GSMBSS139

50V N-Channel MOSFETs

Product Description

These N-Channel Enhancement Mode Power Field Effect Transistors are Using Trench DMOS Technology. This Advanced Technology has been Especially Tailored to Minimize on-state Resistance, Provide Superior Switching Performance, and Withstand high Energy Pulse in the Avalanche and Commutation mode.

These Devices are well Suited for High Efficiency Fast Switching Applications.

Features

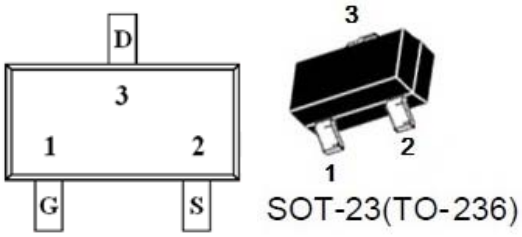
- 50V, 0.2A, $R_{DS(ON)}$=3.5Ω@V_{GS}=5V
- Improved dv/dt Capability
- Fast Switching
- Low Threshold Voltage(VGS(th)：0.5⋯1.5V) Makes It Ideal for Low Voltage Application
- 100% EAS Guaranteed
- Green Device Available
- SOT-23 Package Design

Applications

- Notebook
- Load Switch
- LED Applications

Packages & Pin Assignments

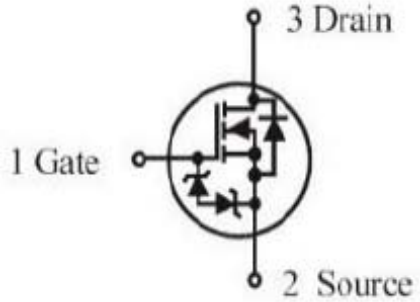
GSMBSS139JZF (SOT-23)



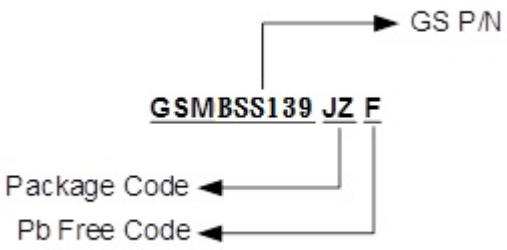
SOT-23(TO-236)

Top Views

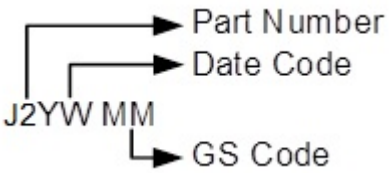
Pin	Description
1	Gate
2	Source
3	Drain



Ordering Information



Marking Information



Part Number	Package	Part Marking	Quantity
GSMBSS139JZF	SOT-23	J2YWMM	3000pcs

Absolute Maximum Ratings

T_A=25ºC Unless otherwise noted

Symbol	Parameter	Limits	Unit
V_{DS}	Drain-Source Voltage	50	V
V_{GS}	Gate-Source Voltage	±20	V
I_D	Continuous Drain Current T_A=25℃	0.2	A
I_{DM}	Pulsed Drain Current	0.8	A
P_D	Power Dissipation (T_A=25℃)	0.225	W
	Power Dissipation (Derate above 25℃)	0.0018	W/℃
T_J	Operating Junction Temperature Range	-55 to +150	℃
T_{STG}	Storage Temperature Range	-55 to +150	℃
$R_{\theta JA}$	Thermal Resistance-Junction to Ambient	556	℃/W
TL	Maximum Lead Temperature for Soldering Purpose, for 10 Seconds	260	℃

