

Features

- Input Voltage up to 24V
- MOSFET Turn on Resistor RSS(ON) =12mohm(Max)@Vgs=4.5V
- Drain to Drain MOSFET Module
- With ESD Protection
- Continuous Current=9.4A
- Green Product (RoHS, Lead-Free, Halogen-Free Compliant)

General Description

The GS95A2CS-R drain to drain connected MOSFET module provides an integrated solution with small dimension for battery pack of Mobile phone and electronic bracelet application.

Applications

- Mobile phone
- Electronic Bracelet

Typical Application

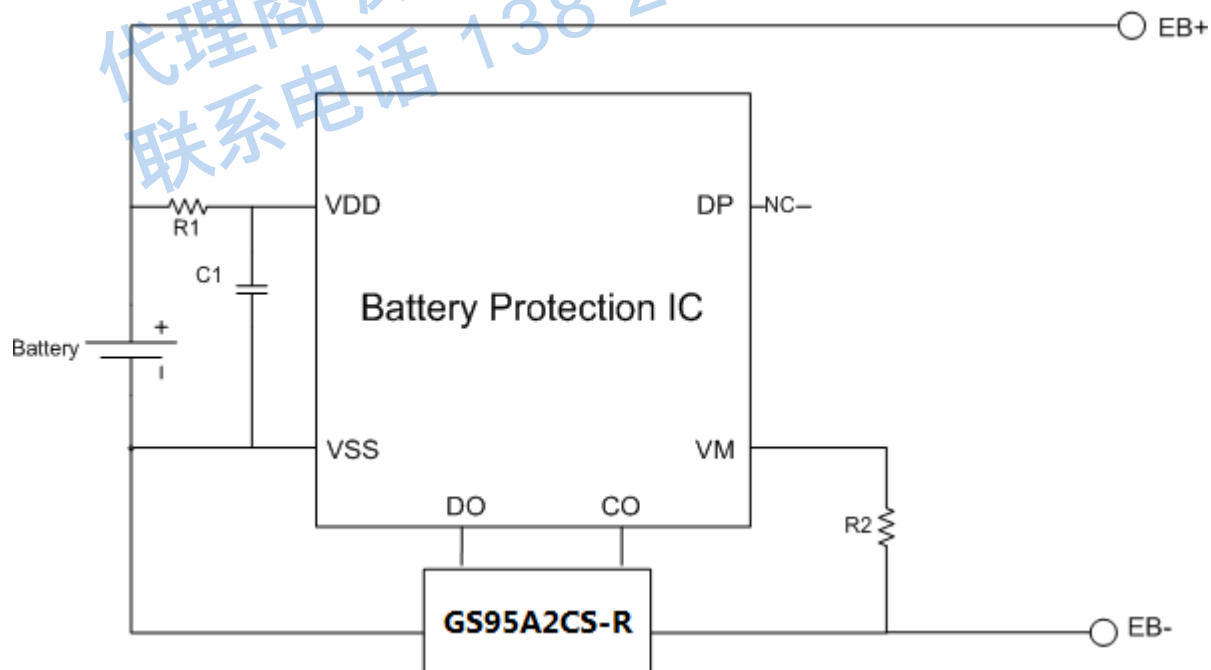


Figure 1 Application of GS95A2CS-R used in battery pack

Function Block Diagram

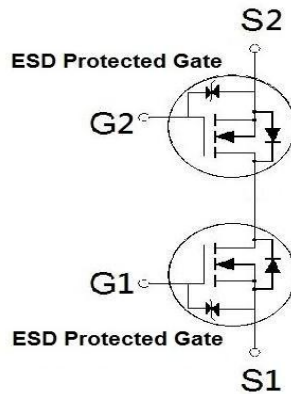


Figure 2 Function Block Diagram

Pin Configuration

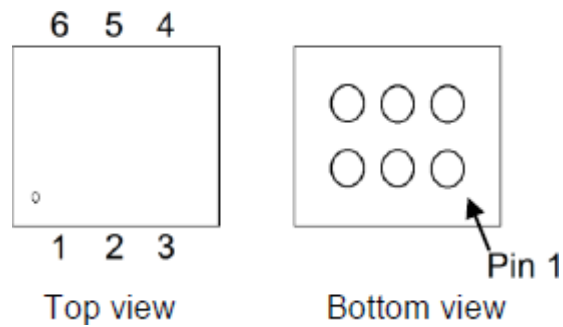


Figure 3 WLCSP 1.81x2.7

Pin Descriptions

No.	Name	I/O type	Description
1	S1	I/O	Source1
2	G1	I	Gate1
3	S1	I/O	Source1
4	S2	I/O	Source2
5	G2	I	Gate2
6	S2	I/O	Source2

