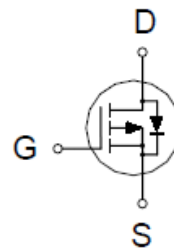
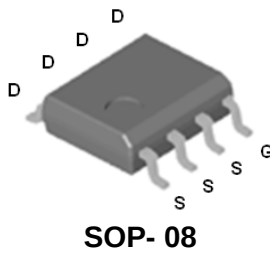


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PRODUCT SUMMARY

$V_{(BR)DSS}$	$R_{DS(ON)}$	I_D
-30V	20mΩ @ $V_{GS} = -10V$	-9A



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	$T_A = 25\text{ }^{\circ}\text{C}$	I_D	-9	A
	$T_A = 70\text{ }^{\circ}\text{C}$		-7	
Pulsed Drain Current ¹		I_{DM}	-40	
Avalanche Current		I_{AS}	-23.5	
Avalanche Energy	$L=0.1\text{mH}$	E_{AS}	27	mJ
Power Dissipation ³	$T_A = 25\text{ }^{\circ}\text{C}$	P_D	3	W
	$T_A = 70\text{ }^{\circ}\text{C}$		2	
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	$t \leq 10\text{s}$	$R_{\theta JA}$		40	$^{\circ}\text{C} / \text{W}$
Junction-to-Ambient ²	Steady-State	$R_{\theta JA}$		72	
Junction-to-Case	Steady-State	$R_{\theta JC}$		30	

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.

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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	$V_{(BR)DSS}$	$V_{GS} = 0V, I_D = -250\mu A$	-30			V
Gate Threshold Voltage	$V_{GS(th)}$	$V_{DS} = V_{GS}, I_D = -250\mu A$	-1	-1.5	-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
		$V_{DS} = -20V, V_{GS} = 0V, T_J = 55\text{ }^{\circ}C$			-10	
Drain-Source On-State Resistance ¹	$R_{DS(ON)}$	$V_{GS} = -4.5V, I_D = -9A$		24	35	m Ω
		$V_{GS} = -10V, I_D = -9A$		17	20	
Forward Transconductance ¹	g_{fs}	$V_{DS} = -5V, I_D = -9A$		20		S
DYNAMIC						
Input Capacitance	C_{iss}	$V_{GS} = 0V, V_{DS} = -15V, f = 1MHz$		1090		pF
Output Capacitance	C_{oss}			150		
Reverse Transfer Capacitance	C_{rss}			120		
Gate Resistance	R_g	$V_{GS} = 0V, V_{DS} = 0V, f = 1MHz$		8		Ω
Total Gate Charge ²	Q_g	$V_{DS} = -15V$ $I_D = -9A, V_{GS} = -10V$		21		nC
Gate-Source Charge ²	Q_{gs}			2.9		
Gate-Drain Charge ²	Q_{gd}			6		
Turn-On Delay Time ²	$t_{d(on)}$	$V_{DD} = -15V, I_D \cong -9A,$ $V_{GS} = -10V, R_{GEN}=6\Omega$		22		nS
Rise Time ²	t_r			17		
Turn-Off Delay Time ²	$t_{d(off)}$			48		
Fall Time ²	t_f			25		
SOURCE-DRAIN DIODE RATINGS AND CHARACTERISTICS ($T_J = 25\text{ }^{\circ}C$)						
Continuous Current	I_S				-2.3	A
Forward Voltage ¹	V_{SD}	$I_F = -9A, V_{GS} = 0V$			-1.3	V
Reverse Recovery Time	t_{rr}	$I_F = -9A, dI/dt = 100A / \mu S$		11		nS
Reverse Recovery Charge	Q_{rr}			3		nC

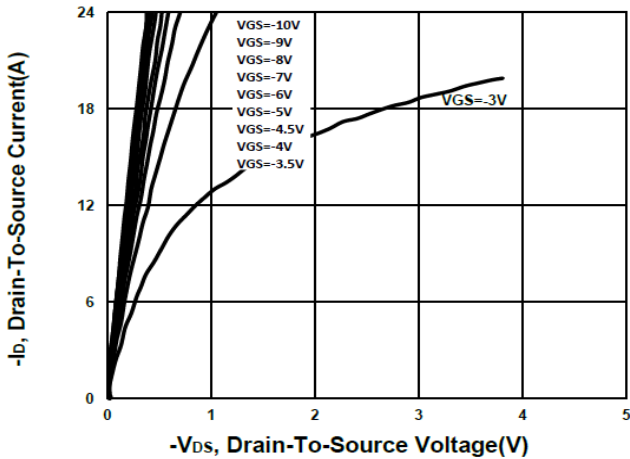
¹Pulse test : Pulse Width $\leq 300\text{ }\mu\text{sec}$, Duty Cycle $\leq 2\%$.

