GSMBSS139TFF

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

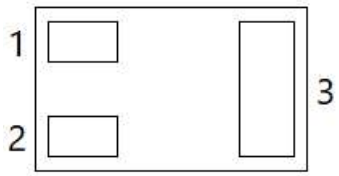
- 60V, 0.2A, $R_{DS(ON)}$=2.5Ω@V_{GS}=4.5V
- Improved dv/dt Capability
- Fast Switching
- 100% EAS Guaranteed
- Green Device Available
- ESD Protected : 1500V

Applications

- Notebook
- Load Switch
- LED Applications

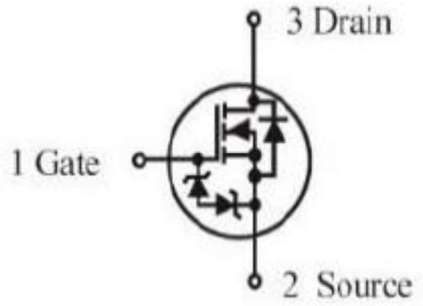
Packages & Pin Assignments

GSMBSS139TFF (DFN1006-3L)

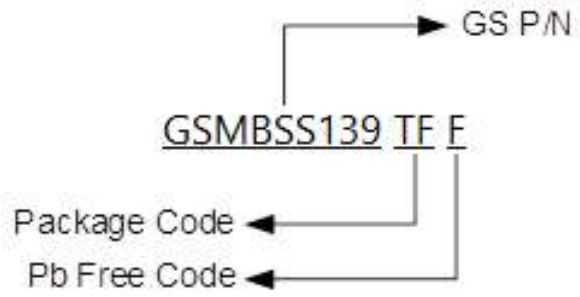


Transparent top view

Pin	Description
1	Gate
2	Source
3	Drain

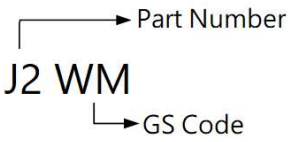


Ordering Information



Part Number	Package	Quantity Reel
GSMBSS139TFF	DFN1006-3L	10000 PCS

Marking Information



Absolute Maximum Ratings

T_A=25ºC Unless otherwise noted

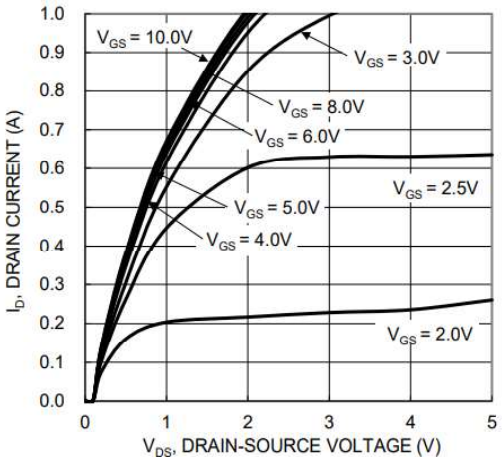
Symbol	Parameter	Limits	Unit
V_{DS}	Drain-Source Voltage	60	V
V_{GS}	Gate-Source Voltage	±20	V
I_D	Continuous Drain Current (T_A=25℃)	0.33	A
I_{DM}	Pulsed Drain Current	0.8	A
P_D	Power Dissipation (T_A=25℃)	0.36	W
T_J	Operating Junction Temperature Range	-55 to +150	℃
T_{STG}	Storage Temperature Range	-55 to +150	℃
$R_{\theta JA}$	Thermal Resistance-Junction to Ambient	350	℃/W