Absolute Maximum Ratings ($T_A=25^{\circ}\text{C}$ Unless Otherwise Noted)

PARAMETER / TEST CONDITIONS	SYMBOL	LIMITS	UNITS
Source-Source Voltage	V_{SSS}	24	V
Gate-Source Voltage	V_{GSS}	± 12	V
Continuous Source Current	I_S	9.4	A
Pulsed Source Current ¹	I_{SP}	50	A
Total Dissipation ²	P_T	1.7	W
Thermal Resistance ²	$R_{\theta JA}$	65	$^{\circ}\text{C} / \text{W}$
Operating Junction & Storage Temperature Range	T_J & T_{stg}	-55~150	$^{\circ}\text{C}$

¹ $PW \leq 10\mu\text{s}$, duty cycle $\leq 1\%$.

²When mounted on 1in^2 FR-4 board.

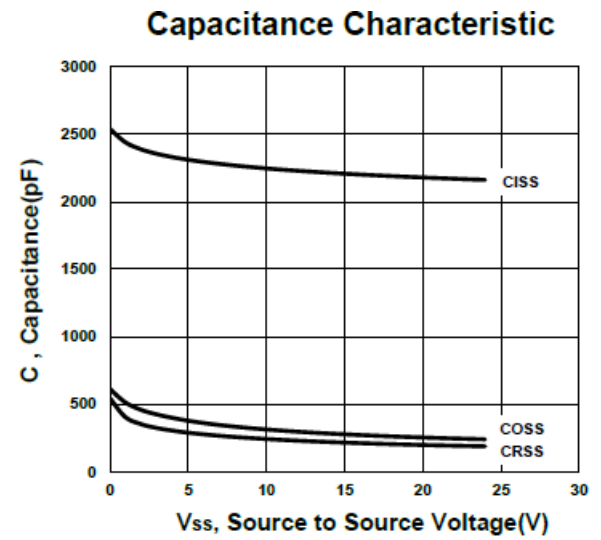
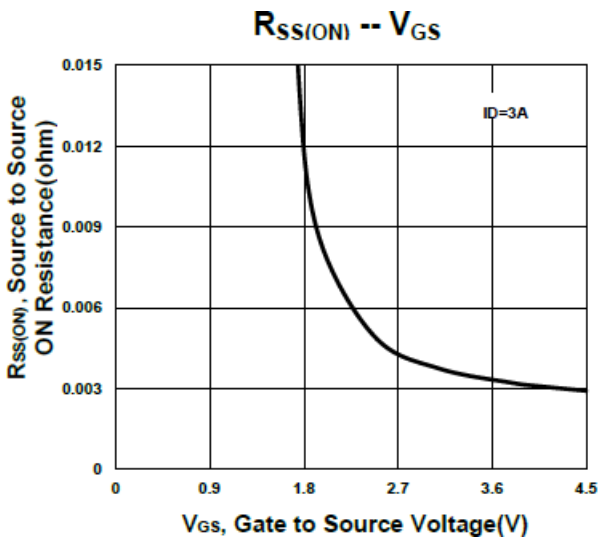
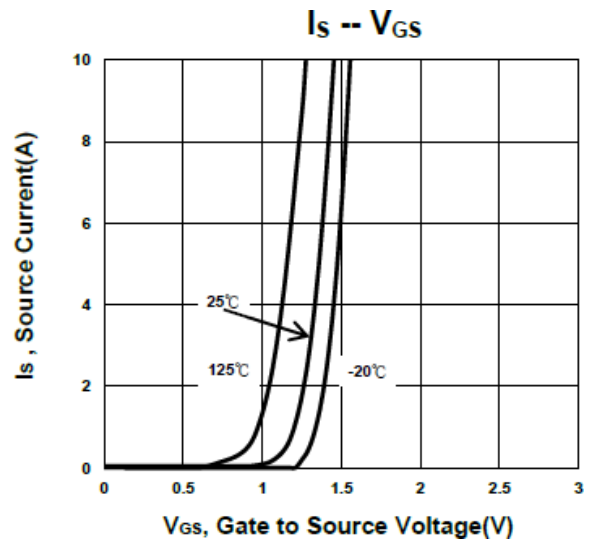
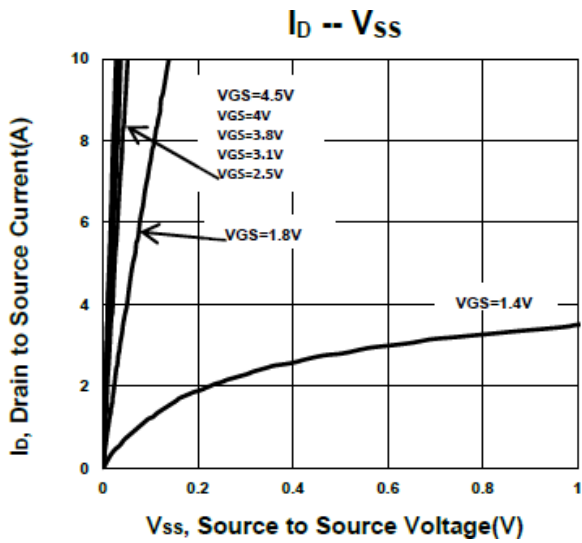
Electrical Characteristics ($T_J=25^{\circ}\text{C}$ Unless Otherwise Noted)

