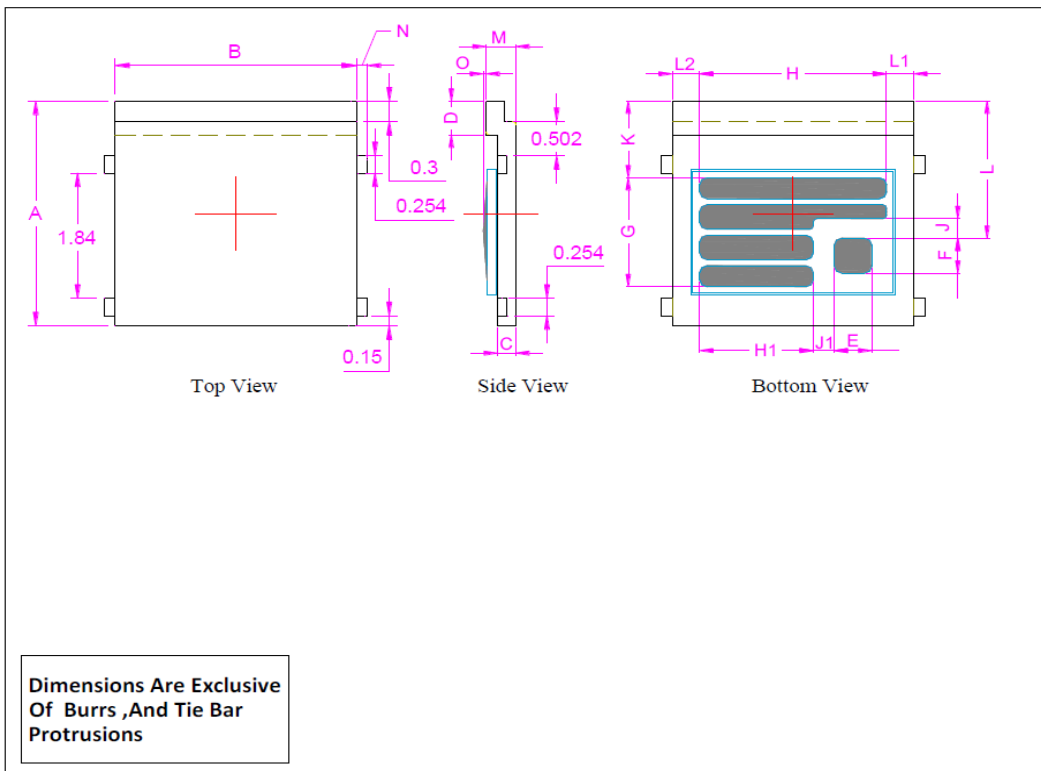
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Package Dimension

PowerFET 3x3 MECHANICAL DATA

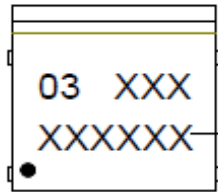
Dimension	mm			Dimension	mm		
	Min.	Typ.	Max.		Min.	Typ.	Max.
A	3.20	3.30	3.40	J	0.27	0.29	0.31
B	3.20	3.30	3.40	J1	0.27	0.29	0.31
C		0.254		K	1.03	1.13	1.23
D	0.45	0.50	0.55	L	1.91	2.01	2.11
E	0.49	0.51	0.53	L1	0.28	0.38	0.48
F	0.49	0.51	0.53	L2	0.28	0.38	0.48
G	1.58	1.60	1.62	M		0.40	0.45
H	2.53	2.55	2.57	N			0.15
H1	1.53	1.55	1.57	O	0.02		0.08



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A. Marking Information



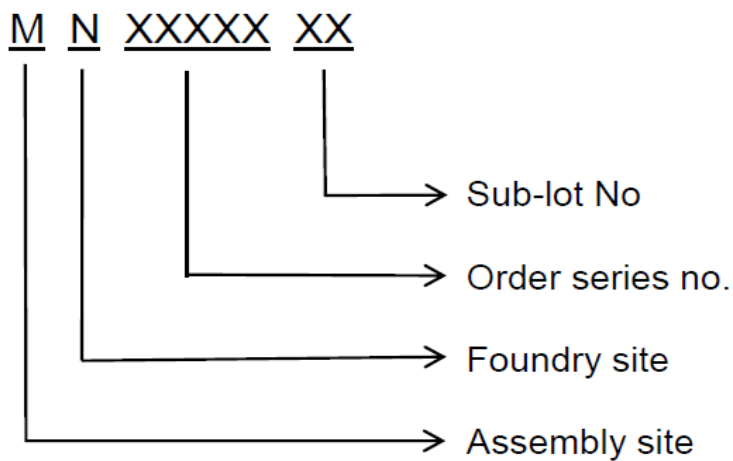
Lot.No(上下排相加共9碼)

03 : PR804BA33

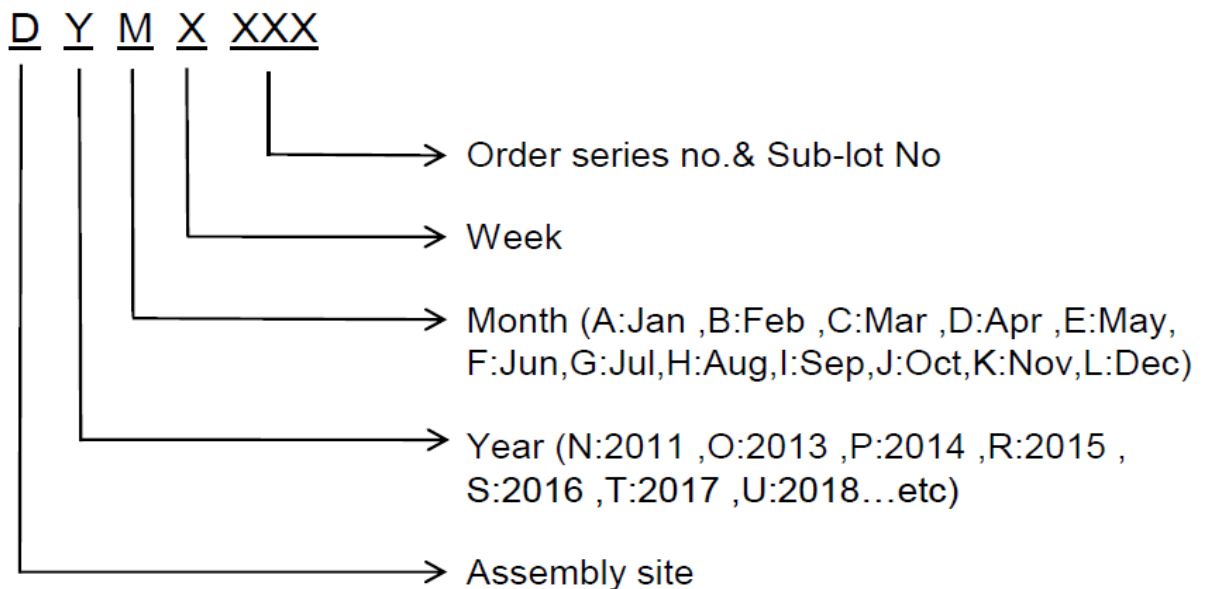
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C. Lot No.&Date Code rule

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