Electrical Characteristics

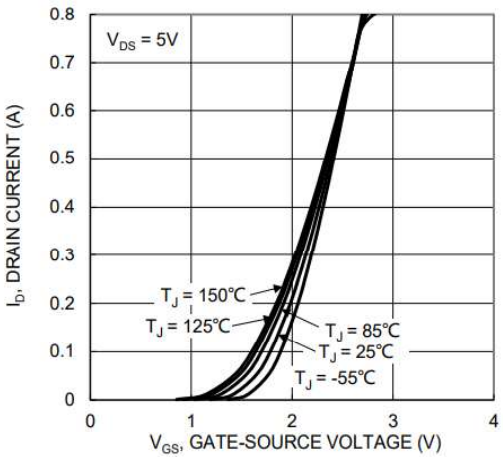
T_A=25℃ Unless otherwise noted

Symbol	Parameter	Conditions	Min	Typ	Max	Unit
Static						
$V_{(BR)DSS}$	Drain-Source Breakdown Voltage	V_{GS}=0V, I_D=250uA	60	-	-	V
$V_{GS(th)}$	Gate Threshold Voltage	V_{DS}=V_{GS}, I_D=250uA	0.8	-	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	
$R_{DS(on)}$	Drain-Source On-Resistance	V_{GS}=10V, I_D=0.5A		-	1.5	Ω
		V_{GS}=4.5V, I_D=0.2A		-	2.5	
		V_{GS}=2.5V, I_D=0.1A	-	-	4.1	
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=0.5A, V_{GS}=10V,R_G=25Ω		3.8		ns
$t_{d(off)}$	Turn-Off Time			19		

Typical Performance Characteristics



Typical Output Characteristic



Typical Transfer Characteristic

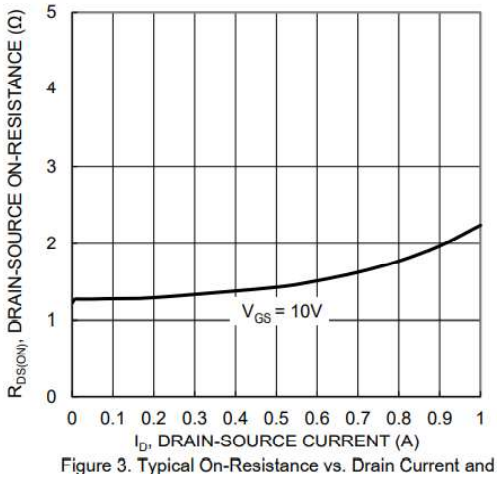


Figure 3. Typical On-Resistance vs. Drain Current and

Typical On-Resistance vs. Drain Current and Gate Voltage

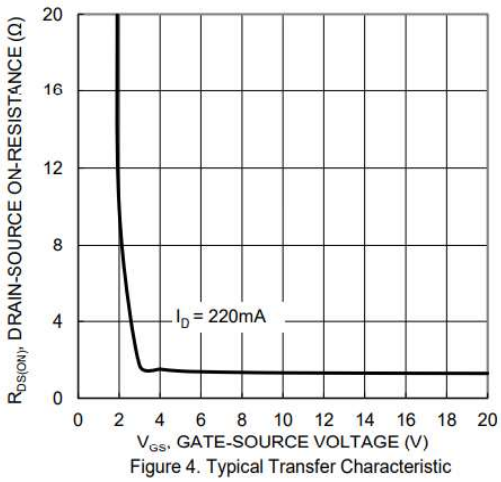
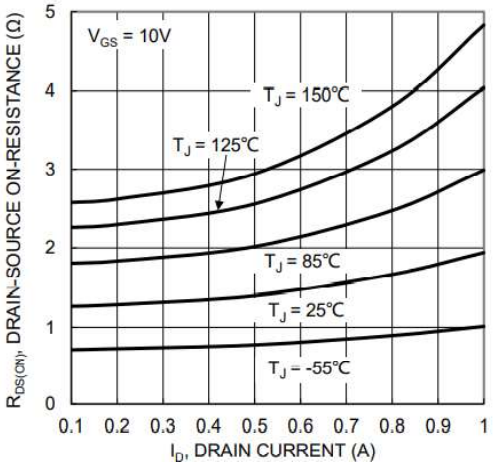
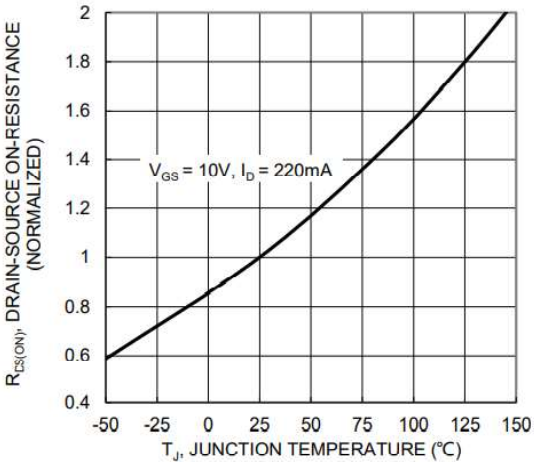


