

GSMBSS139

60V 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.

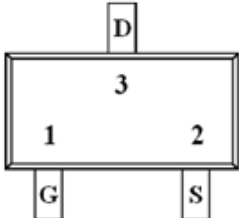
Features

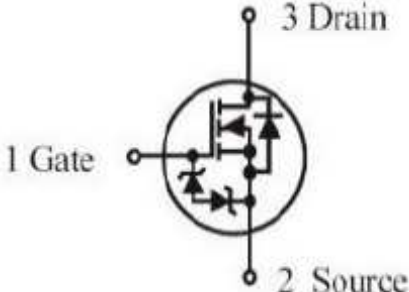
- 60V, 0.2A, $R_{DS(ON)}=2.5\Omega@V_{GS}=4.5V$
- Improved dv/dt Capability
- Fast Switching
- 100% EAS Guaranteed
- Green Device Available
- ESD Protected : 1500V

Applications

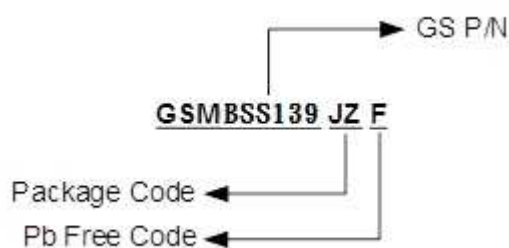
- Notebook
- Load Switch
- LED Applications

Packages & Pin Assignments

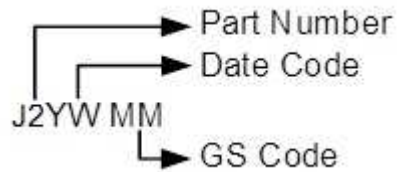
GSMBSS139JZF (SOT-23)	
 Top Views	
Pin	Description
1	Gate
2	Source
3	Drain



Ordering Information



Marking Information



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

Absolute Maximum Ratings

$T_A=25^{\circ}\text{C}$ Unless otherwise noted

Symbol	Parameter	Limits	Unit
V_{DS}	Drain-Source Voltage	60	V
V_{GS}	Gate-Source Voltage	± 20	V
I_D	Continuous Drain Current $T_A=25^{\circ}\text{C}$	0.2	A
I_{DM}	Pulsed Drain Current	0.8	A
P_D	Power Dissipation ($T_A=25^{\circ}\text{C}$)	0.225	W
	Power Dissipation (Derate above 25°C)	0.0018	W/ $^{\circ}\text{C}$
T_J	Operating Junction Temperature Range	-55 to $+150$	$^{\circ}\text{C}$
T_{STG}	Storage Temperature Range	-55 to $+150$	$^{\circ}\text{C}$
$R_{\theta JA}$	Thermal Resistance-Junction to Ambient	556	$^{\circ}\text{C}/\text{W}$
TL	Maximum Lead Temperature for Soldering Purpose, for 10 Seconds	260	$^{\circ}\text{C}$