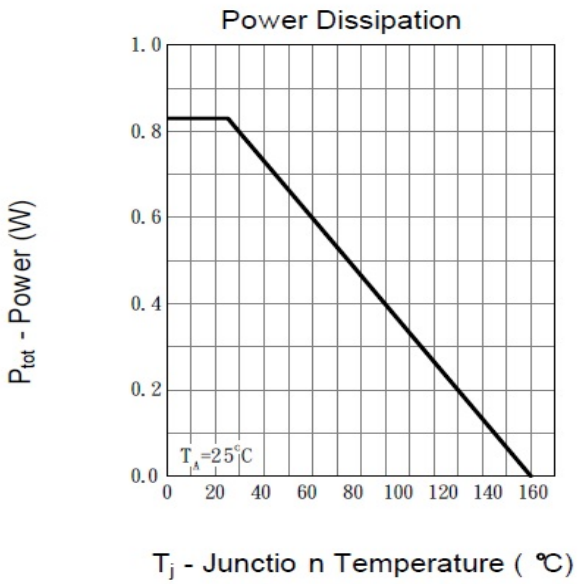
Electrical Characteristics

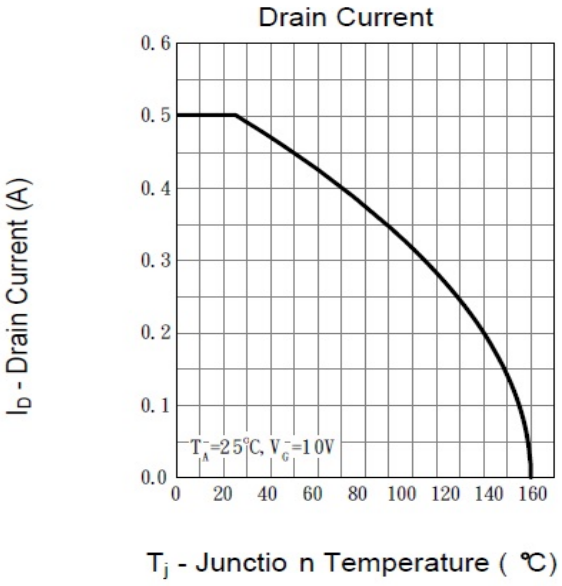
T_A=25℃ Unless otherwise noted

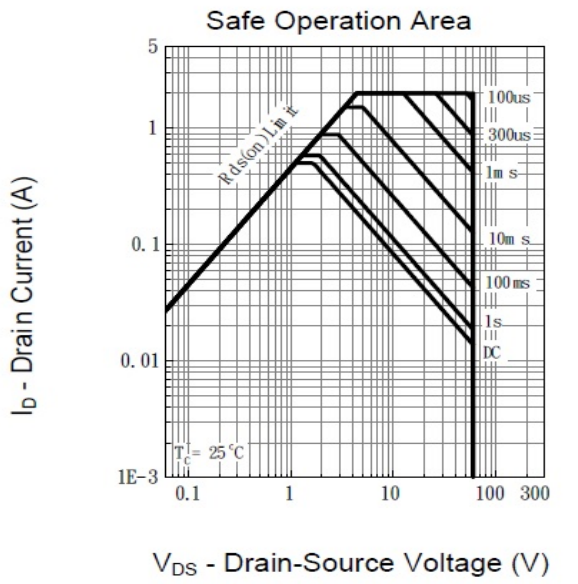
Symbol	Parameter	Conditions	Min	Typ	Max	Unit
Static						
$V_{(BR)DSS}$	Drain-Source Breakdown Voltage	V_{GS}=0V,I_D=250uA	50	-	-	V
$V_{GS(th)}$	Gate Threshold Voltage	V_{DS}=V_{GS},I_D=1mA	0.5	-	1.5	V
I_{GSSF}	Gate Leakage Current，Forward	V_{DS}=0V,V_{GS}=20V			10	μA
I_{GSSR}	Gate Leakage Current，Reverse	V_{DS}=0V,V_{GS}=-20V			-10	μA
I_{DSS}	Zero Gate Voltage Drain Current	V_{DS}=250V,V_{GS}=0V			0.1	uA
		V_{DS}=50V,V_{GS}=0V,			0.5	
I_S	Continuous Source Current	V_G=V_D=0V, Force Current			2	A
I_{SM}	Pulsed Source Current				8	
$R_{DS(on)}$	Drain-Source On-Resistance	V_{GS}=5.0V,I_D=0.2A		-	3.5	Ω
		V_{GS}=2.75V,I_D<0.2A	-	5.6	10	
g_{FS}	Forward Transconductance	V_{DS}=25V,I_D=0.2A	100	-	-	mS

