

Features

- Input Voltage up to 12V
- MOSFET Turn on Resistor RSS(ON)
=2.2mohm(typ)@Vgs=3.8V
- Drain to Drain MOSFET Module
- With ESD Protection
- Continuous Current=20A
- Green Product (RoHS, Lead-Free, Halogen-Free Compliant)

General Description

The GS95B9CS-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

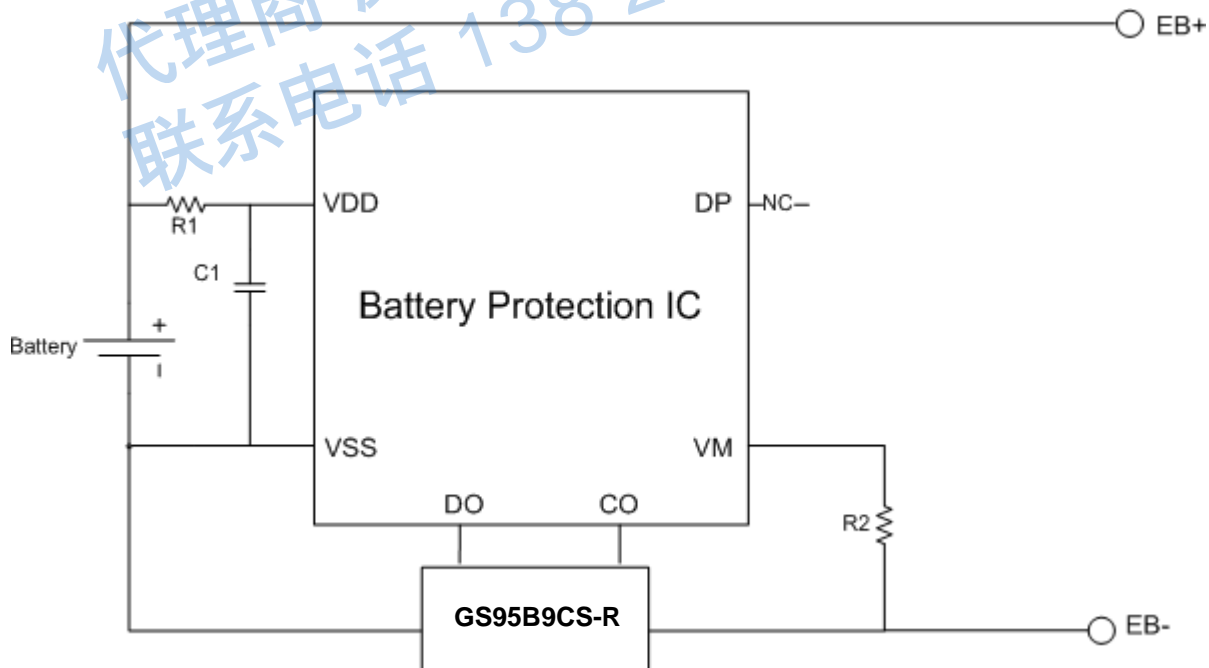


Figure 1 Application of GS95B9CS-R used in battery pack

Function Block Diagram

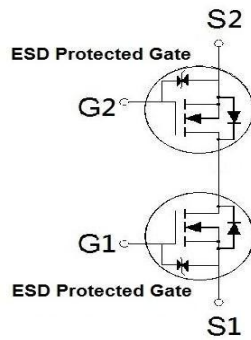


Figure 2 Function Block Diagram

Pin Configuration

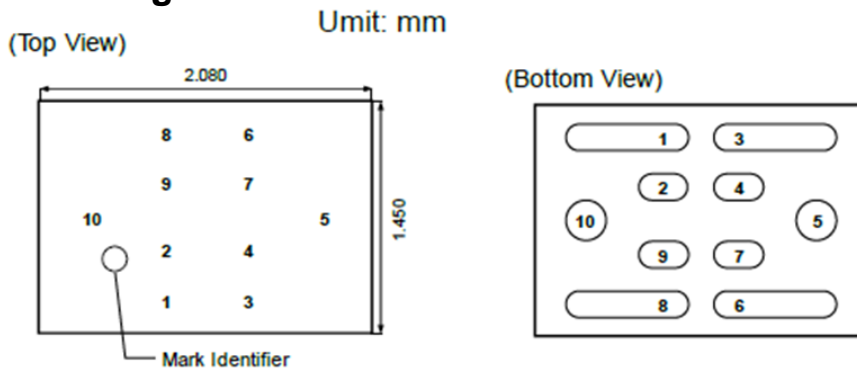


Figure 3 WLCSP 2.08x1.45

Pin Descriptions

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

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

PARAMETER / TEST CONDITIONS	SYMBOL	LIMITS	UNITS
Source-Source Voltage	V_{SSS}	12	V
Gate-Source Voltage	V_{GSS}	± 8	V
Continuous Source Current	I_S	20	A
Pulsed Source Current ¹	I_{SP}	140	A
Total Dissipation ²	P_T	1.5	W
Thermal Resistance ²	$R_{\theta JA}$	70	$^{\circ}\text{C} / \text{W}$
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	$V_{(BR)SSS}$	$V_{GS} = 0\text{V}$, $I_S = 1\text{mA}$	12			V
Gate Threshold Voltage	$V_{GS(th)}$	$V_{SS} = 10\text{V}$, $I_S = 1\text{mA}$	0.35	0.90	1.4	