Figure 4. Typical Transfer Characteristic

Typical Transfer Characteristic

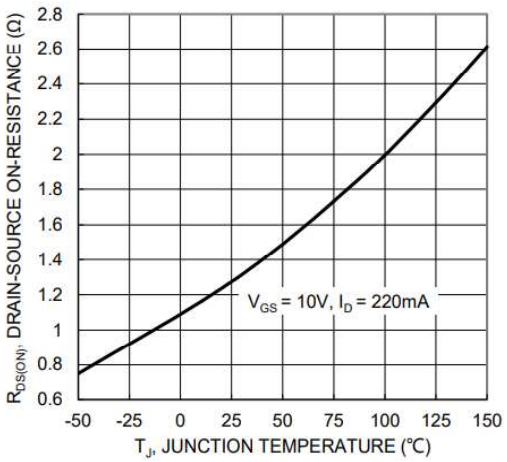


Typical On-Resistance vs. Drain and Junction Temperature

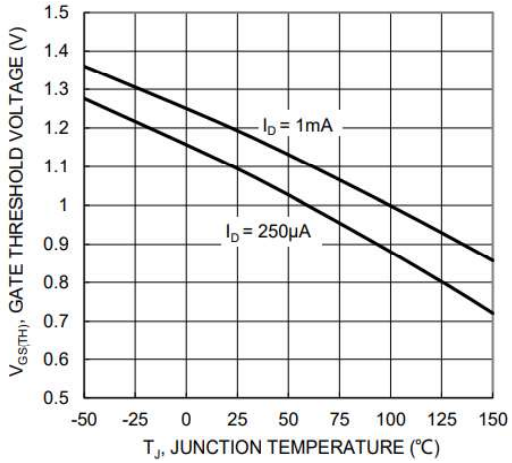


On-Resistance Variation with Junction Temperature

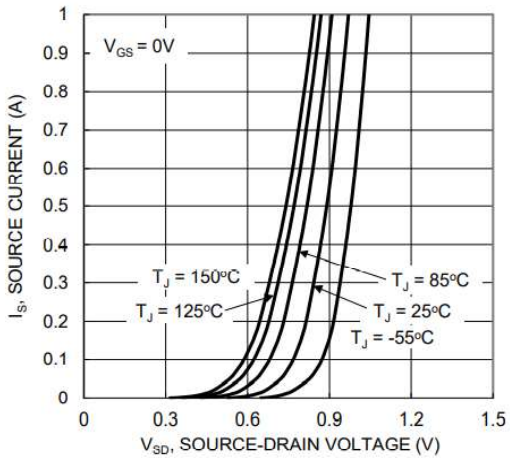
Typical Performance Characteristics (Continue)



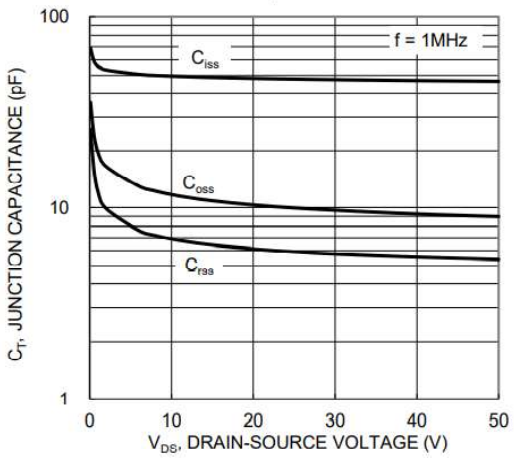
On-Resistance Variation with Junction Temperature