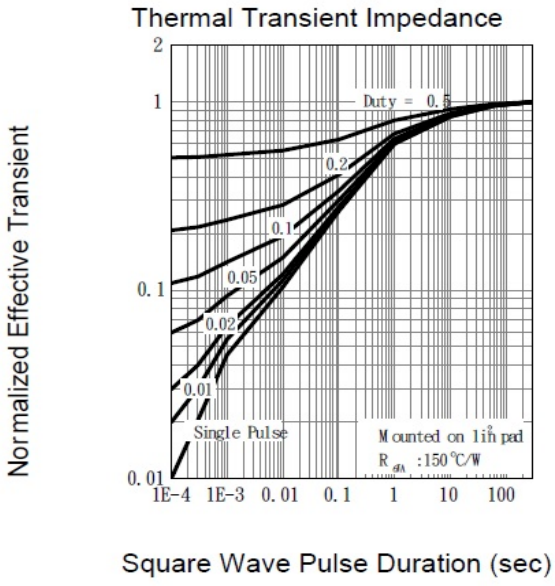
Dynamic						
C_{iss}	Input Capacitance	V_{DS}=25V,V_{GS}=0V, f=1MHz		22.8		pF
C_{oss}	Output Capacitance			3.8		
C_{rss}	Reverse Transfer Capacitance			2.9		
$t_{d(on)}$	Turn-On Time	V_{DD}=30V,I_D=1A, V_{GS}=10V,R_G=25Ω		3.8		ns
$t_{d(off)}$	Turn-Off Time			19		

Typical Performance Characteristics



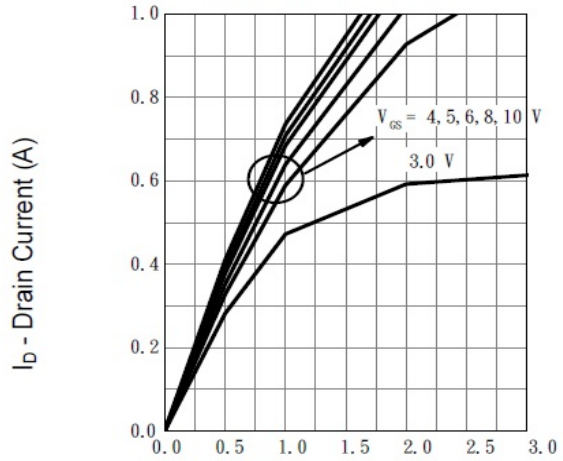




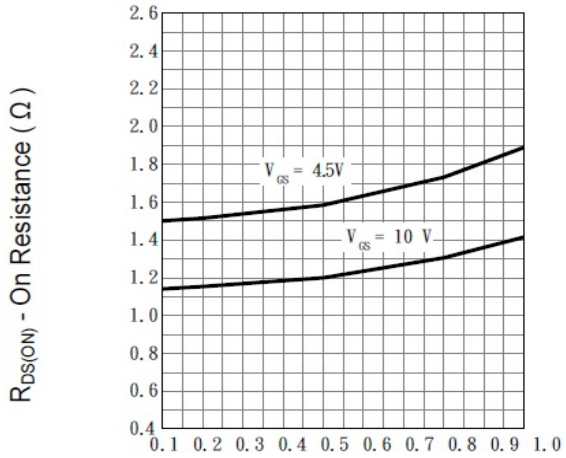


Typical Performance Characteristics (Continue)

