

GSMBSS139W

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.

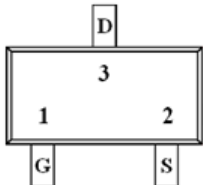
Features

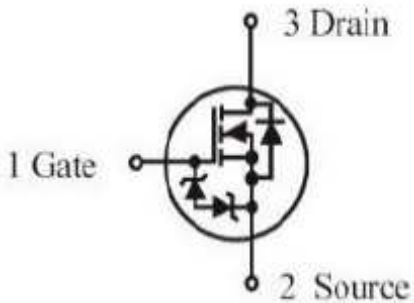
- 60V, 0.2A, $R_{DS(ON)}=2.5\Omega@V_{GS}=4.5V$
- Improved dv/dt Capability
- Fast Switching
- Green Device Available
- SOT-323 Package Design
- ESD Protected : 1500V

Applications

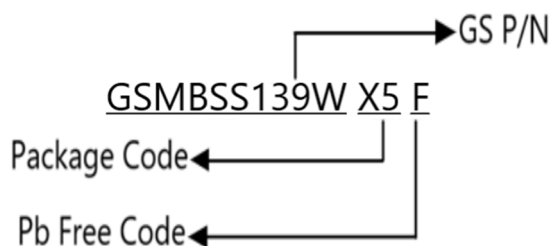
- Notebook
- Load Switch
- LED Applications

Packages & Pin Assignments

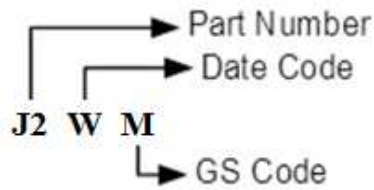
GSMBSS139WX5F (SOT-323)	
 Top Views	
Pin	Description
1	Gate
2	Source
3	Drain



Ordering Information



Marking Information



Part Number	Package	Part Marking	Quantity
G SMBSS139WX5F	SOT-323	J2WM	3000pcs

Absolute Maximum Ratings

T_A=25°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°C	0.2	A
I _{DM}	Pulsed Drain Current	0.8	A
P _D	Power Dissipation (T _A =25°C)	0.225	W
	Power Dissipation (Derate above 25°C)	0.0018	W/°C
T _J	Operating Junction Temperature Range	-55 to +150	°C
T _{STG}	Storage Temperature Range	-55 to +150	°C
R _{θJA}	Thermal Resistance-Junction to Ambient	556	°C/W
TL	Maximum Lead Temperature for Soldering Purpose, for 10 Seconds	260	°C

