

Features

- Input Voltage up to 24V
- MOSFET Turn on Resistor RSS(ON)
=35mohm(Max)@Vgs=4.5V
- Drain to Drain MOSFET Module
- With ESD Protection
- Continuous Current=5A
- Green Product (RoHS, Lead-Free,
Halogen-Free Compliant)

General Description

The GS95A9CS-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

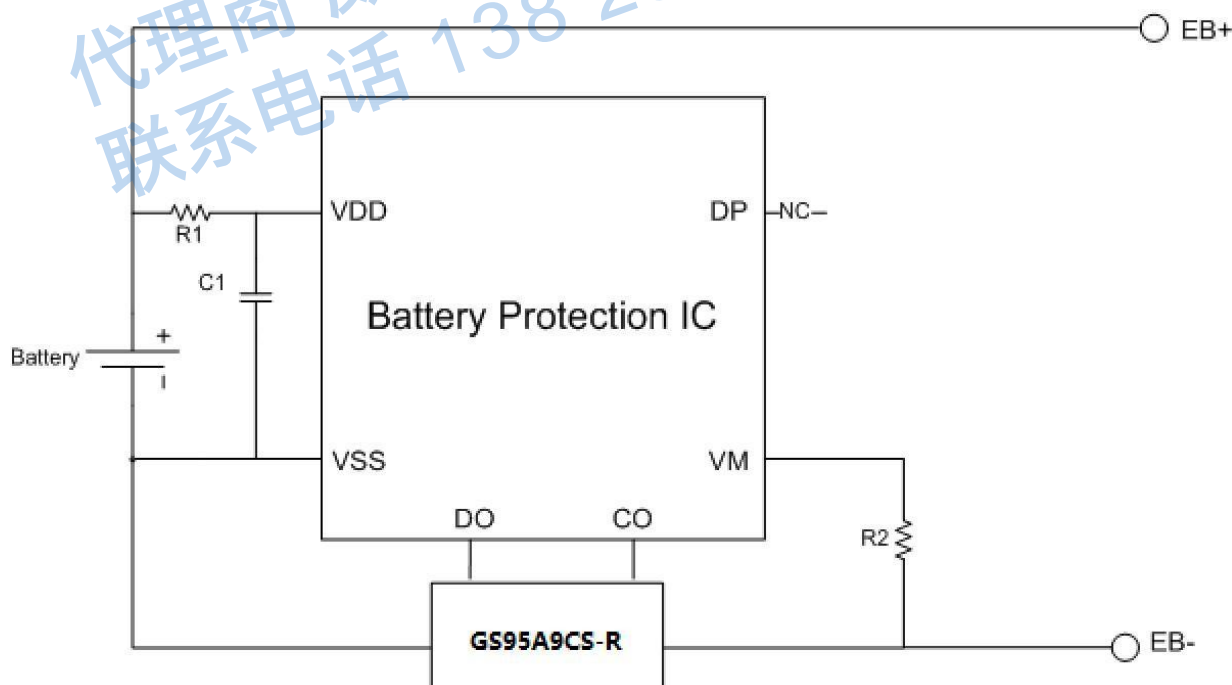


Figure 1 Application of GS95A9CS-R used in battery pack

Function Block Diagram

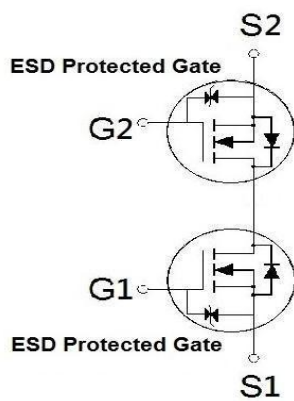


Figure 2 Function Block Diagram

Pin Configuration

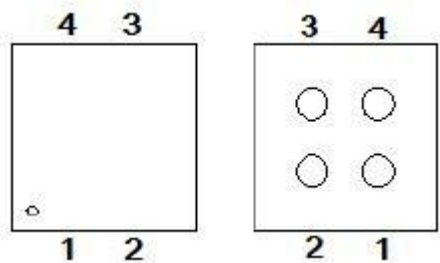


Figure 3 WLCSP 1.1 x 1.1

Pin Descriptions