PARAMETER	SYMBOL	TEST CONDITIONS	LIMITS			UNITS
			MIN	TYP	MAX	
STATIC						
Source-Source Breakdown Voltage	$V_{(BR)SSS}$	$V_{GS} = 0\text{V}$, $I_S = 1\text{mA}$	24			V
Gate Threshold Voltage	$V_{GS(th)}$	$V_{SS} = 10\text{V}$, $I_S = 1\text{mA}$	0.6	0.95	1.3	
Gate-Source Leakage	I_{GSS}	$V_{SS} = 0\text{V}$, $V_{GS} = \pm 8\text{V}$			± 10	μA
		$V_{SS} = 0\text{V}$, $V_{GS} = \pm 5\text{V}$			± 2	
Zero Gate Voltage Source Current	I_{SSS}	$V_{SS} = 20\text{V}$, $V_{GS} = 0\text{V}$			1	μA
Drain-Source On-State Resistance ¹	$R_{SS(ON)}$	$V_{GS} = 4.5\text{V}$, $I_S = 3\text{A}$	5.7	8.3	11.2	m Ω
		$V_{GS} = 4\text{V}$, $I_S = 3\text{A}$	5.8	8.4	12	
		$V_{GS} = 3.8\text{V}$, $I_S = 3\text{A}$	5.9	8.8	12.2	
		$V_{GS} = 3.1\text{V}$, $I_S = 3\text{A}$	6.3	9.7	14.7	
		$V_{GS} = 2.5\text{V}$, $I_S = 3\text{A}$	7.0	11.4	22.5	
Forward Transfer Admittance ¹	yfs	$V_{SS} = 5\text{V}$, $I_S = 3\text{A}$		30		S