Gate-Source Leakage	I_{GSS}	$V_{SS} = 0\text{V}$, $V_{GS} = \pm 8\text{V}$			± 10	μA
		$V_{SS} = 0\text{V}$, $V_{GS} = \pm 5\text{V}$			± 1	
Zero Gate Voltage Source Current	I_{SSS}	$V_{SS} = 12\text{V}$, $V_{GS} = 0\text{V}$			1	μA
Drain-Source On-State Resistance ¹	$R_{SS(ON)}$	$V_{GS} = 4.5\text{V}$, $I_S = 3\text{A}$	1.50	2.05	2.70	m Ω
		$V_{GS} = 3.8\text{V}$, $I_S = 3\text{A}$	1.60	2.20	2.85	
		$V_{GS} = 3.1\text{V}$, $I_S = 3\text{A}$	1.75	2.55	3.90	
		$V_{GS} = 2.5\text{V}$, $I_S = 3\text{A}$	2.00	3.30	6.60	

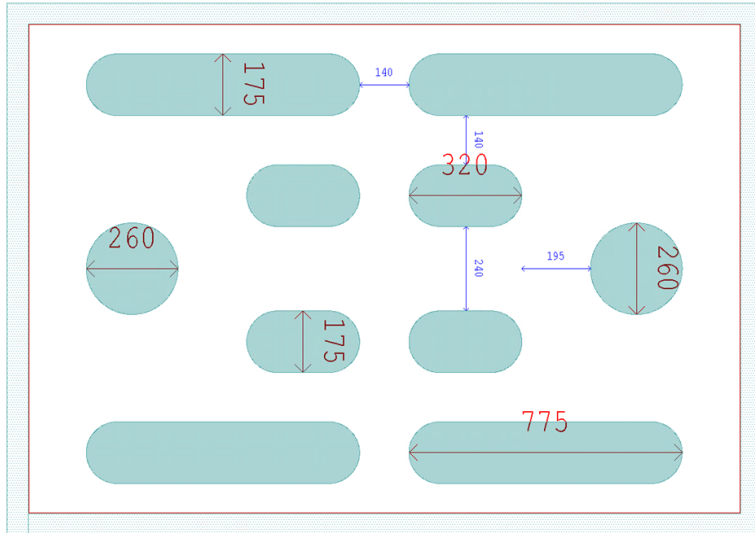
DYNAMIC						
Input Capacitance	C_{ISS}			TBD		pF
Output Capacitance	C_{OSS}	$V_{GS} = 0V, V_{DS} = 12V, f = 1MHz$		TBD		
Reverse Transfer Capacitance	C_{RSS}			TBD		
Gate Resistance	R_g	$F = 1MHz$		400		Ω
Total Gate Charge ²	Q_g	$V_{SS} = 12V, V_{GS} = 4.5V, I_S = 5A$		TBD		nC
Turn-On Delay Time ²	$t_{d(on)}$	$V_{SS} = 12V, I_S \cong 5A, V_{GS} = 4.5V$		TBD		nS
Rise Time ²	t_r			TBD		
Turn-Off Delay Time ²	$t_{d(off)}$			TBD		
Fall Time ²	T_{f0}			TBD		
SOURCE-DRAIN DIODE RATINGS AND CHARACTERISTICS ($T_J = 25^\circ C$)						
Forward Source-Source Voltage ¹	V_F	$I_S = 5A, V_{GS} = 0V$		0.6	1.2	V

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

²Independent of operating temperature.