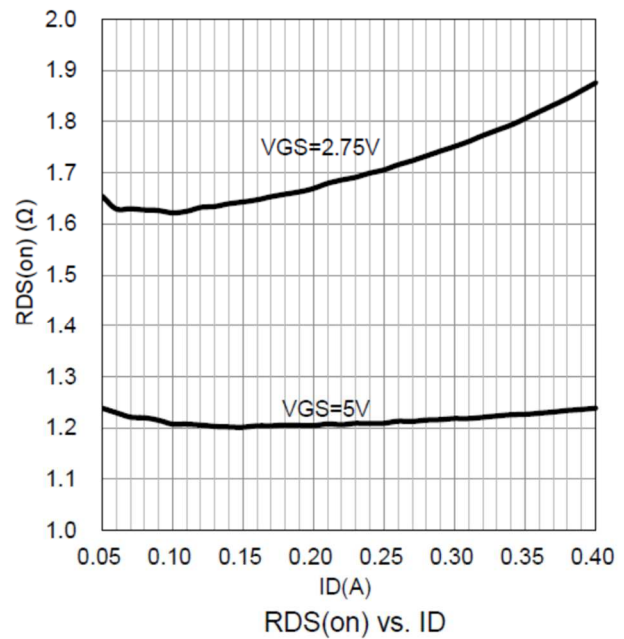
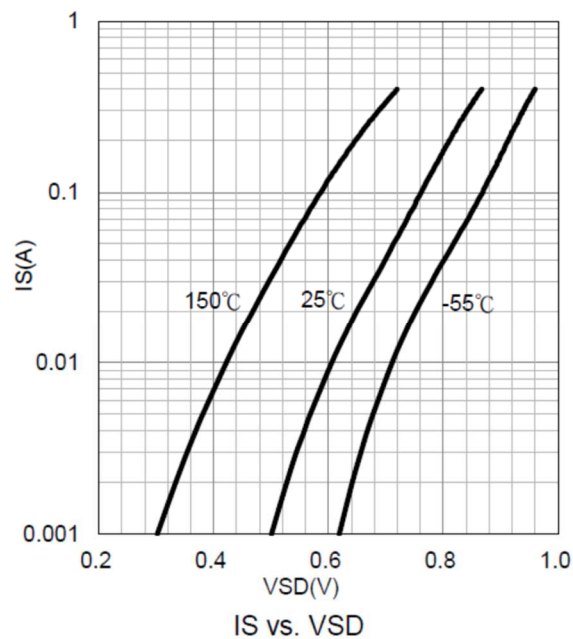
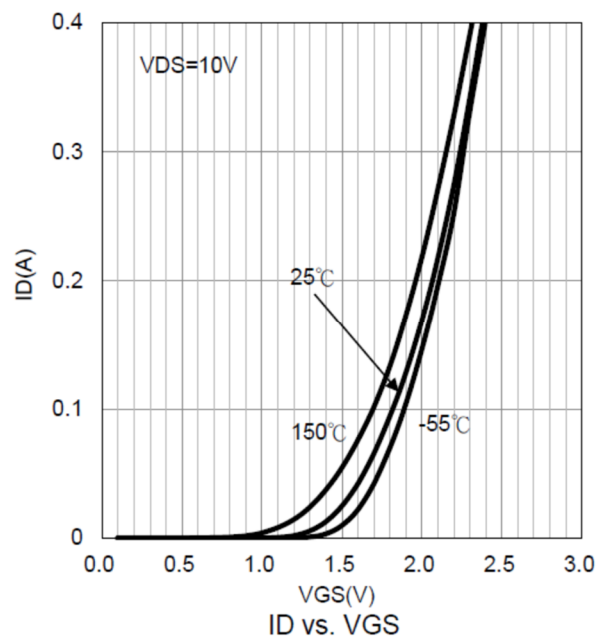
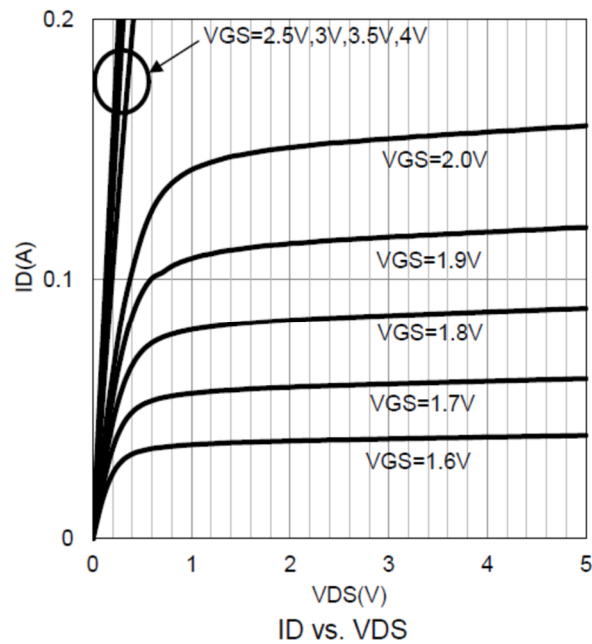
Electrical Characteristics