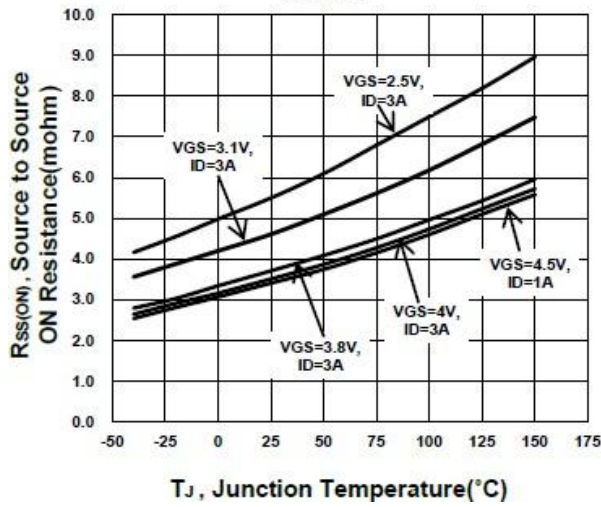
DYNAMIC						
Input Capacitance	C_{ISS}			2287		pF
Output Capacitance	C_{OSS}	$V_{GS} = 0V, V_{DS} = 12V, f = 1MHz$		306		
Reverse Transfer Capacitance	C_{RSS}			235		
Total Gate Charge ²	Q_g		$V_{SS} = 12V, V_{GS} = 4.5V, I_S = 5A$		24	nC
Turn-On Delay Time ²	$t_{d(on)}$	$V_{SS} = 12V, I_S \cong 5A, V_{GS} = 4.5V$		39	nS	
Rise Time ²	t_r			62		
Turn-Off Delay Time ²	$t_{d(off)}$			68		
Fall Time ²	T_{f0}			41		
SOURCE-DRAIN DIODE RATINGS AND CHARACTERISTICS ($T_J = 25\text{ }^\circ\text{C}$)						
Forward Source-Source Voltage ¹	V_F	$I_S = 5A, V_{GS} = 0V$		0.6	1.2	V

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

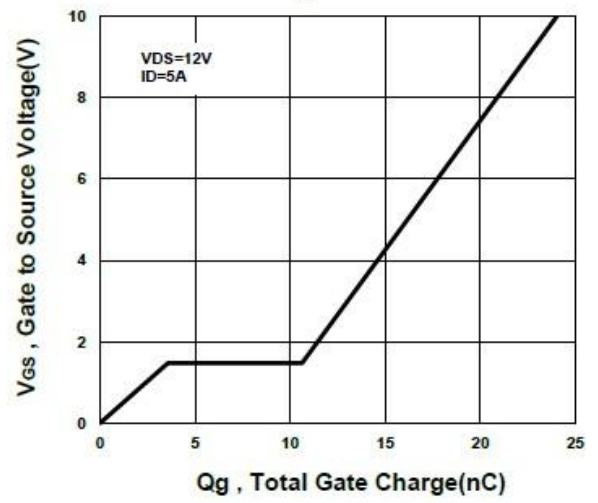
²Independent of operating temperature.