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

Absolute Maximum Ratings (T_A=25°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	5	A
Pulsed Source Current ¹	I _{SP}	50	A
Total Dissipation ²	P _T	1.6	W
Thermal Resistance ²	R _{θJA}	60	°C/W
Operating Junction & Storage Temperature Range	T _j & T _{stg}	-55~150	°C

¹PW≤10μs, duty cycle≤1%.

²When mounted on 1in² FR-4 board.

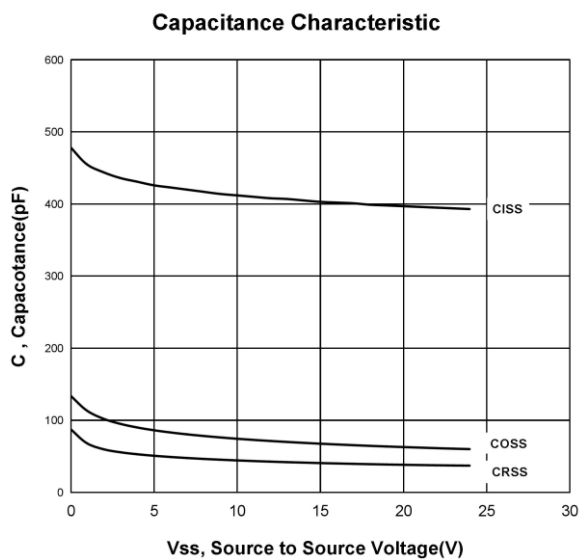
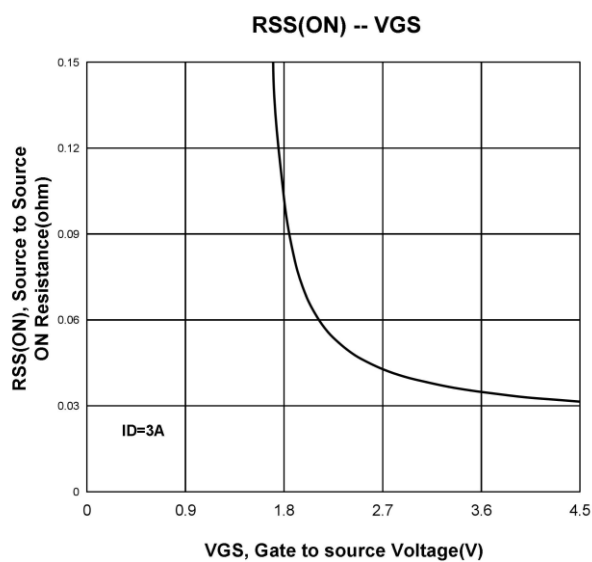
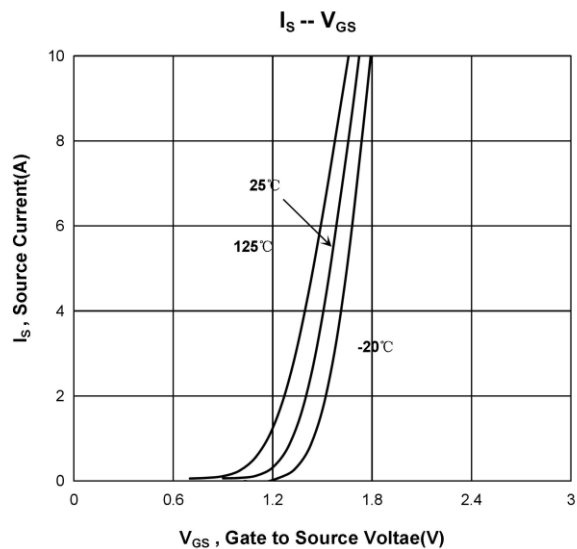
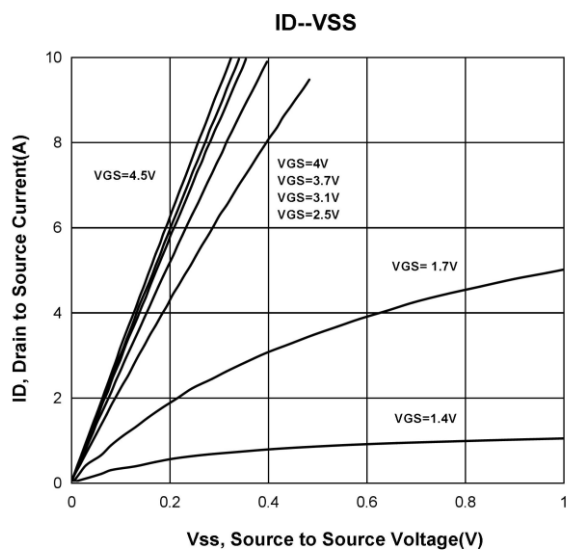
Electrical Characteristics (T_J=25°C Unless Otherwise Noted)