²Independent of operating temperature.

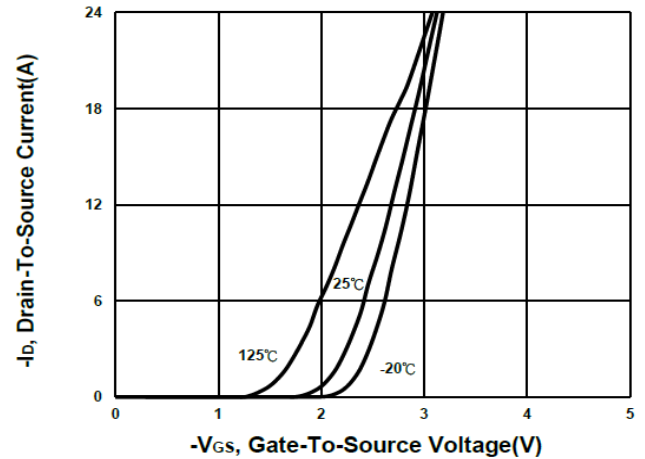
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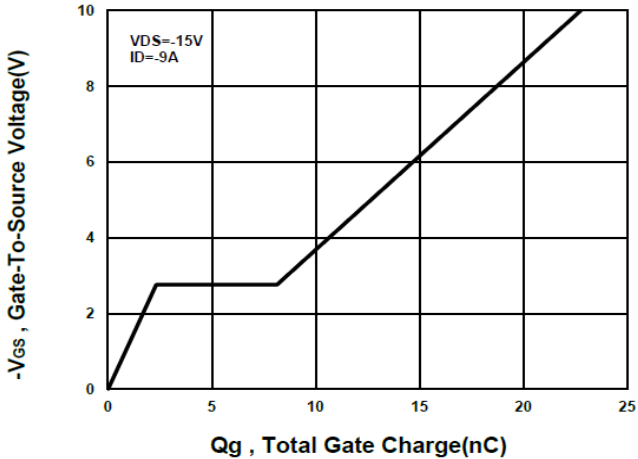
Output Characteristics