T_A=25°C Unless otherwise noted

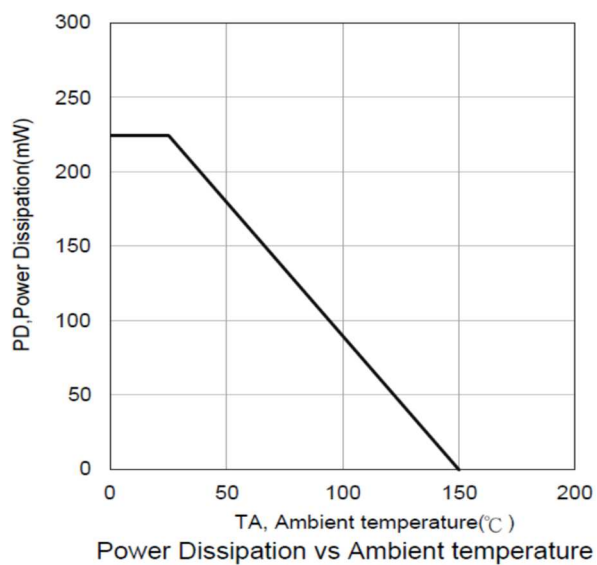
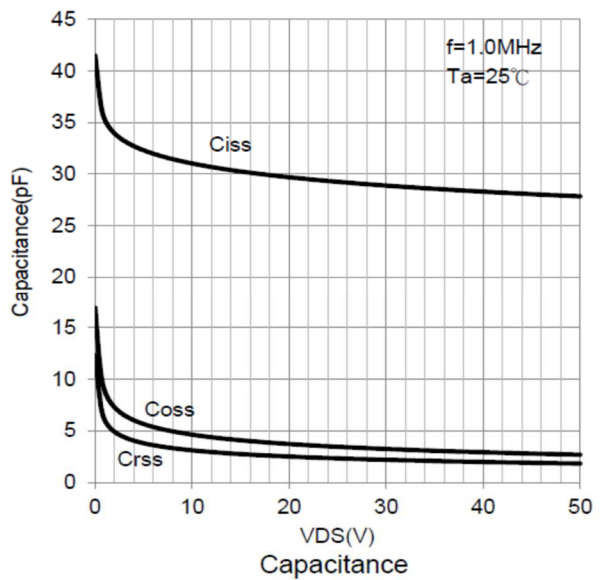
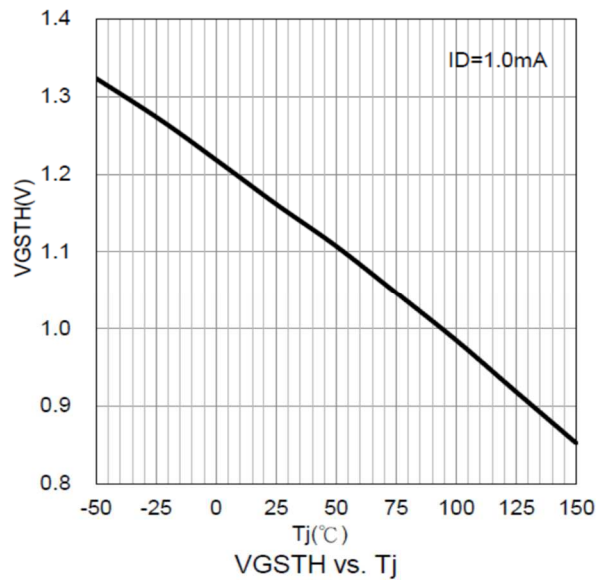
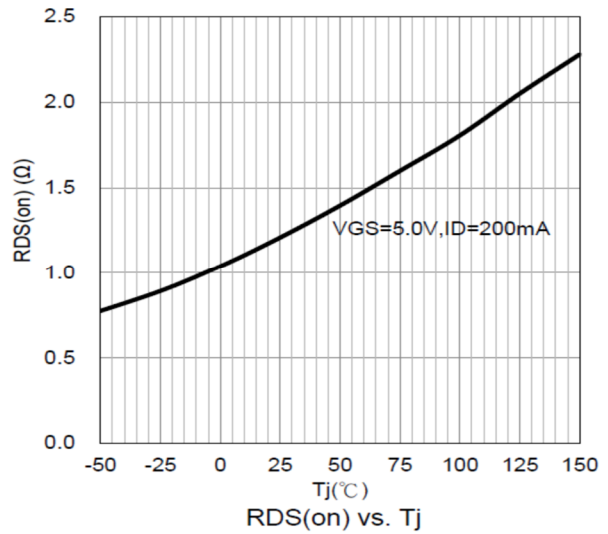
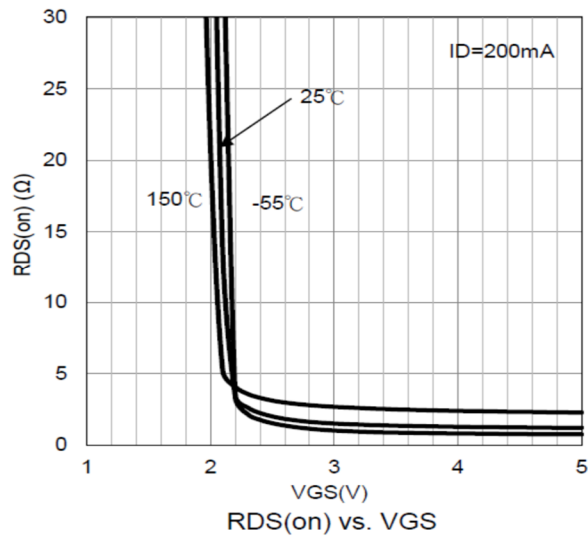
Symbol	Parameter	Conditions	Min	Typ	Max	Unit
Static						
V _{(BR)DSS}	Drain-Source Breakdown Voltage	V _{GS} =0V, I _D =250uA	60	-	-	V
V _{GS(th)}	Gate Threshold Voltage	V _{DS} =V _{GS} , I _D =250uA	0.85	-	1.45	V
I _{GSSF}	Gate Leakage Current , Forward	V _{DS} =0V, V _{GS} =20V			10	μA
I _{GSSR}	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	
R _{DS(on)}	Drain-Source On-Resistance	V _{GS} =4.5V, I _D =0.2A		-	2.25	Ω
		V _{GS} =2.5V, I _D =0.1A	-	-	4.05	
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			3.5	
C_{rss}	Reverse Transfer Capacitance			2.9	
$t_{d(on)}$	Turn-On Time	$V_{DD}=30V, I_D=1A,$ $V_{GS}=10V, R_G=25\Omega$		3.8	ns
$t_{d(off)}$	Turn-Off Time			19	