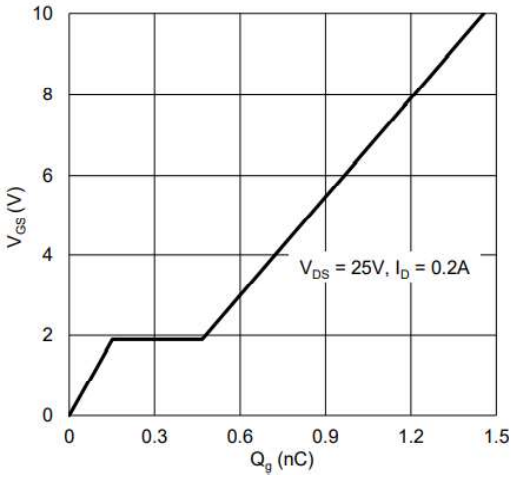
Gate Threshold Variation vs. Junction Temperature



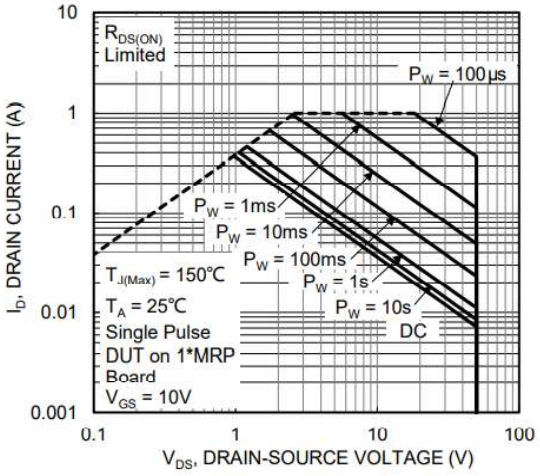
Diode Forward Voltage vs. Current



Typical Junction Capacitance



Gate Charge



Safe Operation Area

Typical Performance Characteristics (Continue)