Package Dimensions, WLCSP 2.080x1.450

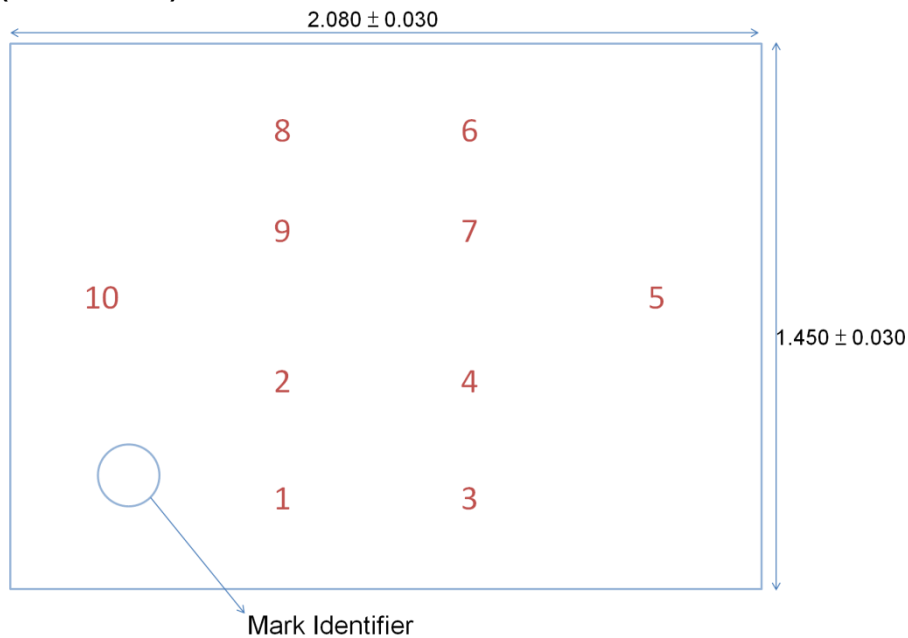
(Top View)



(Front View)

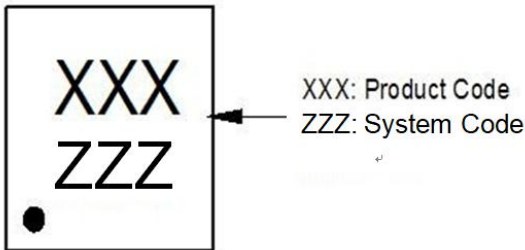


(Bottom View)

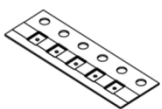
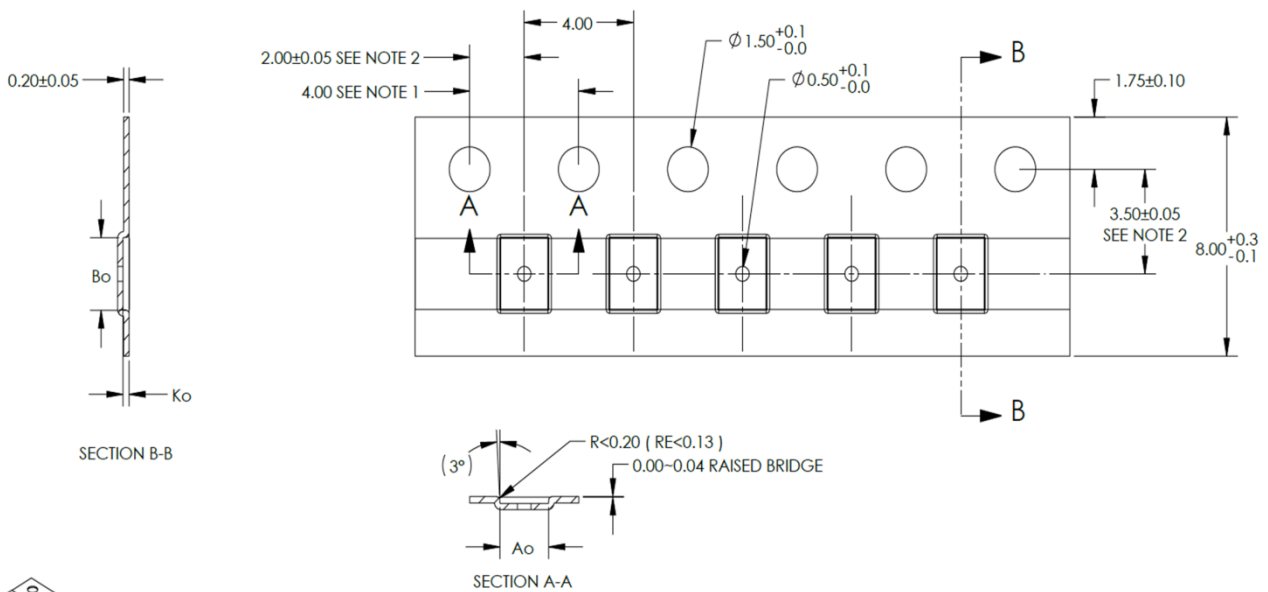
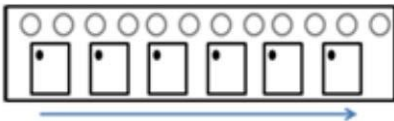