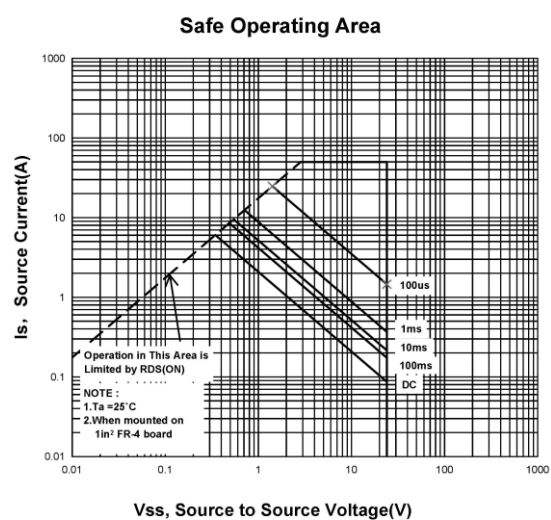
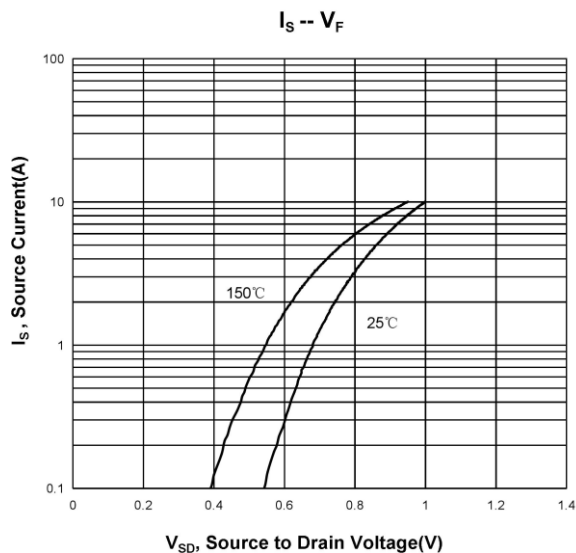
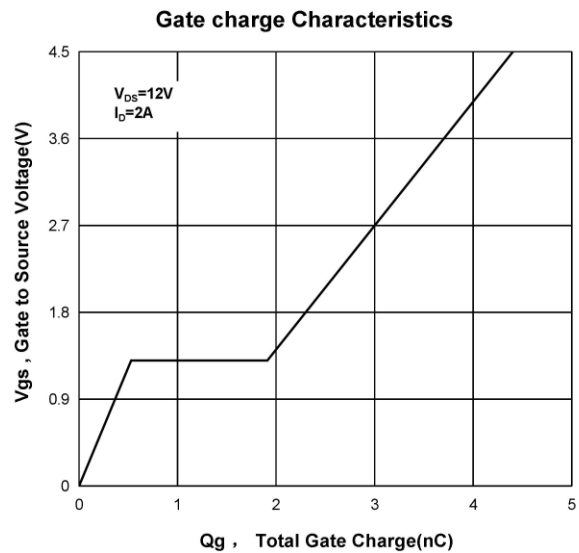
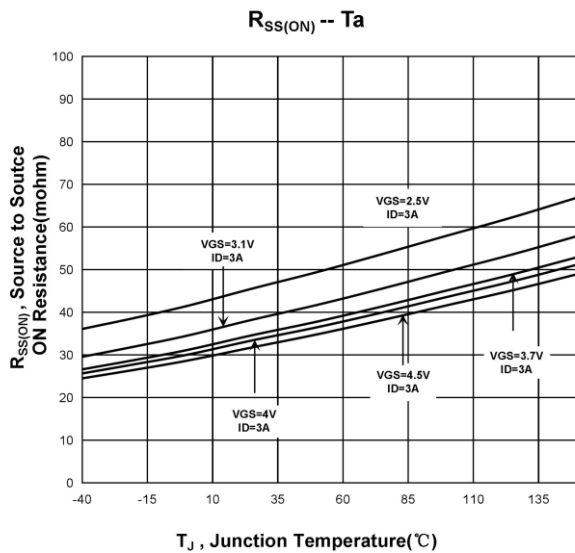
PARAMETER	SYMBOL	TEST CONDITIONS	LIMITS			UNITS
			MIN	TYP	MAX	
STATIC						
Source-Source Breakdown Voltage	V _{(BR)SSS}	V _{GS} = 0V, I _S =1mA	24			V
Gate Threshold Voltage	V _{GS(th)}	V _{SS} = 10V , I _S = 1mA	0.7	1.1	1.5	
Gate-Source Leakage	I _{GSS}	V _{SS} = 0V, V _{GS} = ±8V			±10	uA
		V _{SS} = 0V, V _{GS} = ±5V			±2	
Zero Gate Voltage Source Current	I _{SSS}	V _{SS} = 20V , V _{GS} = 0V			1	uA
Source -Source On-State Resistance ¹	R _{SS(ON)}	V _{GS} = 4.5V, I _S = 3A	26	32	35	mΩ
		V _{GS} = 4V, I _S = 3A	27	34	41	
		V _{GS} = 3.7V, I _S = 3A	28	35	42	
		V _{GS} = 3.1V, I _S = 3A	30	40	48	
		V _{GS} = 2.5V, I _S = 3A	36	50	58	
Forward Transconductance ¹	g _{fs}	V _{SS} = 5V, I _S = 3A		19		S
DYNAMIC						
Input Capacitance	C _{iss}	V _{GS} = 0V, V _{DS} = 12V, f = 1MHz		440		pF
Output Capacitance	C _{oss}			80		