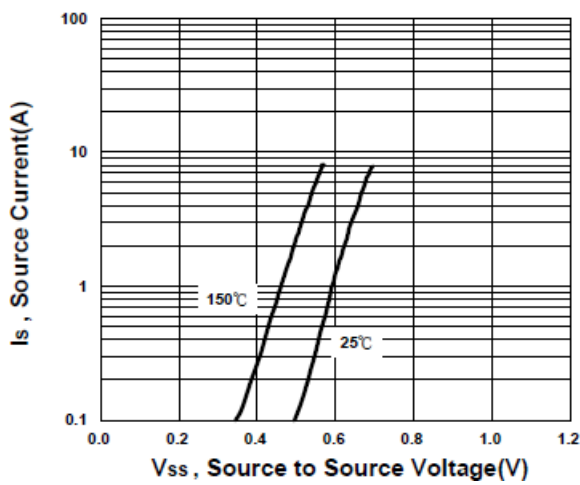
$R_{SS(ON)} -- T_a$



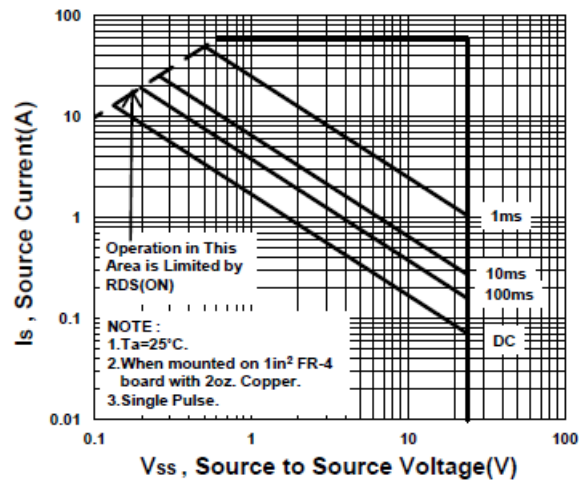
Gate charge Characteristics



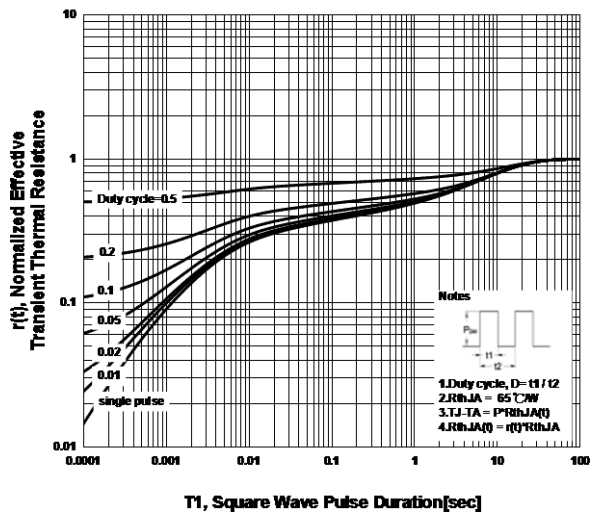
$I_S -- V_F$



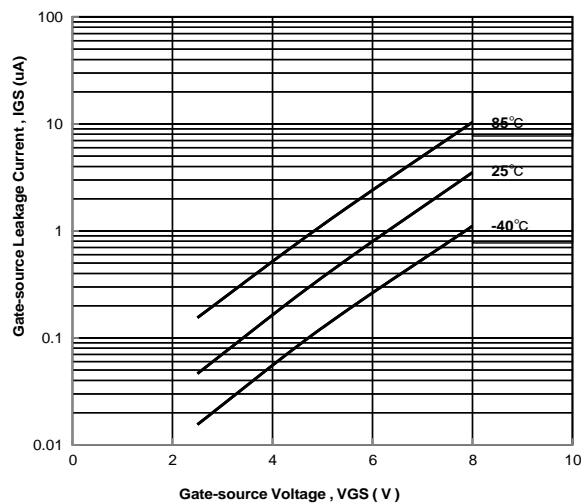
Safe Operating Area



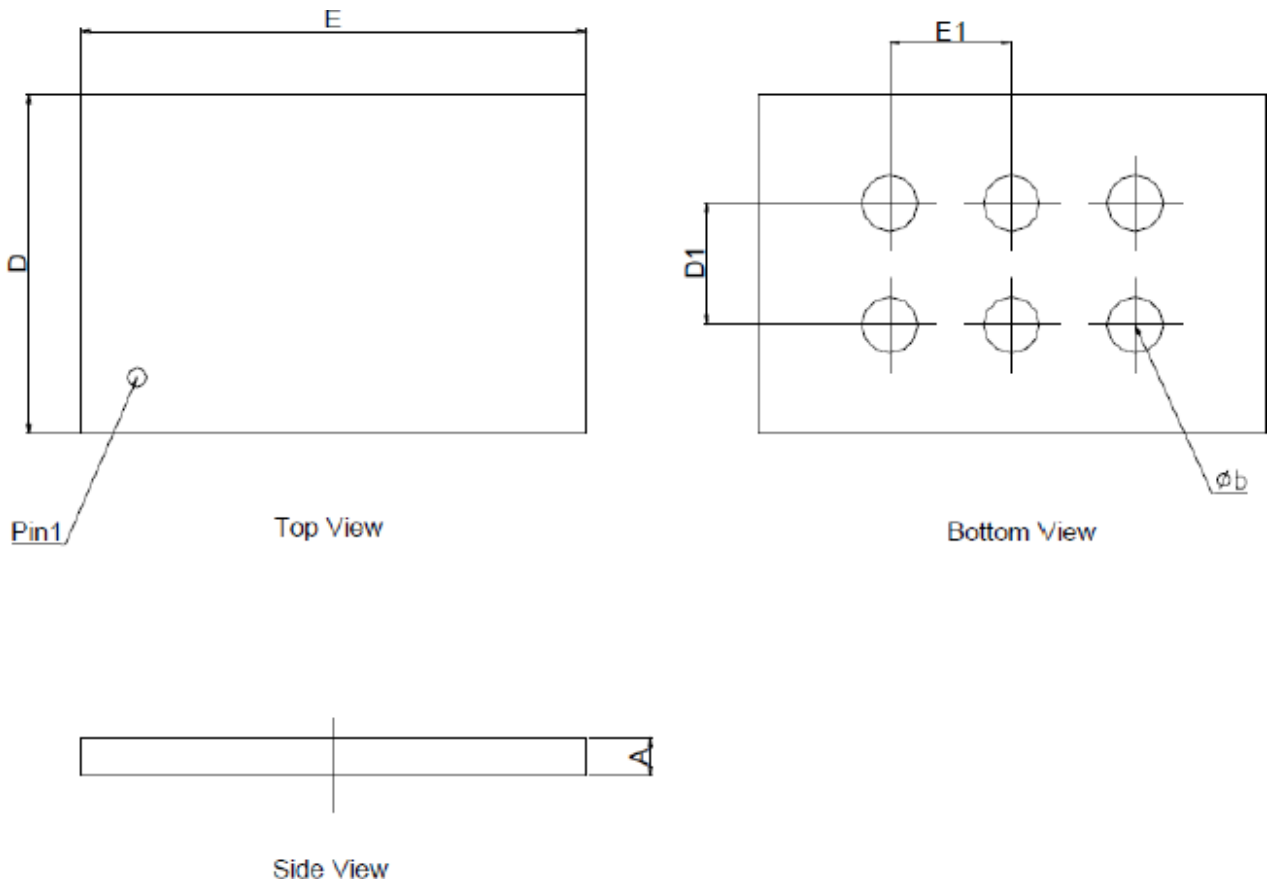
Transient Thermal Response Curve