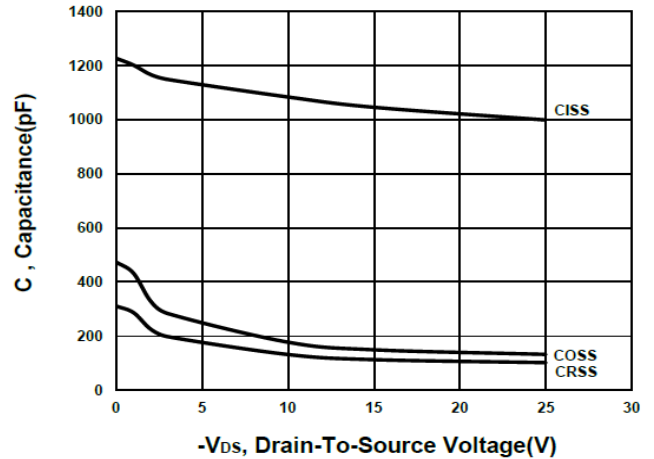
Transfer Characteristics



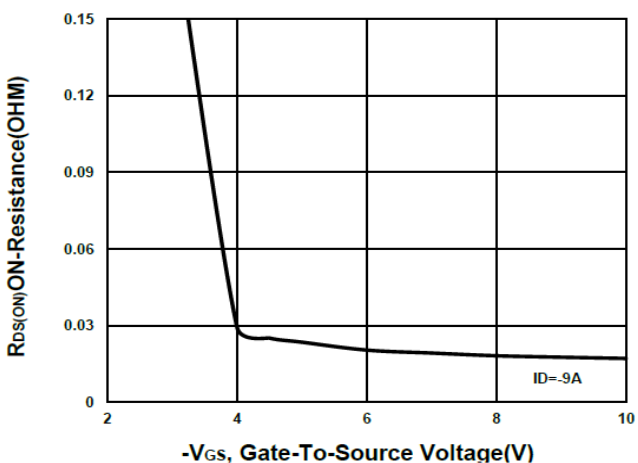
Gate charge Characteristics



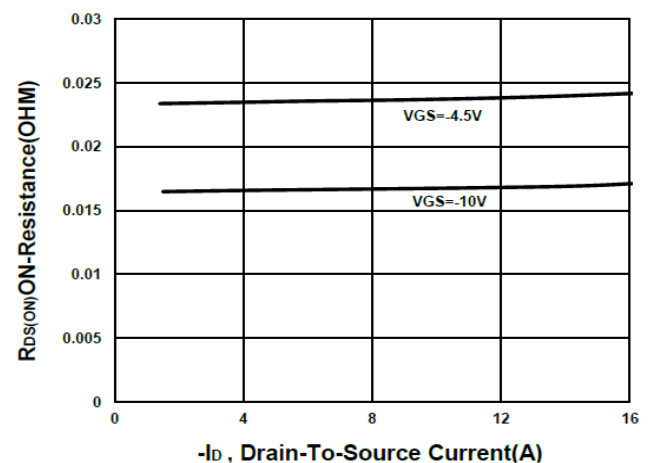
Capacitance Characteristic



On-Resistance VS Gate-To-Source



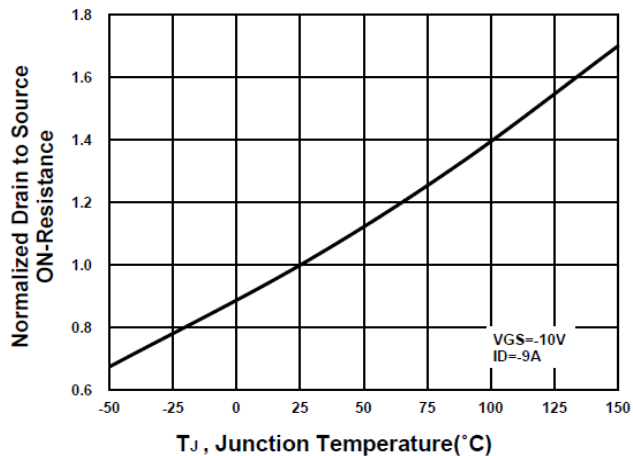
On-Resistance VS Drain Current



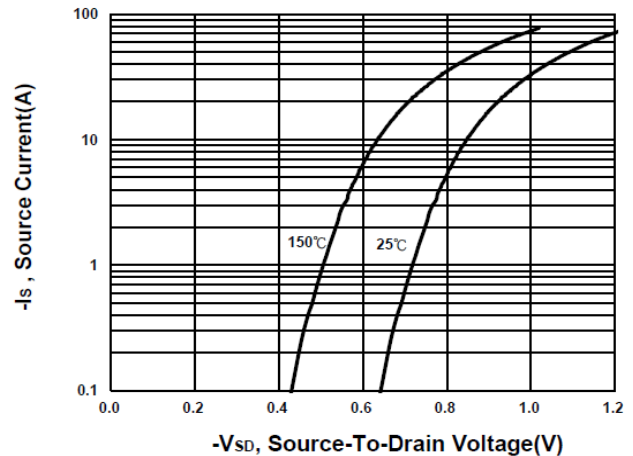
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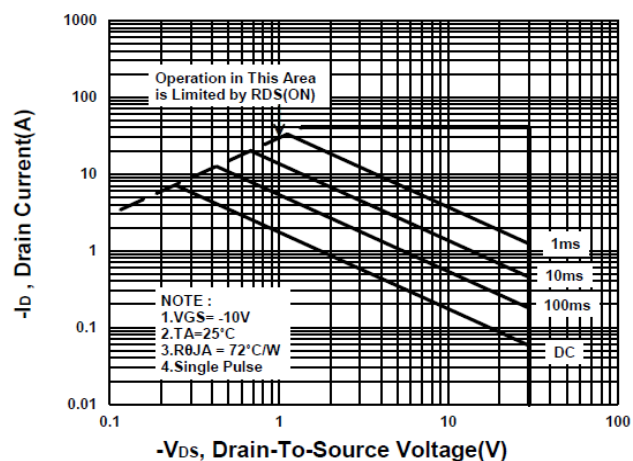
On-Resistance VS Temperature



