

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, $R_{DS(ON)}=3.5\Omega@V_{GS}=5V$
- Improved dv/dt Capability
- Fast Switching
- Low Threshold Voltage($V_{GS(th)}$) : 0.5...1.5V)
Makes It Ideal for Low Voltage Application
- 100% EAS Guaranteed
- Green Device Available
- SOT-23 Package Design
- ESD Protected : 1500V

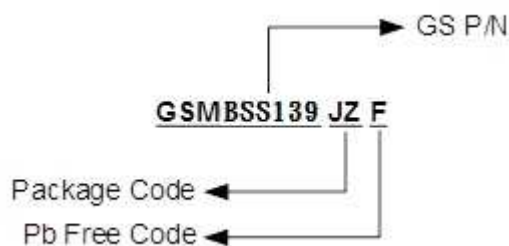
Applications

- Notebook
- Load Switch
- LED Applications

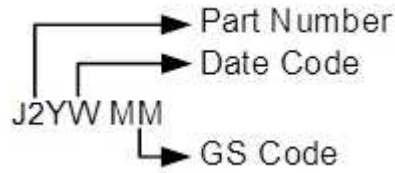
Packages & Pin Assignments

GSMBSS139JZF (SOT-23)	
<p style="text-align: center;">SOT-23(TO-236) Top Views</p>	
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	50	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	$^{\circ}\text{C}$

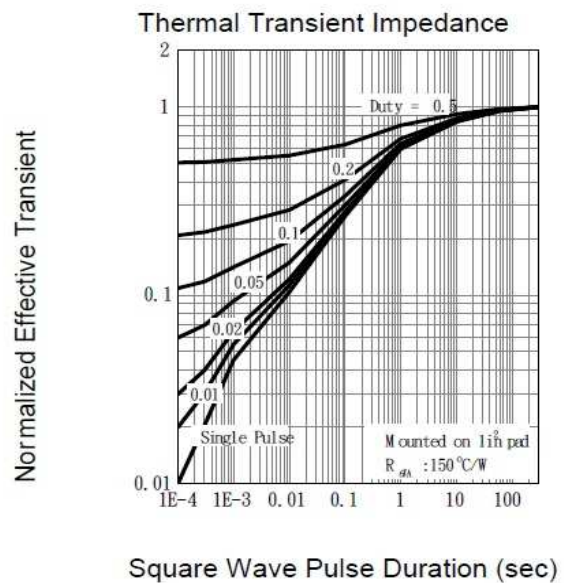
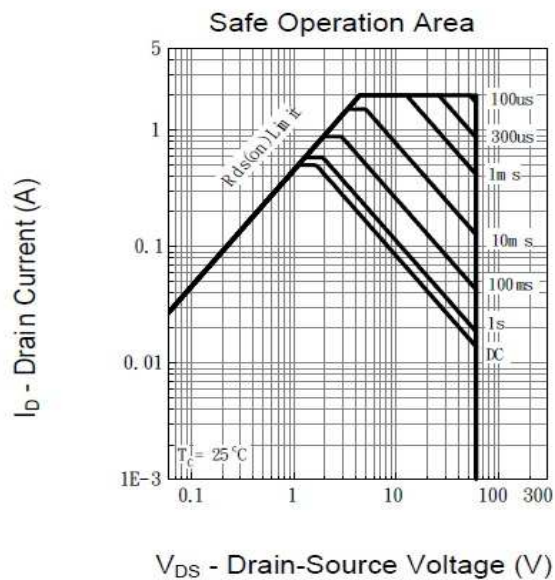
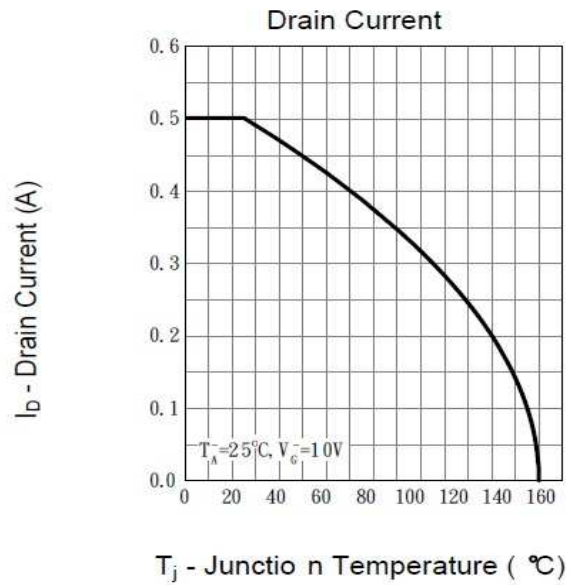
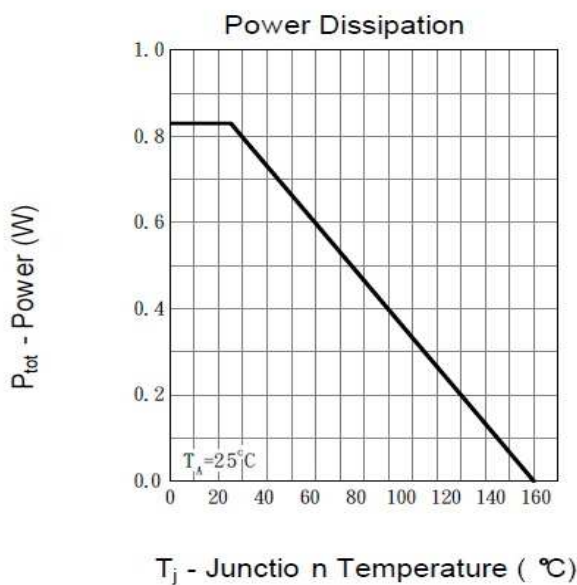
Electrical Characteristics