IGS - VGS



Package Dimensions, WLCSP 1.81x2.7

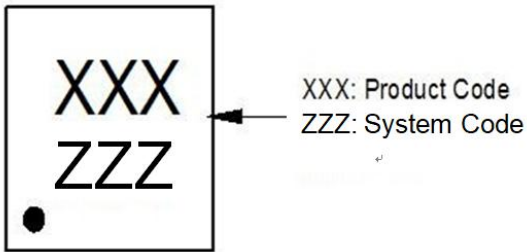


Symbol	Dimensions in Millimeters		
	Min.	Typ.	Max.
A	0.18	0.2	0.22
ϕb	0.234	0.26	0.286
D	1.75	1.78	1.81
D1		0.65	
E	2.64	2.67	2.7
E1		0.65	

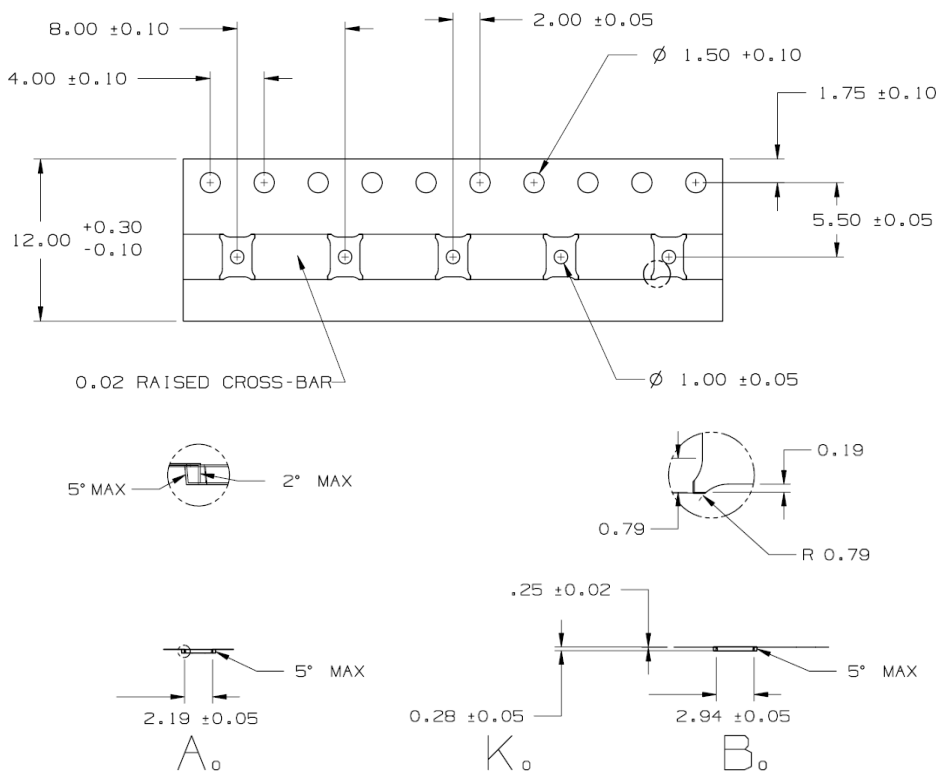
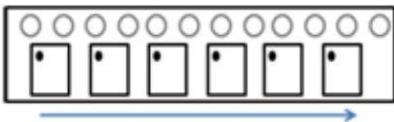
Note