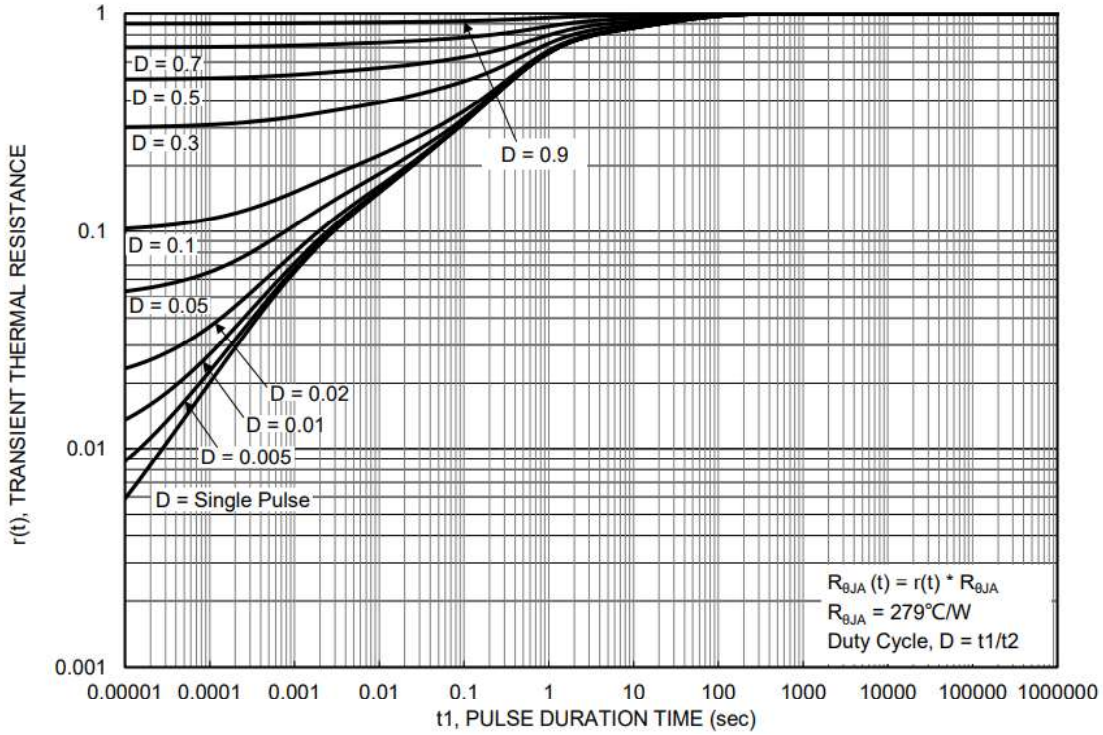
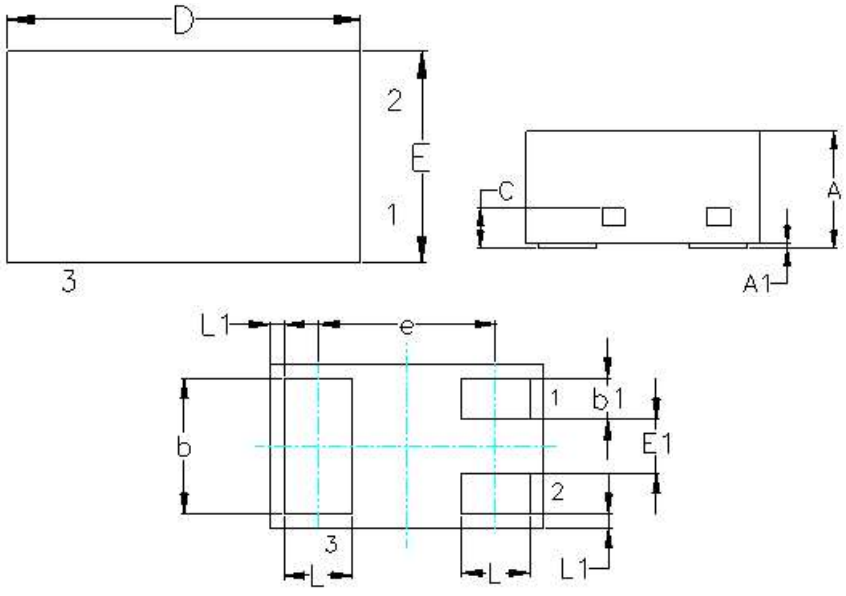


Figure13 Transient Thermal Resistance

Package Dimension

DFN1006-3L



Dimensions				
SYMBOL	Millimeters		Inches	
	MIN	MAX	MIN	MAX
A	0.450	0.550	0.018	0.022
A1	0.000	0.050	0.000	0.002
b	0.450	0.550	0.018	0.022
b1	0.100	0.200	0.004	0.008
C	0.120	0.180	0.005	0.007
D	0.950	1.050	0.037	0.041
E	0.550	0.650	0.022	0.026
E1	0.150	0.250	0.006	0.010
e	0.650 BSC		0.026 BSC	
L	0.200	0.300	0.008	0.012
L1	0.050 REF		0.002 REF	

NOTICE

Information furnished is believed to be accurate and reliable. However Globaltech Semiconductor assumes no responsibility for the consequences of use of such information nor for any infringement of patents or other rights of third parties, which may result from its use. No license is granted by implication or otherwise under any patent or patent rights of Globaltech Semiconductor. Specifications mentioned in this publication are subject to change without notice. This publication supersedes and replaces all information without express written approval of Globaltech Semiconductor.

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