GSMBSS123KJZF

100V N-Channel Enhancement Mode MOSFET

Product Description

GSMBSS123KJZF is an N-Channel enhancement mode MOSFET utilizes trench technology to achieve high cell density and low on-resistance. These features make this device extremely efficient and reliable.

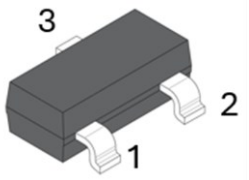
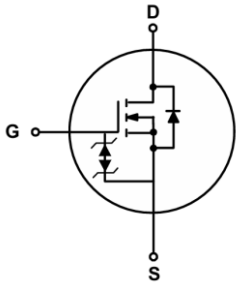
Features

- $R_{DS(ON)}$ = 5.5Ω max @V_{GS}=10V
- SOT-23 Package
- ESD Protected≧ 2KV
- RoHS Compliant and Halogen Free

Applications

- Relay Driver
- Portable Application

Packages & Pin Assignments

GSMBSS123KJZF (SOT-23)	Equivalent Circuit
	

Pin	Description
1	Gate
2	Source
3	Drain

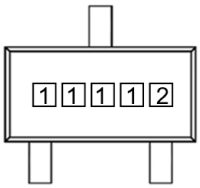
Ordering and Marking Information

Ordering Information			
Part Number	**Package**	**Part Marking**	**Quantity / Reel**
GSMBSS123KJZF	SOT-23	SA/.S.A □ / 123K	3,000 PCS

GSMBSS123K 1 2

- **Product Code:** GSMBSS123K
- **Package Code:** 1 is **JZ** for SOT-23
- **Green Level:** 2 is **F** for RoHS Compliant and Halogen Free

Marking Information



- **Product Code:** 1 is SA / .S.A / 123K
- **GS Code:** 2 is GS Code

Absolute Maximum Ratings (T_A=25ºC, unless otherwise specified)

Symbol	Parameter		Value	Unit
V_{DSS}	Drain-Source Voltage		100	V
V_{GSS}	Gate-Source Voltage		±20	V
I_D (1)	Continuous Drain Current	T_A=25ºC	0.18	A
I_{DM} (1) (2)	Pulsed Drain Current		0.72	A
P_D	Power Dissipation	T_A=25ºC	0.45	W
T_J	Operating Junction Temperature		-55 to +150	ºC
T_{STG}	Storage Temperature Range		-55 to +150	ºC
$R_{\theta JA}$ (1)	Thermal Resistance, Junction to Ambient		275	ºC/W

NOTE :

1. Surface Mounted on 1 in2 pad area, t ≦ 10 sec
2. Pulse width ≦ 300 μs, duty cycle ≦ 2 %

Electrical Characteristics (T_A=25ºC, unless otherwise specified)

Symbol	Parameter	Test Conditions	Min.	Typ.	Max.	Unit
Static characteristics						
BV_{DSS}	Drain-Source Breakdown Voltage	V_{GS}=0V, I_D=250μA	100	-	-	V
I_{DSS}	Zero Gate Voltage Drain Current	V_{DS}=80V, V_{GS}=0V	-	-	1	μA
I_{GSS}	Gate Leakage Current	V_{DS}=0V, V_{GS}=±20V	-	-	±10	μA
$V_{GS(th)}$	Gate Threshold Voltage	V_{DS}=V_{GS}, I_D=250μA	1.5	-	2.8	V
$R_{DS(ON)}$	Drain-Source On-Resistance	V_{GS}=10V, I_D=0.18A	-	-	5.5	Ω
		V_{GS}=4.5V, I_D=0.1A	-	-	6.5	
V_{SD}	Diode Forward Voltage	I_S=0.18A, V_{GS}=0V	-	-	1.3	V
Dynamic characteristics						
C_{iss}	Input Capacitance	V_{DS}=30V, V_{GS}=0V, f=1MHz	-	31	-	pF
C_{oss}	Output Capacitance		-	2.3	-	
C_{rss}	Reverse Transfer Capacitance		-	1.5	-	
Q_g	Total Gate Charge	V_{DS}=50V, I_D=0.18A V_{GS}=10V,	-	1.5	-	nC
Q_{gs}	Gate-Source Charge		-	0.5	-	
Q_{gd}	Gate-Drain Charge		-	0.18	-	
$t_{d(on)}$	Turn-On Time	V_{DD}=50V, I_D=0.18A, V_{GS}=10V, R_G=6Ω	-	4.2	-	ns
t_r	Rise Time		-	5.8	-	
$t_{d(off)}$	Turn-Off Time		-	9.8	-	
t_f	Fall Time		-	15	-	

Typical Performance Characteristics (T_A=25ºC, unless otherwise specified)