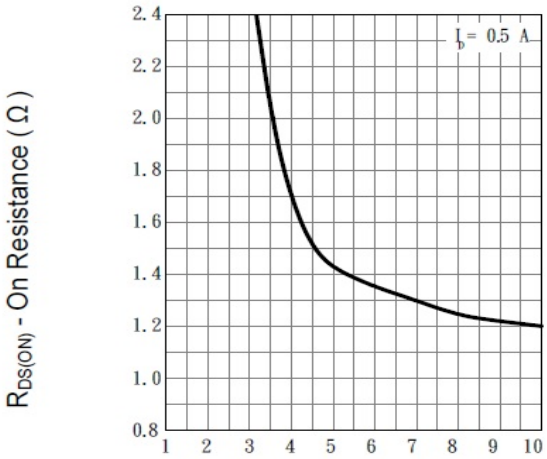
Output Characteristics



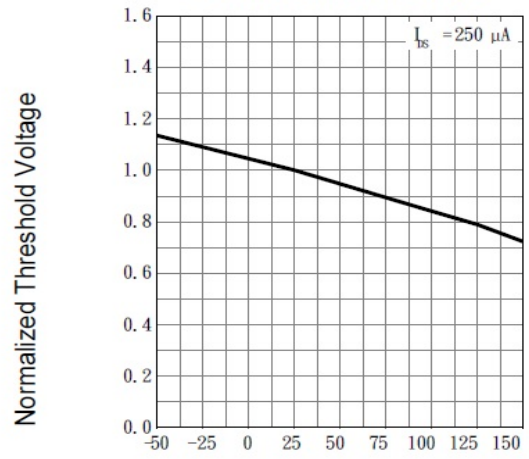
Drain-Source On Resistance



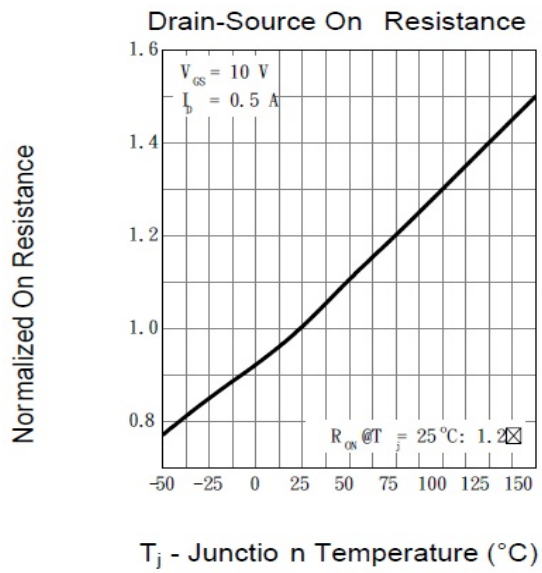
Trans fer Characteristics

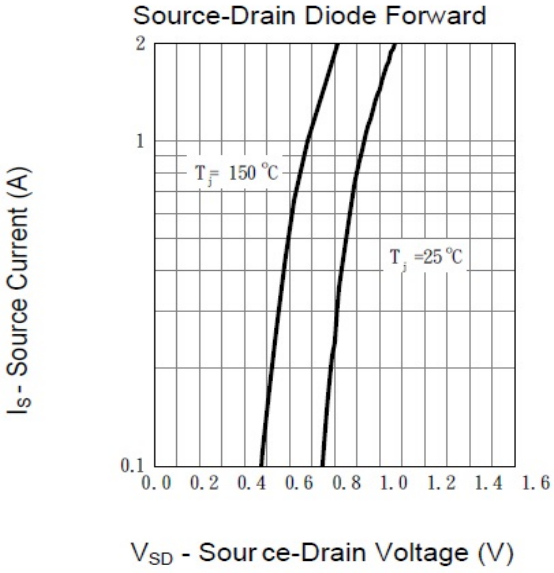


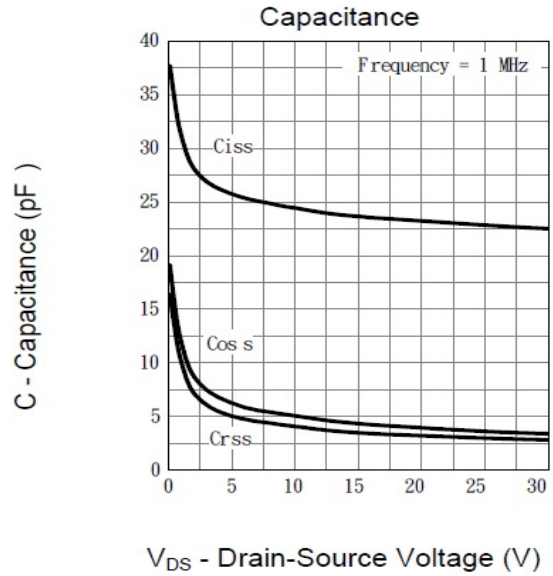
Gate Threshold Voltage

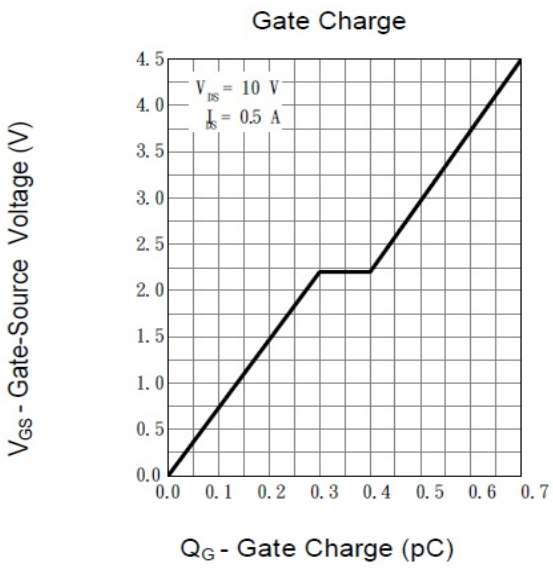


Typical Performance Characteristics (Continue)