Typical Performance Characteristics

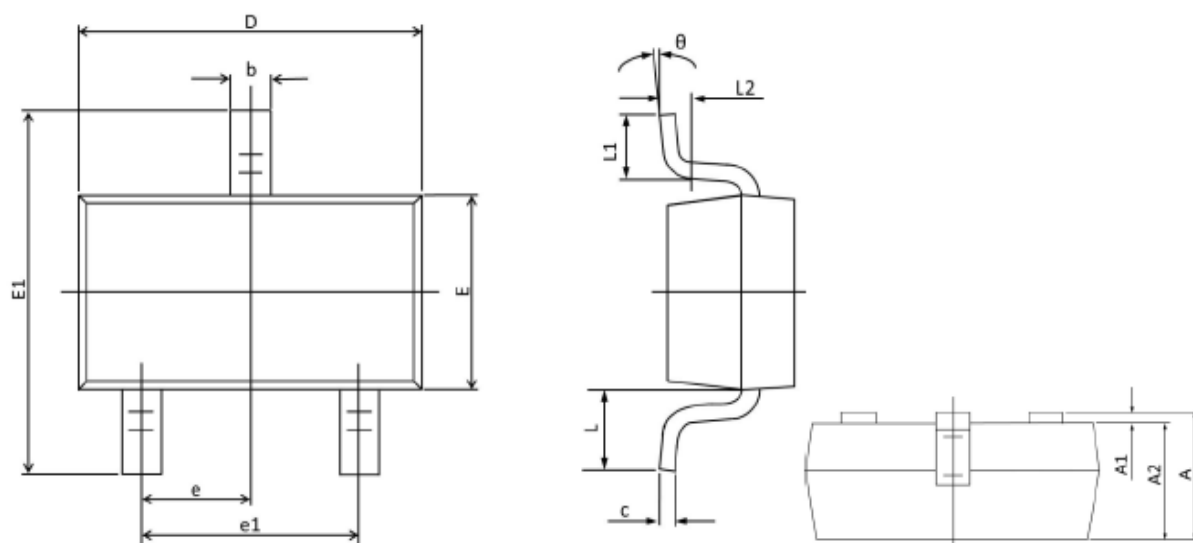


Typical Performance Characteristics (Continue)



Package Dimension

SOT-323



Dimensions

Symbol	Millimeters		Inches	
	Min	Max	Min	Max
A	0.800	1.100	0.031	0.043
A1	0.000	0.100	0.000	0.004
A2	0.800	1.000	0.031	0.039
b	0.200	0.400	0.008	0.016
c	0.080	0.250	0.003	0.010
D	1.800	2.200	0.071	0.087
E	1.150	1.350	0.045	0.053
E1	1.800	2.450	0.071	0.096
e	0.650 (BSC)		0.026 (BSC)	
e1	1.200	1.40	0.047	0.055
L	0.525 (REF)		0.021 (REF)	
L1	0.150	0.460	0.006	0.018
L2	0.000	0.200	0.000	0.008
θ	0°	8°	0°	8°

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