Note: All Dimension in millimeter

A. Marking Information(Product Code : A33)



B. Tape & Reel Information : 5000pcs/Reel



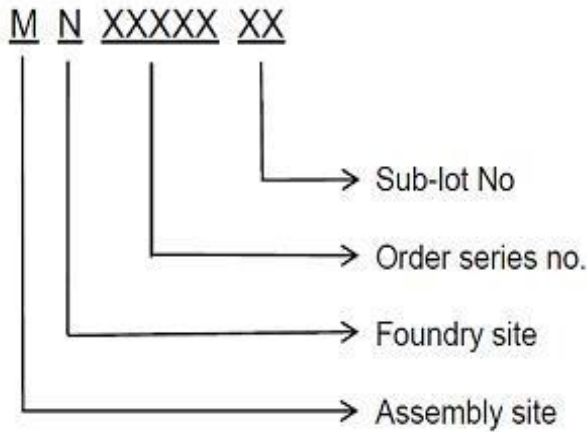
SCALE 2:1

DIM		±
Ao	1.78	0.03
Bo	2.43	0.03
Ko	0.22	0.03

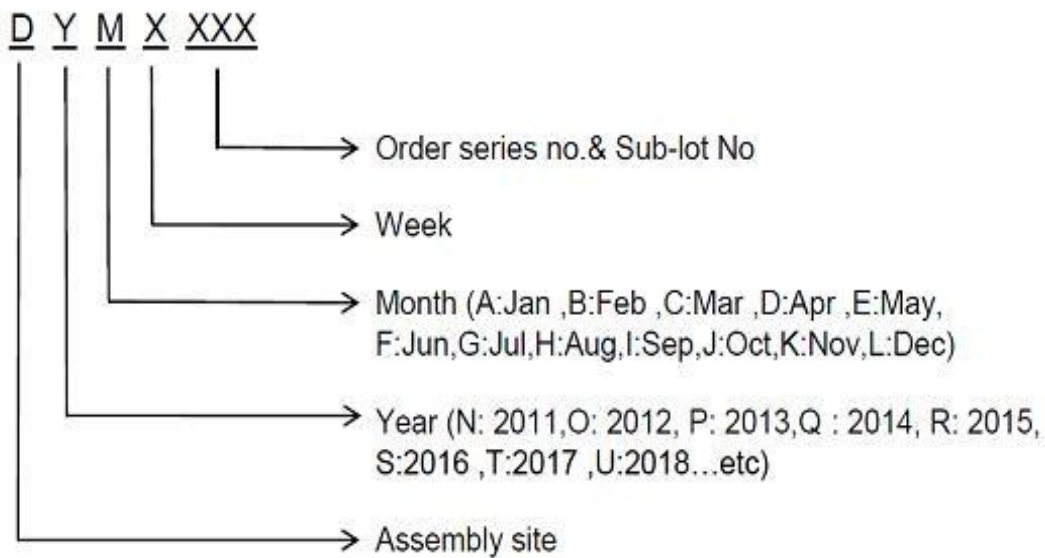
Note: All Dimension in millimeter

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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