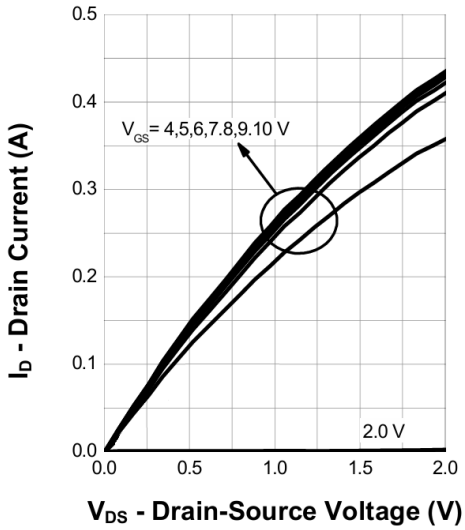


Fig.1 Output Characteristics

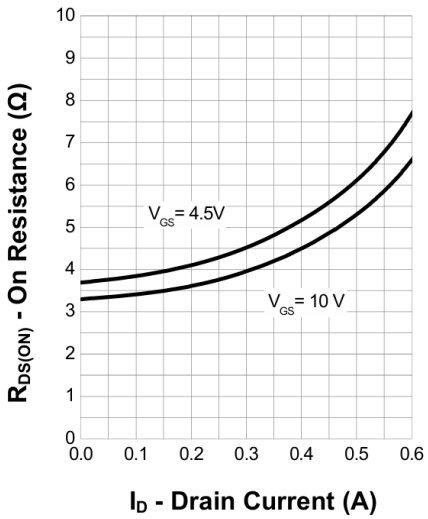


Fig.2 On-Resistance vs. Drain Current

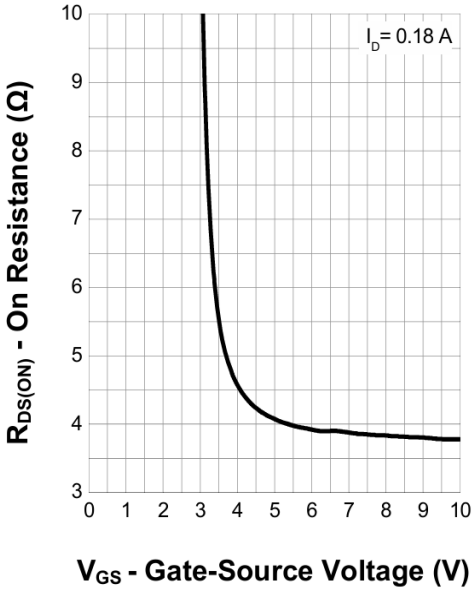


Fig.3 Transfer Characteristic

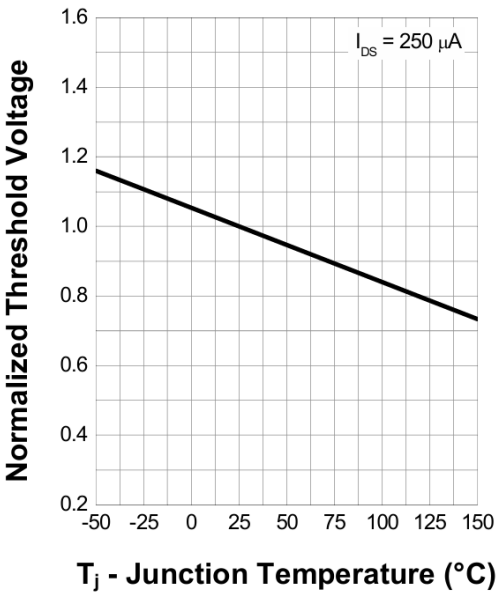


Fig.4 Gate Threshold Voltage vs. T_J

Typical Performance Characteristics (TA=25ºC, unless otherwise specified)