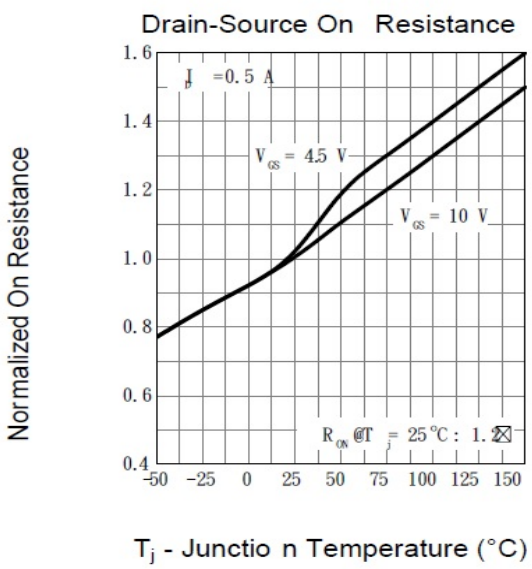


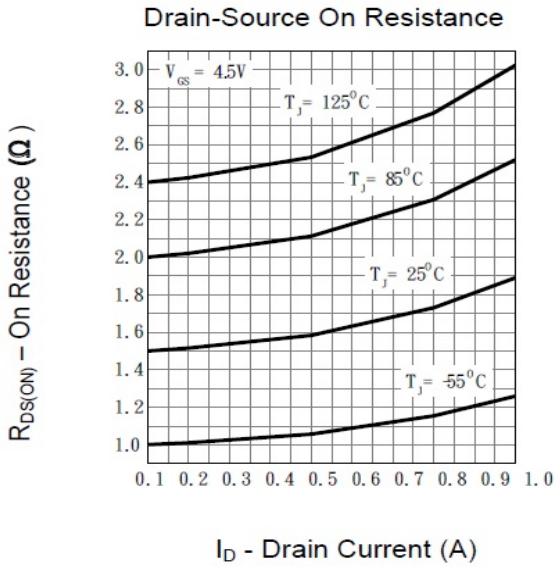


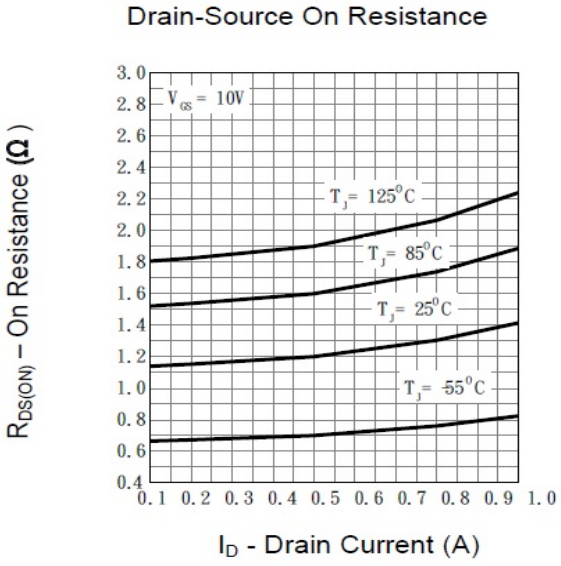


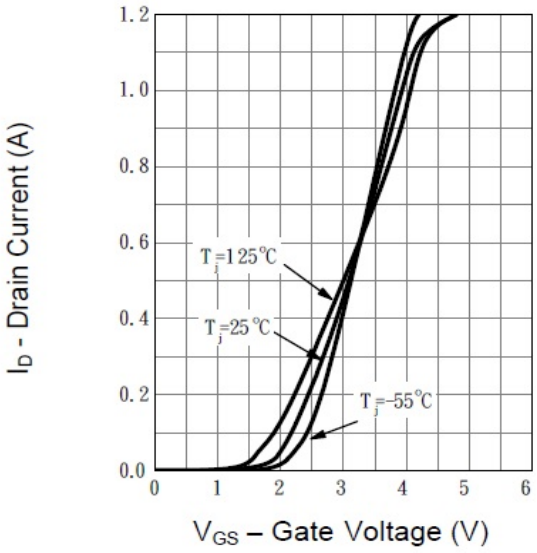


Typical Performance Characteristics (Continue)



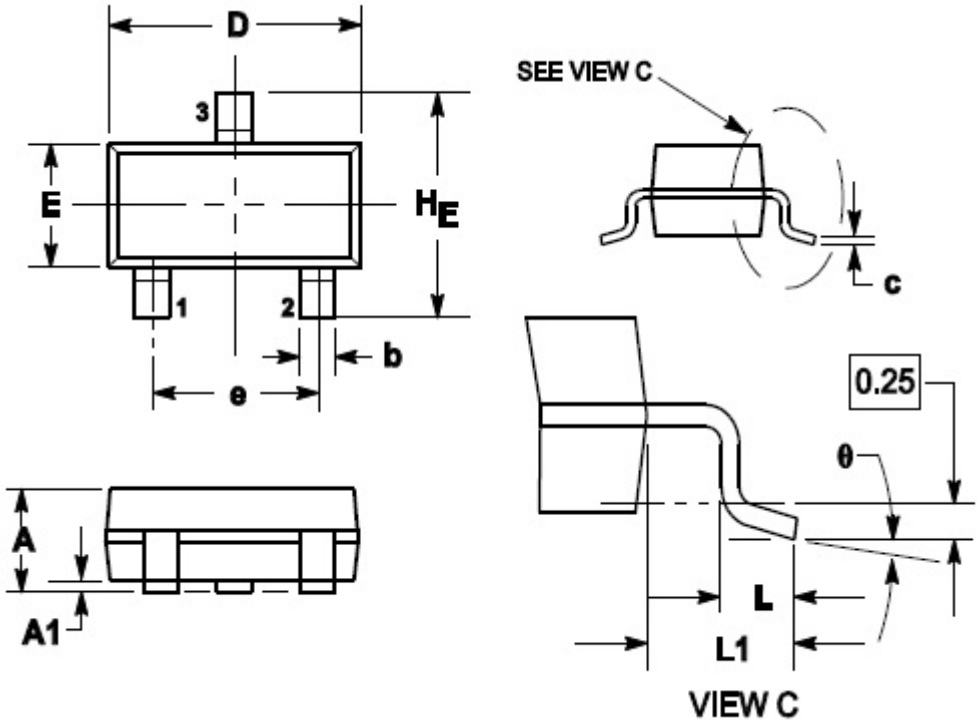






Package Dimension

SOT-23 Plastic Package



Dimensions				
Symbol	Millimeters		Inches	
	Min	Max	Min	Max
A	0.89	1.11	0.035	0.044
A1	0.01	0.10	0.001	0.004
b	0.37	0.50	0.015	0.020
c	0.09	0.18	0.003	0.007
D	2.80	3.04	0.110	0.120
E	1.20	1.40	0.047	0.055
e	1.78	2.04	0.007	0.081
L	0.10	0.30	0.004	0.012
L1	0.35	0.69	0.014	0.029
H_E	2.10	2.64	0.083	0.104
θ	0°	10°	0°	10°

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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