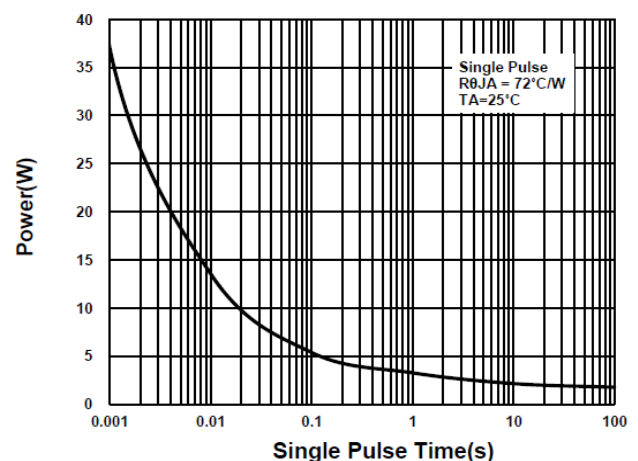
Source-Drain Diode Forward Voltage



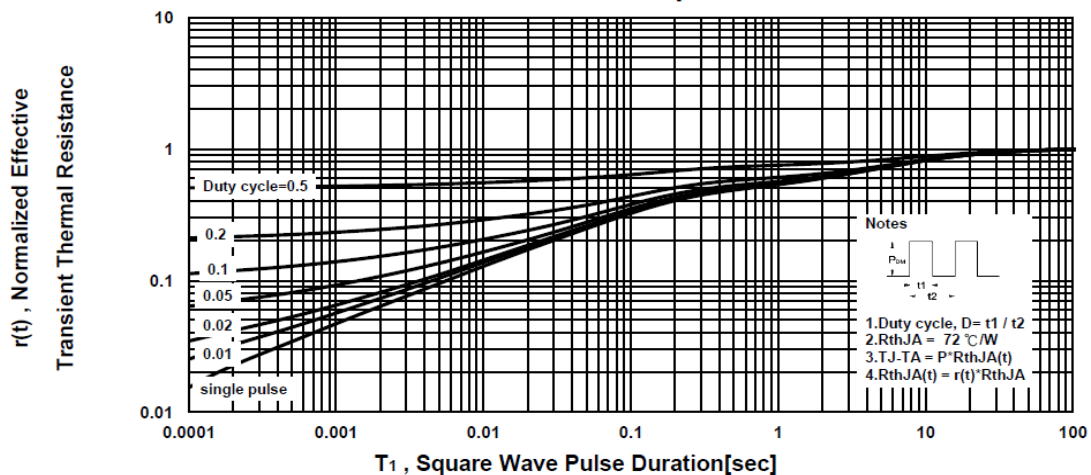
Safe Operating Area



Single Pulse Maximum Power Dissipation



Transient Thermal Response Curve



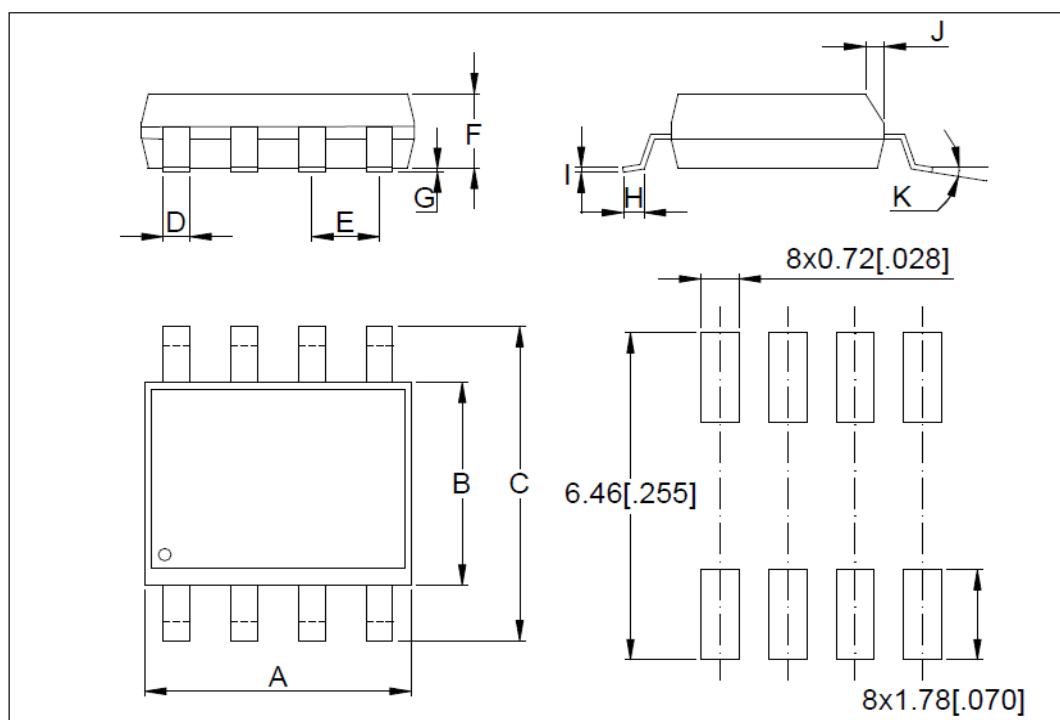
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Package Dimension

SOP-8 MECHANICAL DATA

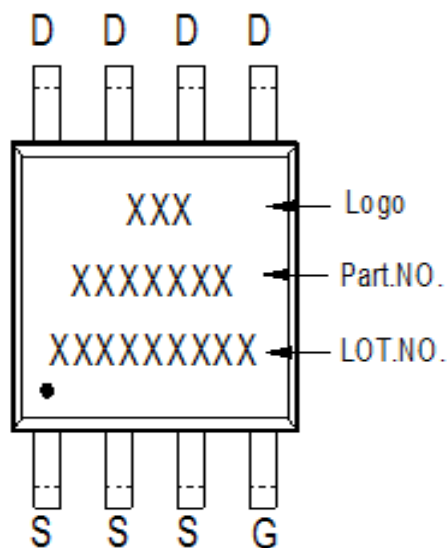