Reverse Transfer Capacitance	C_{rss}			55		
Total Gate Charge ²	Q_g	$V_{SS} = 12V, V_{GS} = 4.5V, I_S = 2A$		4.8		nC
Turn-On Delay Time ²	$t_{d(on)}$	$V_{SS} = 12V, I_S \cong 2A, V_{GS} = 4.5V$		13		nS
Rise Time ²	t_r			39		
Turn-Off Delay Time ²	$t_{d(off)}$			24		
Fall Time ²	t_f			47		
SOURCE-DRAIN DIODE RATINGS AND CHARACTERISTICS ($T_J = 25\text{ }^{\circ}C$)						
Forward Source-Source Voltage ¹	V_F	$I_S = 2A, V_{GS} = 0V$		0.77	1.2	V

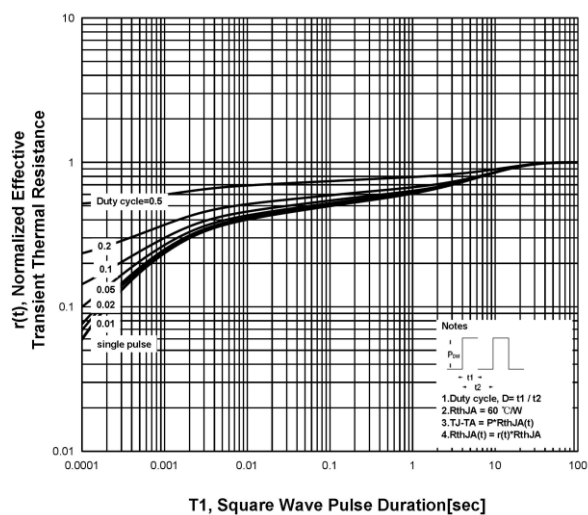
¹Pulse test : Pulse Width $\leq 300 \mu\text{sec}$, Duty Cycle $\leq 2\%$.

²Independent of operating temperature.