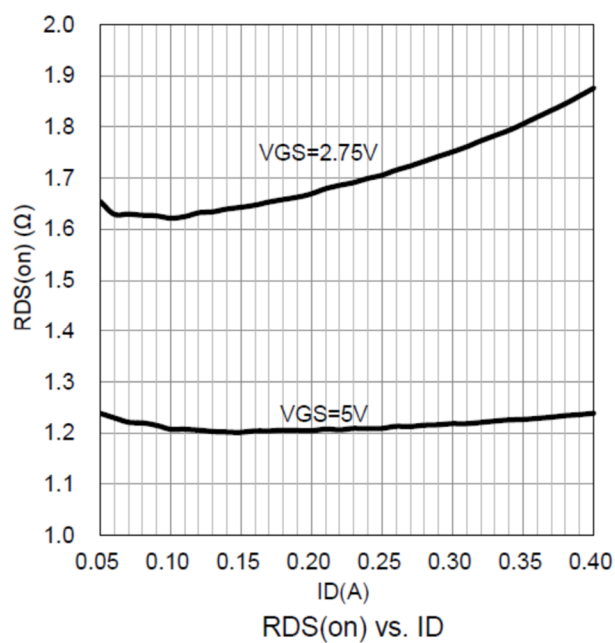
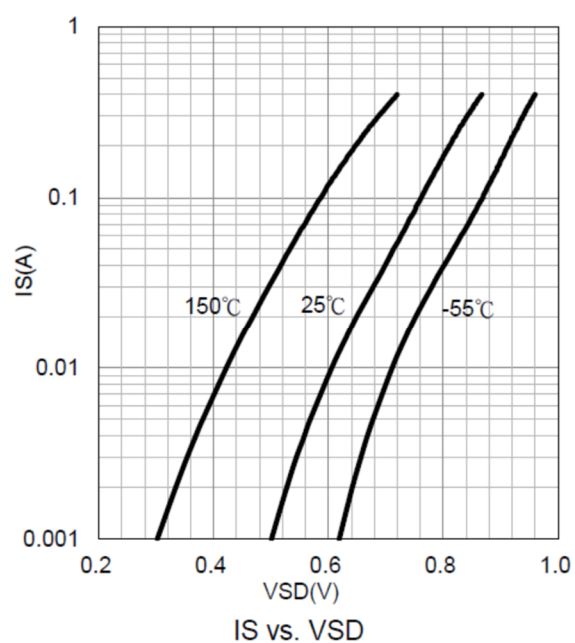
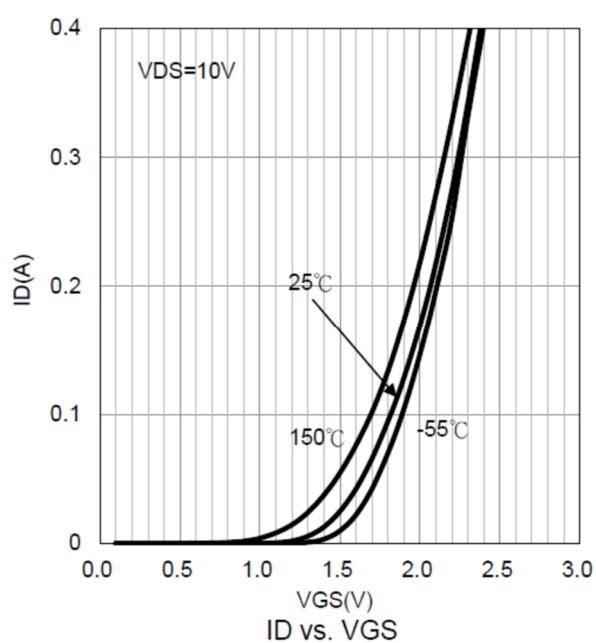
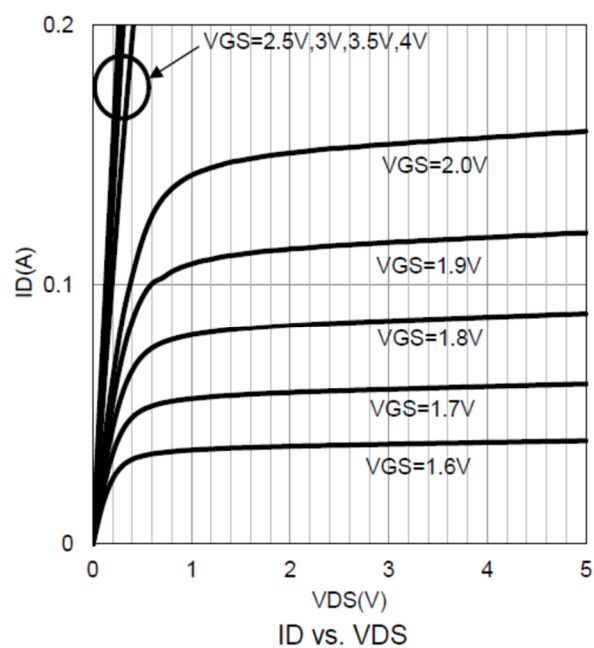
Electrical Characteristics