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

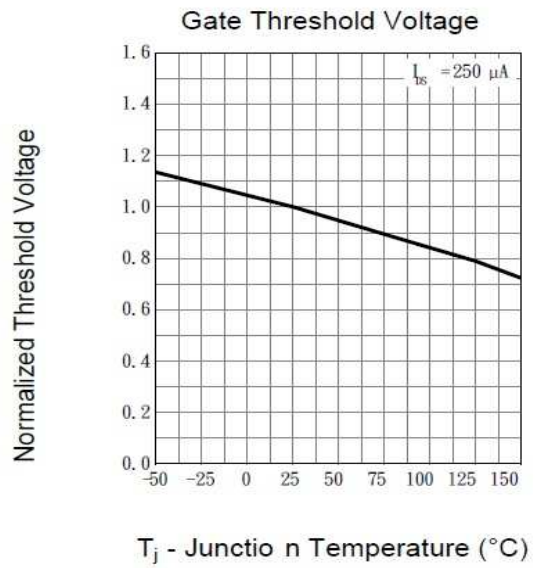
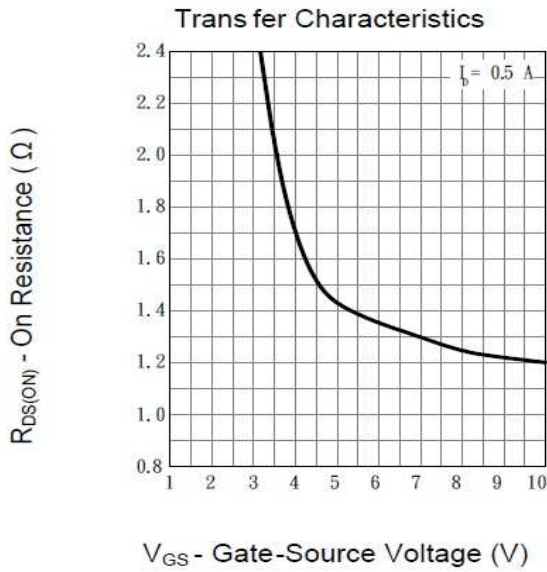
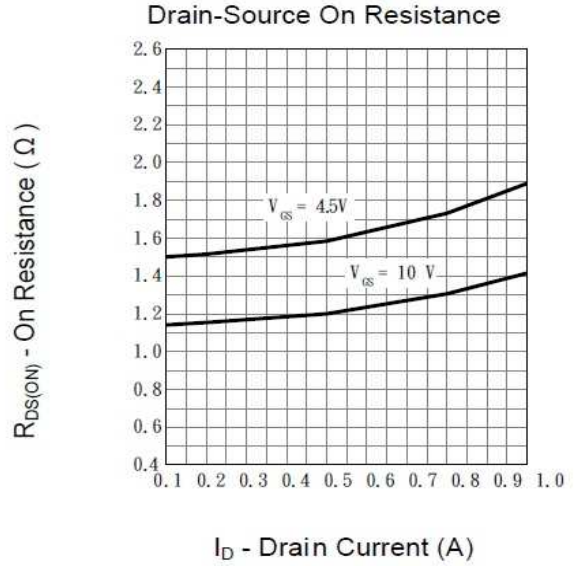
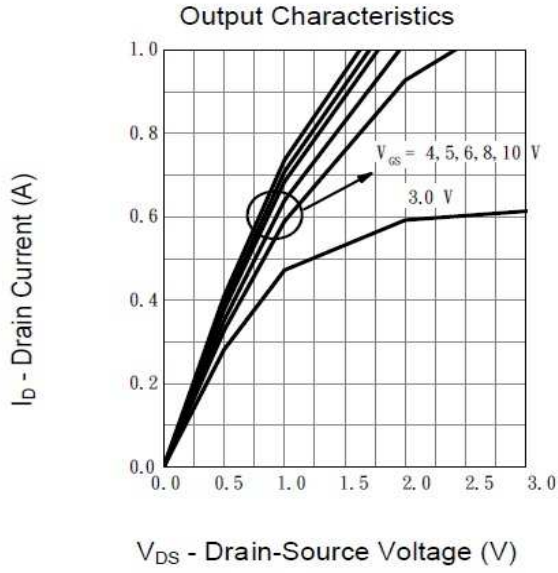
Symbol	Parameter	Conditions	Min	Typ	Max	Unit
Static						
$V_{(BR)DSS}$	Drain-Source Breakdown Voltage	$V_{GS}=0\text{V}, I_D=250\mu\text{A}$	50	-	-	V
$V_{GS(th)}$	Gate Threshold Voltage	$V_{DS}=V_{GS}, I_D=1\text{mA}$	0.5	-	1.5	V
I_{GSSF}	Gate Leakage Current · Forward	$V_{DS}=0\text{V}, V_{GS}=20\text{V}$			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	
I_S	Continuous Source Current	$V_G=V_D=0\text{V}$, Force Current			2	A
I_{SM}	Pulsed Source Current				8	
$R_{DS(on)}$	Drain-Source On-Resistance	$V_{GS}=5.0\text{V}, I_D=0.2\text{A}$		-	3.5	Ω
		$V_{GS}=2.75\text{V}, I_D<0.2\text{A}$	-	5.6	10	
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		3.8		
C_{rss}	Reverse Transfer Capacitance		2.9		
$t_{d(on)}$	Turn-On Time	$V_{DD}=30V, I_D=1A,$ $V_{GS}=10V, R_G=25\Omega$	3.8		ns
$t_{d(off)}$	Turn-Off Time		19		