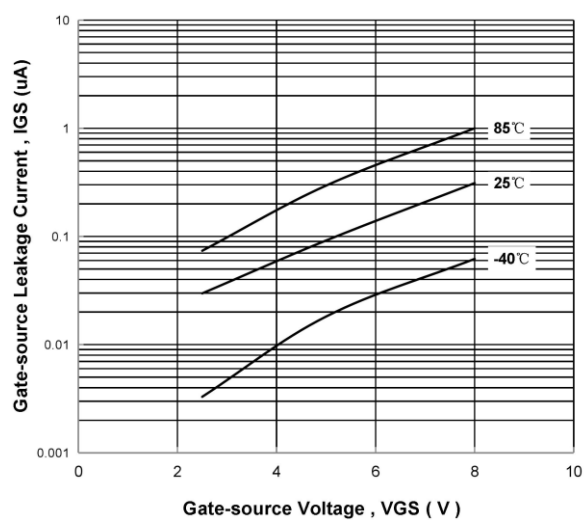




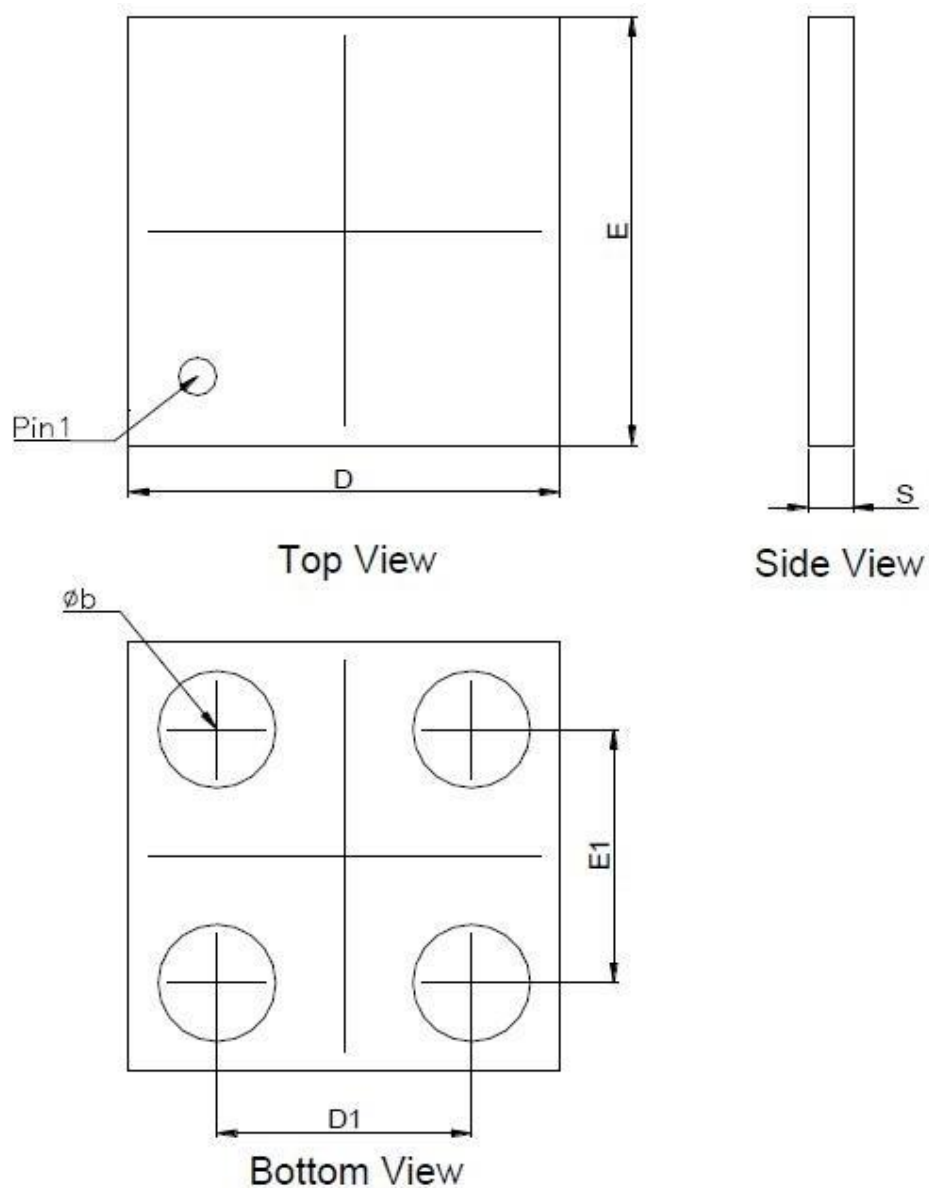
Transient Thermal Response Curve



IGS - VGS



Package Dimensions, WLCSP 1.1x1.1

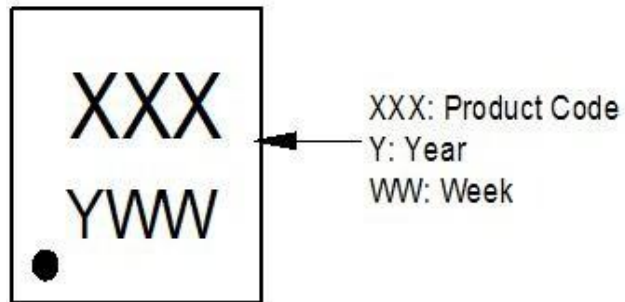


Symbol	Dimensions in Millimeters		
	Min.	Typ.	Max.
Φb		0.3	
D	1.05	1.1	1.15
D1		0.65	
E	1.05	1.1	1.15
E1		0.65	
S	0.095	0.115	0.135