$T_A=25^{\circ}\text{C}$ Unless otherwise noted

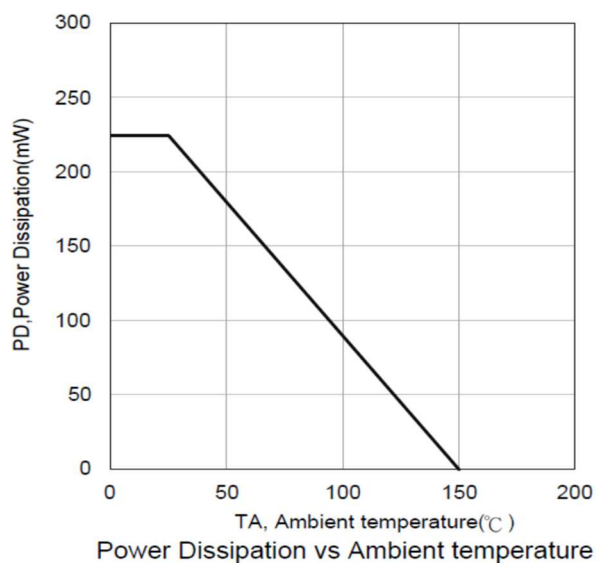
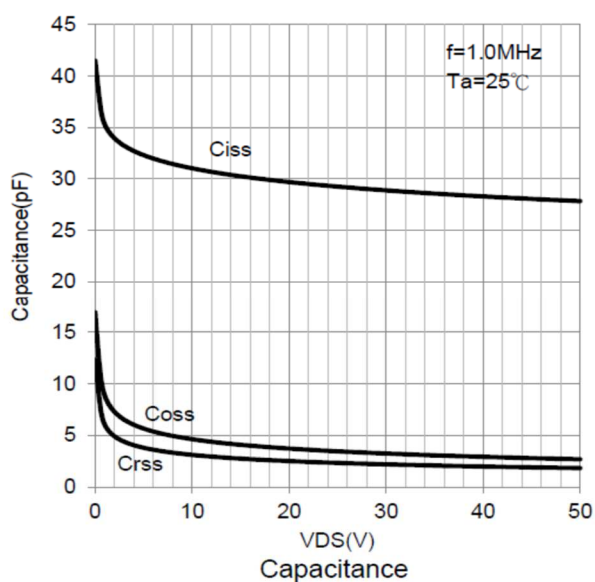
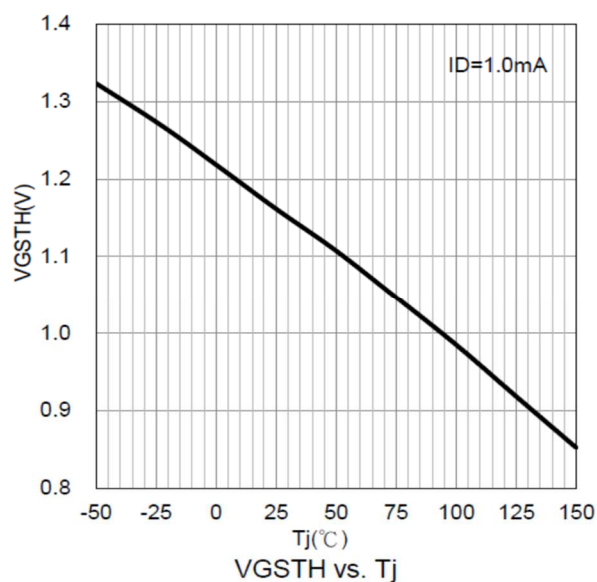
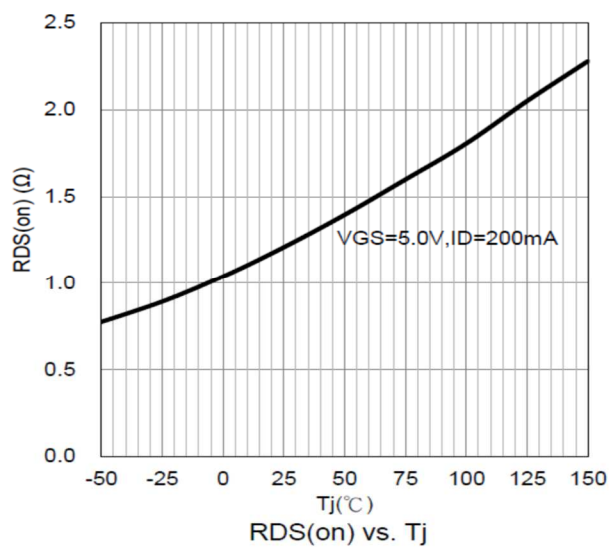
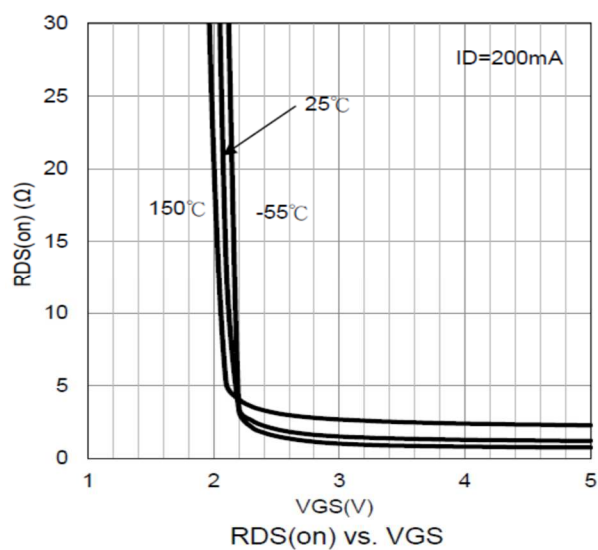
Symbol	Parameter	Conditions	Min	Typ	Max	Unit
Static						
$V_{(BR)DSS}$	Drain-Source Breakdown Voltage	$V_{GS}=0\text{V}, I_D=250\mu\text{A}$	60	-	-	V
$V_{GS(th)}$	Gate Threshold Voltage	$V_{DS}=V_{GS}, I_D=250\mu\text{A}$	0.8	-	1.5	V
I_{GSSF}	Gate Leakage Current , Forward	$V_{DS}=0\text{V}, V_{GS}=20\text{V}$			10	μA
I_{GSSR}	Gate Leakage Current , Reverse	$V_{DS}=0\text{V}, V_{GS}=-20\text{V}$			-10	μA
I_{DSS}	Zero Gate Voltage Drain Current	$V_{DS}=250\text{V}, V_{GS}=0\text{V}$			0.1	μA
		$V_{DS}=50\text{V}, V_{GS}=0\text{V},$			0.5	
$R_{DS(on)}$	Drain-Source On-Resistance	$V_{GS}=4.5\text{V}, I_D=0.2\text{A}$		-	2.5	Ω
		$V_{GS}=2.5\text{V}, I_D=0.1\text{A}$	-	-	4	
g_{FS}	Forward Transconductance	$V_{DS}=25\text{V}, I_D=0.2\text{A}$	100	-	-	mS