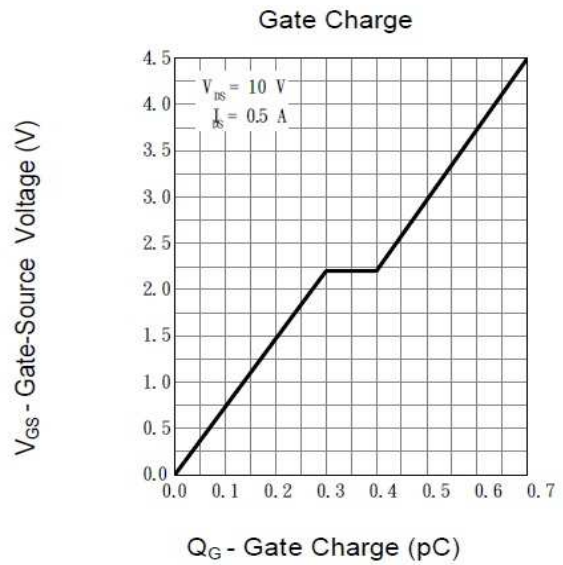
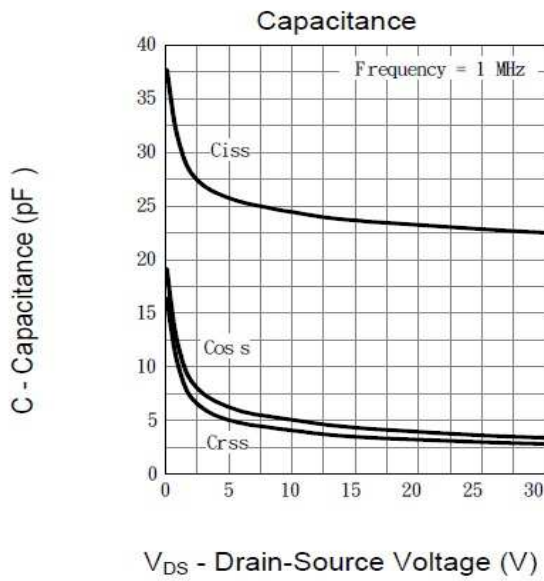
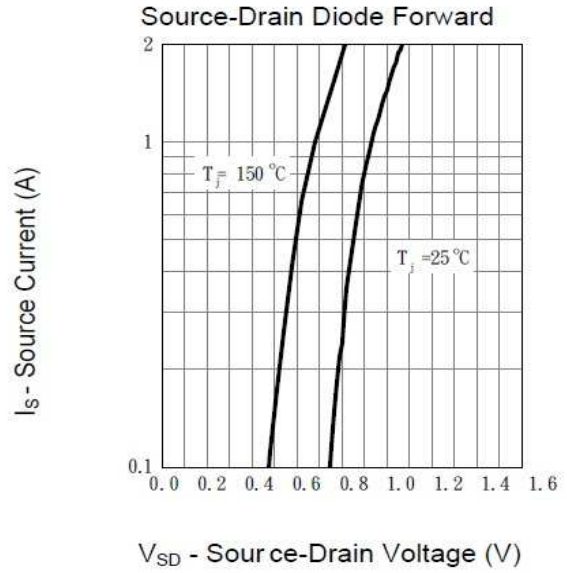
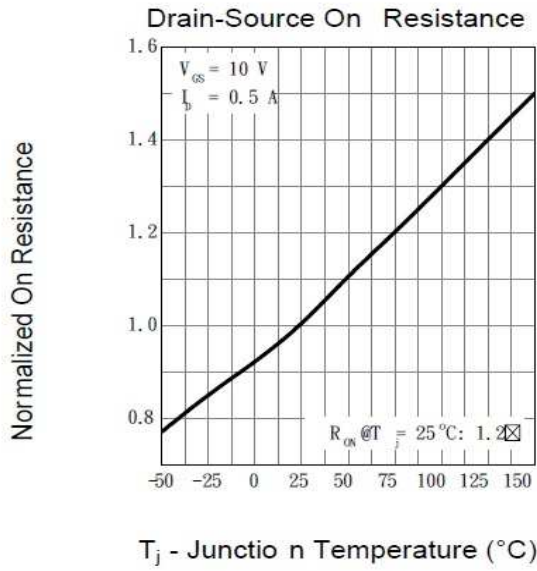
Typical Performance Characteristics