- 1.Min.: Minimum dimension specified.
- 2.Max.: Maximum dimension specified.
- 3.Type.: Type. Typical dimension specified for reference.

A. Marking Information(Product Code: A09)



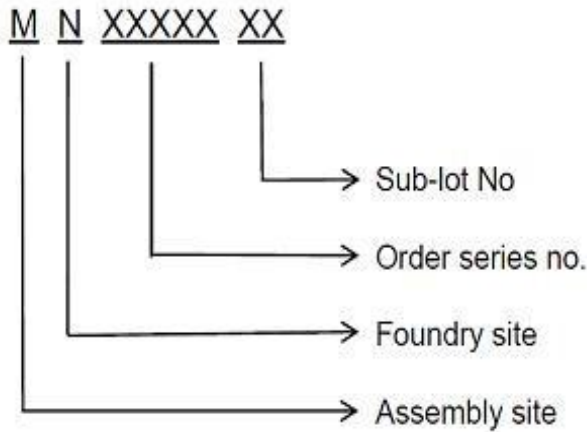
B. Tape & Reel Information:3000pcs/Reel



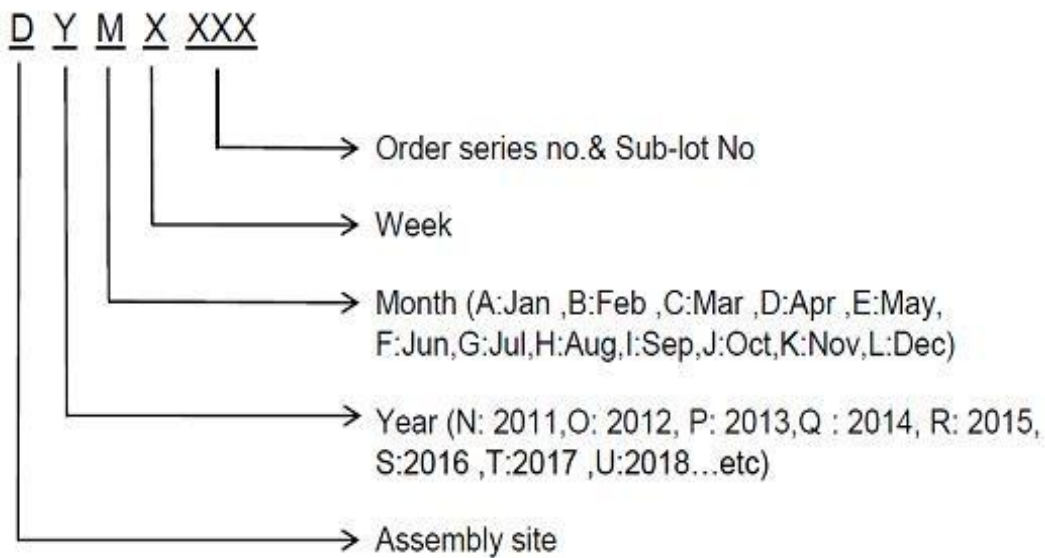
Note: All Dimension in millimeter

C. Lot No. & Date Code Rule

1. Lot No.





2. Date Code



D. Label rule

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	Device	Height: 3 mm (Max: 16 Digit)
6	Lot	Height: 3 mm (Max: 9 Digit) Sub lot
7	D/C	Height: 3 mm (Max: 7 Digit)
8	QTY	Height: 3 mm (Max: 6 Digit) Thousand mark is no needed
9	RoHS label	 long axis: 12 mm minor axis: 6 mm bottom color: White Font color: Black Font style: Arial
10	Halogen Free label	 Diameter: 10 mm bottom color: Green Font color: Black Font style: Arial
11	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

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