Dimension	mm			Dimension	mm		
	Min.	Typ.	Max.		Min.	Typ.	Max.
A	4.8	4.9	5.0	H	0.4	0.6	0.93
B	3.8	3.9	4.0	I	0.19	0.21	0.25
C	5.79	6.0	6.2	J	0.25	0.375	0.5
D	0.33	0.4	0.51	K	0°	3°	18°
E	1.25	1.27	1.29				
F	1.1	1.3	1.65				
G	0.05	0.15	0.25				



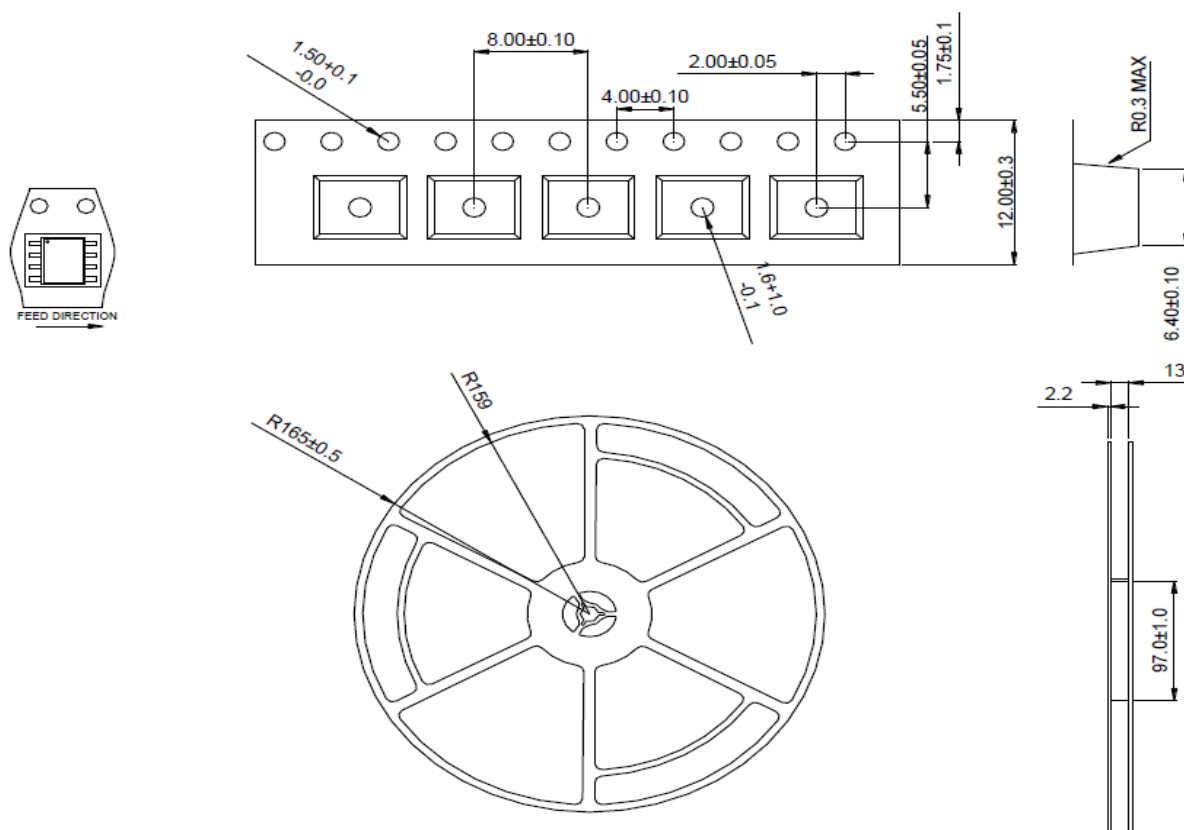
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A. Marking Information