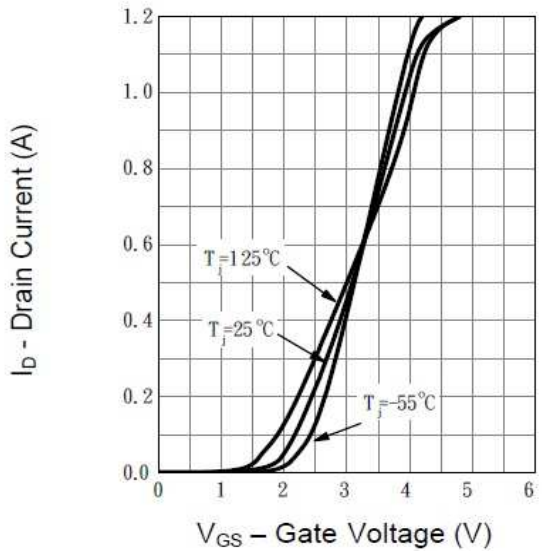
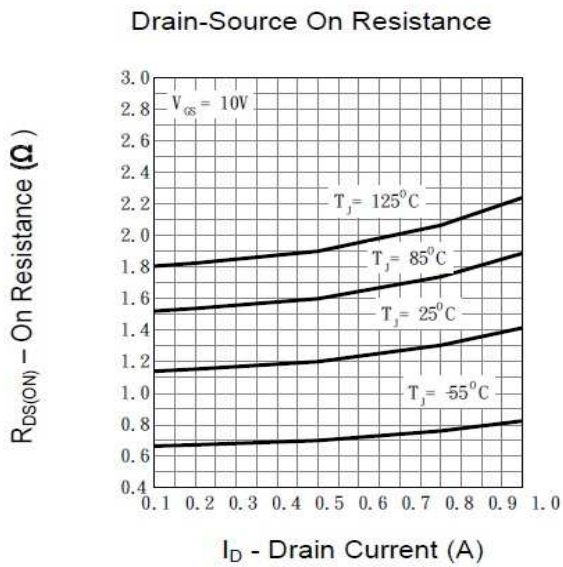
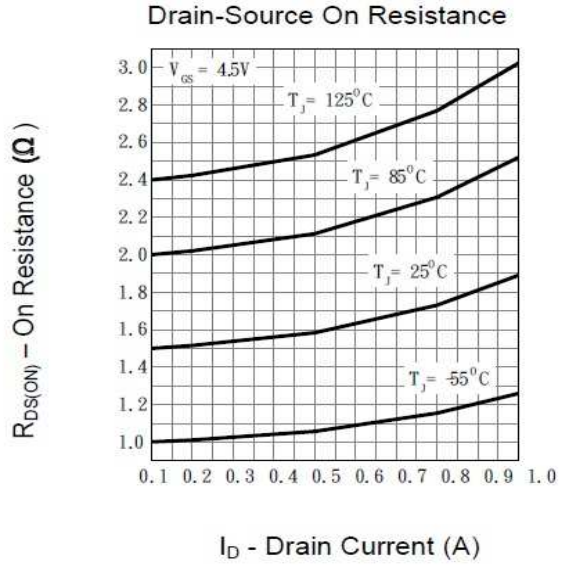
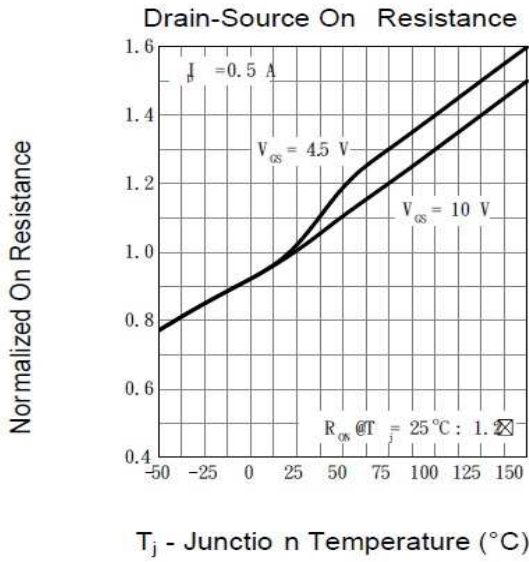
Typical Performance Characteristics (Continue)