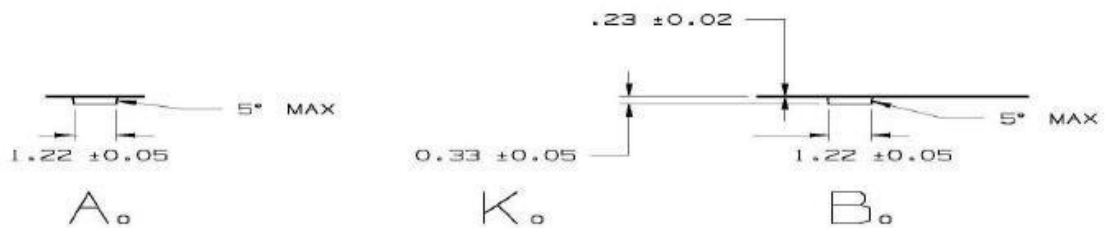
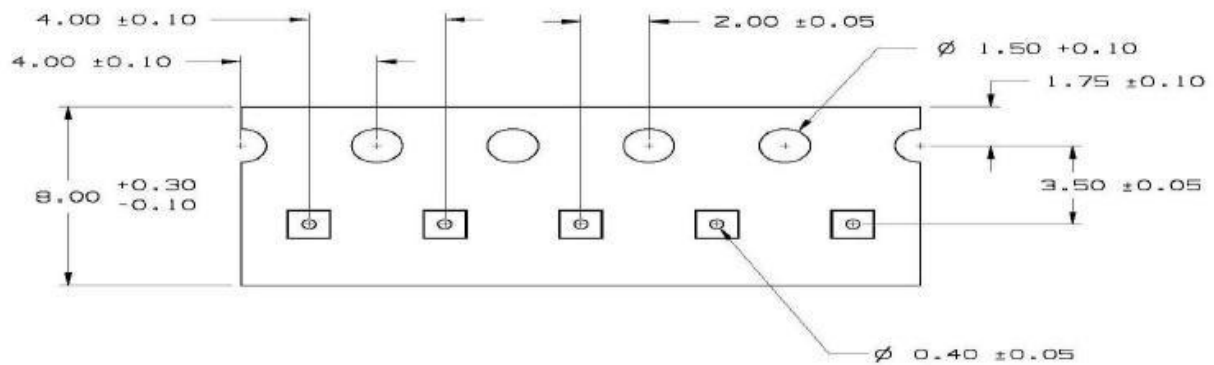
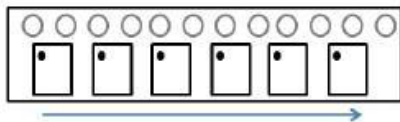
Note

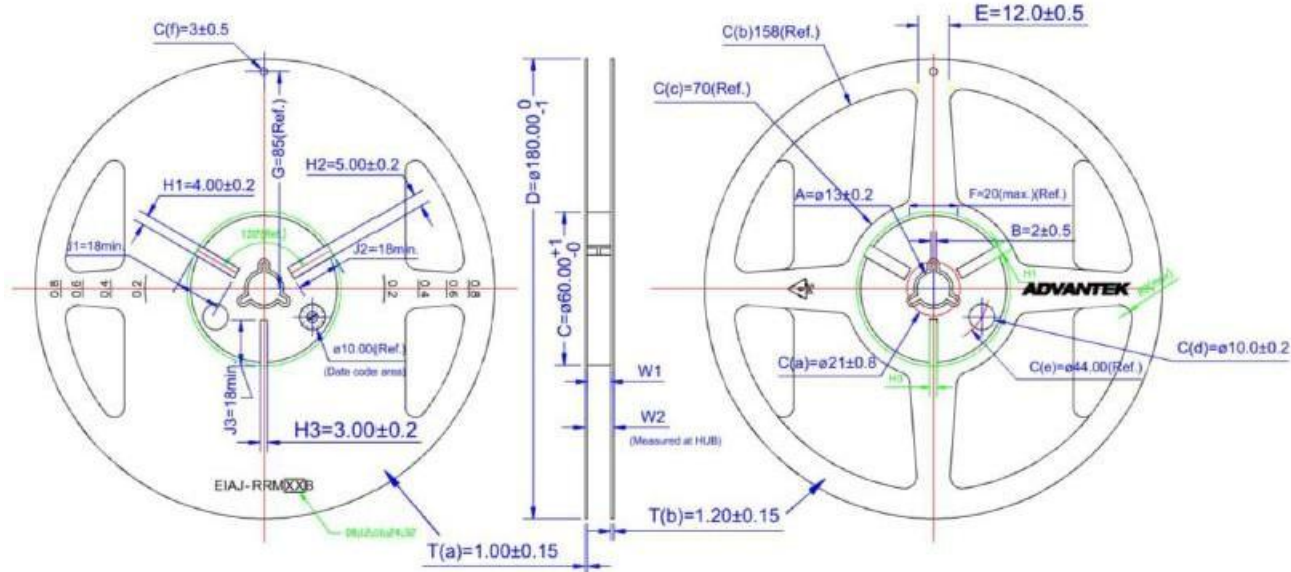
- 1.Min.: Minimum dimension specified.
- 2.Max.: Maximum dimension specified.
- 3.Type: Type. Typical dimension specified for reference.