B. Tape & Reel Information: 2500pcs/Reel



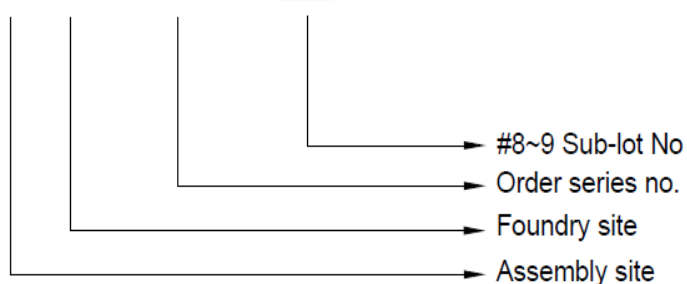
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C. Lot.No. & Date Code rule

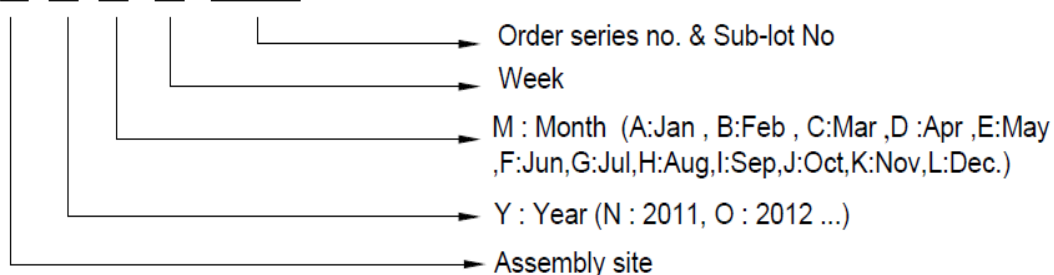
1.LOT.NO.

M N 15M21 03



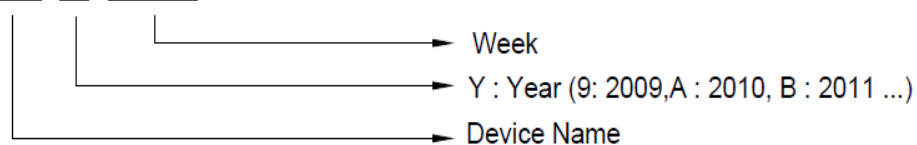
2.Date Code

D Y M X XXX



3.Date Code (for Small package)

XX Y WW



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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	Great Power	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	Pb Free label	 Diameter: 1 cm bottom color: Green Font color: Black Font style: Arial
11	Halogen Free label	 Diameter: 1 cm bottom color: Green Font color: Black Font style: Arial
12	Scan info	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