Typical Performance Characteristics (Continue)

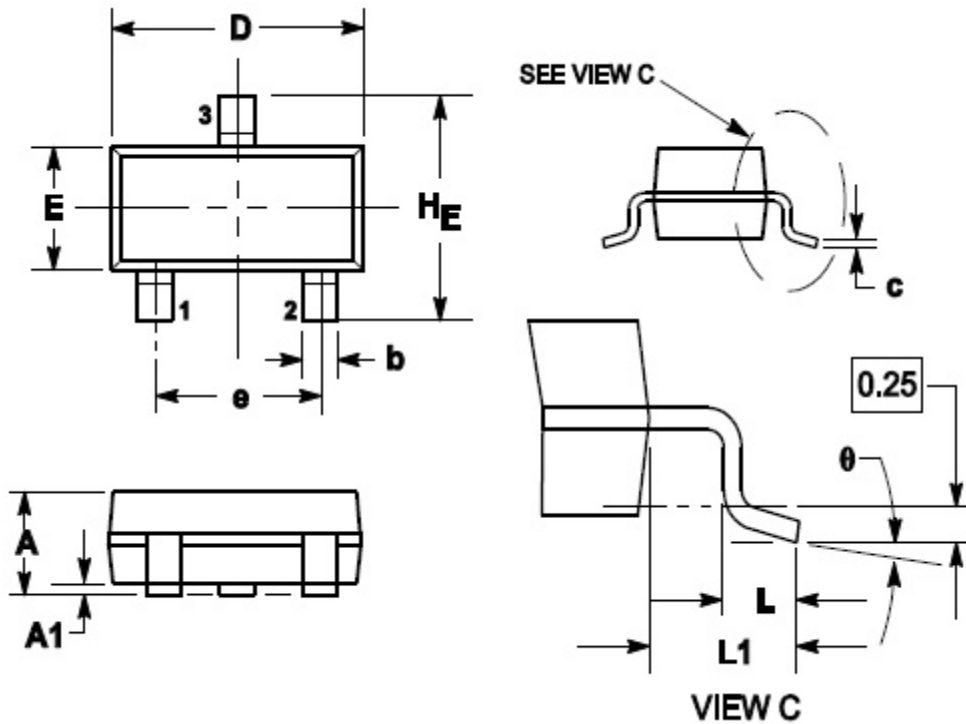


Typical Performance Characteristics (Continue)



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°

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