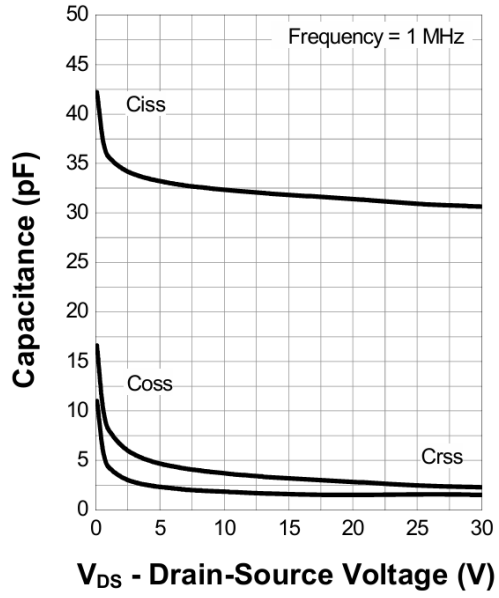


Fig.5 Capacitance Characteristics

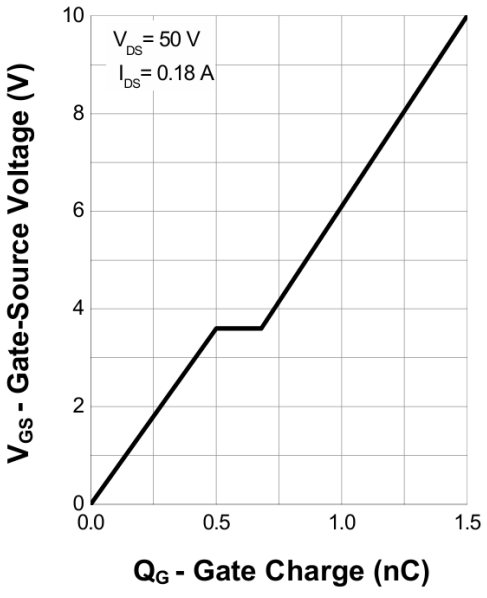


Fig.6 Gate Charge Characteristics

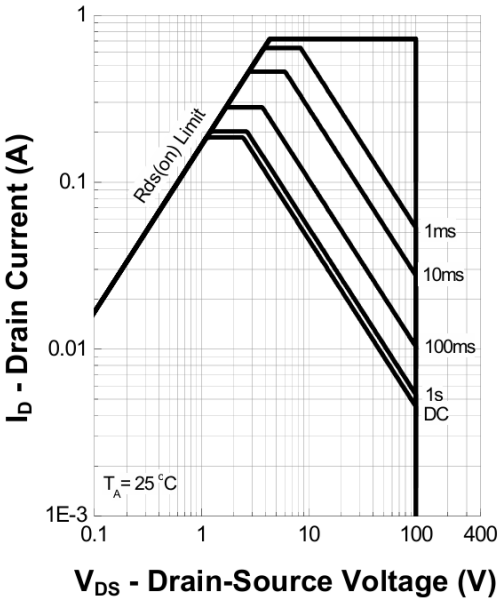


Fig.7 Maximum Safe Operation Area

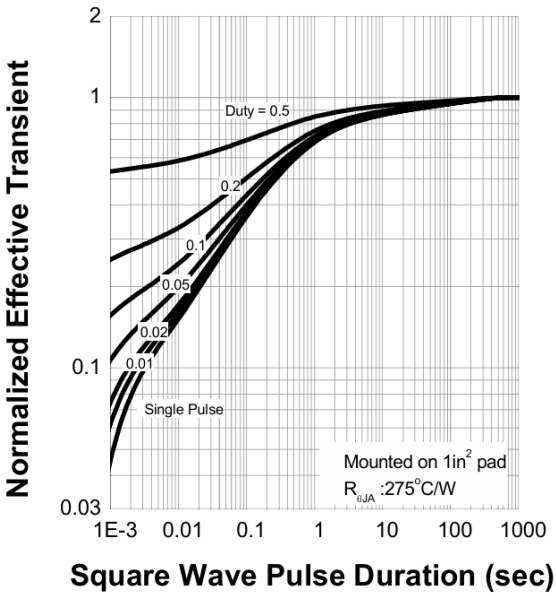
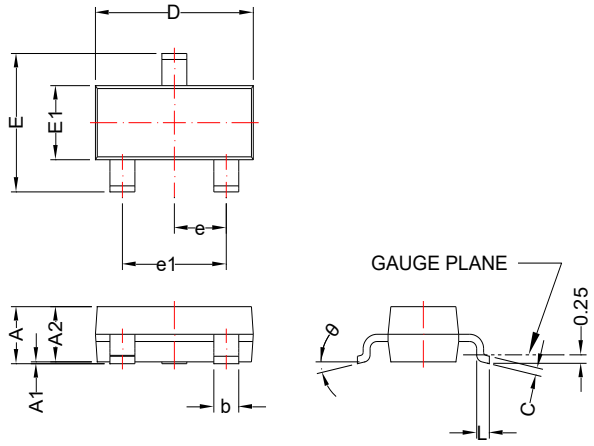


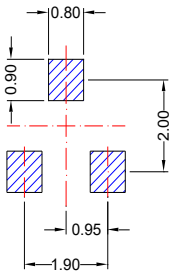
Fig.8 Thermal Transient Impedance

SOT-23

Package Dimension



Recommended Land Pattern



Dimensions				
Symbol	Millimeters		Inches	
	MIN	MAX	MIN	MAX
A	0.75	1.17	0.030	0.046
A1	0.01	0.15	0.000	0.006
A2	0.70	1.02	0.028	0.040
b	0.30	0.50	0.012	0.020
c	0.08	0.20	0.003	0.008
D	2.80	3.04	0.110	0.120
E	2.10	2.64	0.083	0.104
E1	1.20	1.40	0.047	0.055
e	0.95 BSC		0.037 BSC	
e1	1.90 BSC		0.075 BSC	
L	0.3	0.6	0.012	0.024
θ	0°	8°	0°	8°

NOTE:
Dimensions are exclusive of Burrs, Mold Flash & Tie Bar extrusions.

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CONTACT US

GS Headquarter	
	4F.,No.43-1,Lane11,Sec.6,Minquan E.Rd Neihu District Taipei City 114, Taiwan (R.O.C)
	886-2-2657-9980
	886-2-2657-3630
@	sales_twn@gs-power.com

RD Division	
	824 Bolton Drive Milpitas. CA. 95035
	1-408-457-0587