A. Marking Information(Product Code: A22)



B. Tape&Reel Information:5000pcs/Reel

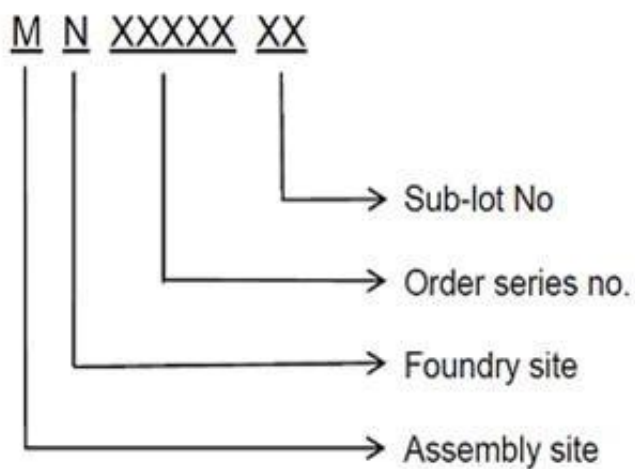




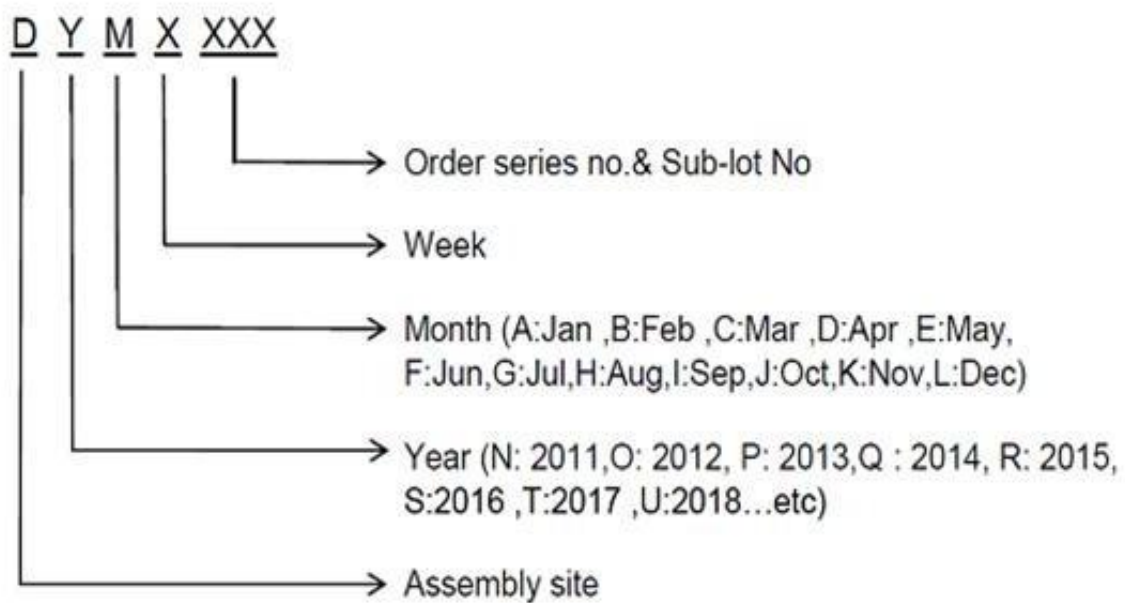
Note: All Dimension in millimeter

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	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

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