Dynamic					
C_{iss}	Input Capacitance	$V_{DS}=25V, V_{GS}=0V,$ $f=1MHz$		22.8	pF
C_{oss}	Output Capacitance			3.5	
C_{rss}	Reverse Transfer Capacitance			2.9	
$t_{d(on)}$	Turn-On Time	$V_{DD}=30V, I_D=0.5A,$ $V_{GS}=10V, R_G=25\Omega$		3.8	ns
$t_{d(off)}$	Turn-Off Time			19	

Typical Performance Characteristics

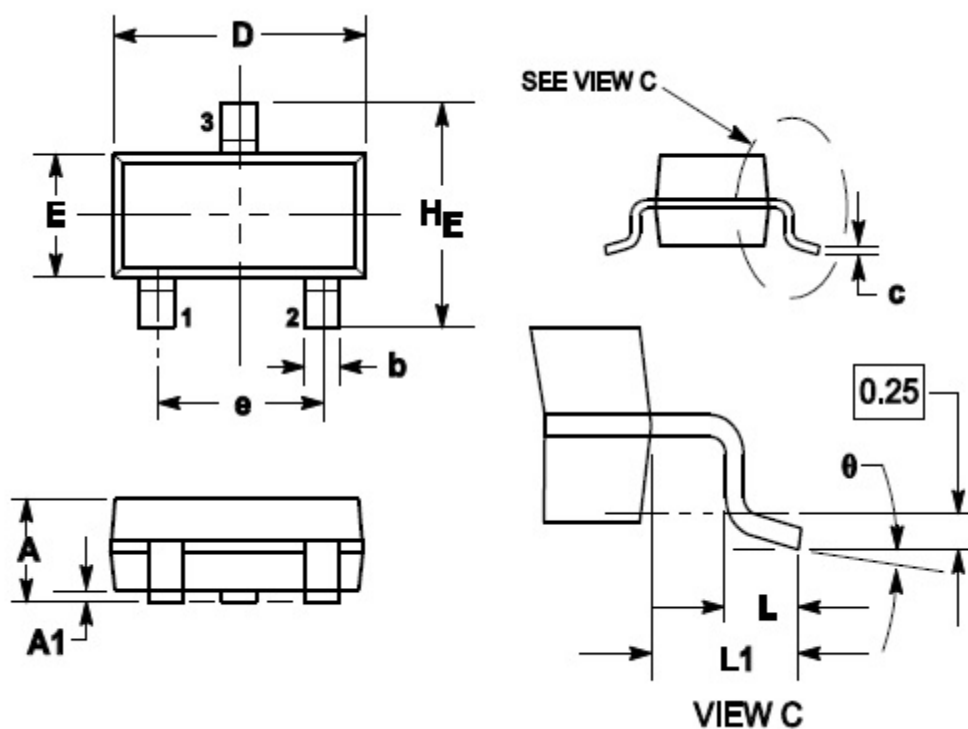


Typical Performance Characteristics (Continue)



Package Dimension

SOT-23



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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