GSM1072K

20V N-Channel Enhancement Mode MOSFET

Product Description

GSM1072K, N-Channel enhancement mode MOSFET, uses Advanced Trench Technology to provide excellent $R_{DS(ON)}$, low gate charge.

These devices are particularly suited for low voltage power management, such as smart phone and notebook computer, and low in-line power loss are needed in commercial industrial surface mount applications.

Features

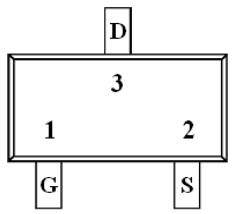
- 20V/0.95A,$R_{DS(ON)}$=380mΩ@V_{GS}=4.5V
- 20V/0.75A,$R_{DS(ON)}$=450mΩ@V_{GS}=2.5V
- 20V/0.65A,$R_{DS(ON)}$=800mΩ@V_{GS}=1.8V
- 20V/0.65A,$R_{DS(ON)}$=1000mΩ@V_{GS}=1.5V
- Low Offset (Error) Voltage
- Low-Voltage Operation
- High-Speed Circuits
- Low Battery Voltage Operation
- ESD Protected
- SOT-723 package design

Applications

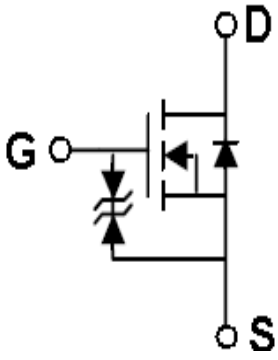
- Power Management in Note book
- Portable Equipment
- Battery Powered System
- DC/DC Converter
- Load Switch
- DSC
- LCD Display inverter

Packages & Pin Assignments

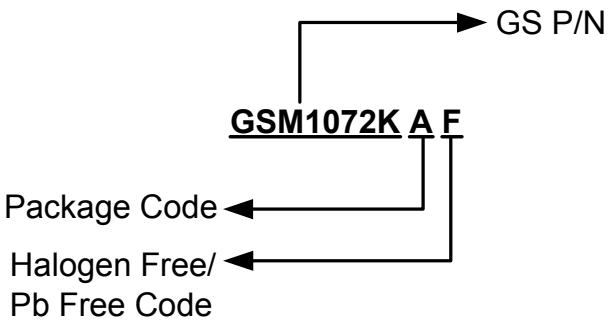
GSM1072KAF (SOT-723)



Pin	Description
1	Gate
2	Source
3	Drain

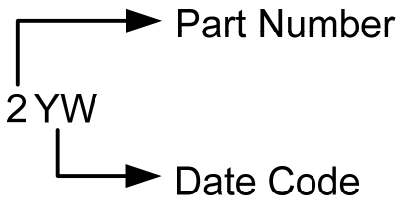


Ordering Information



Part Number	Package	Quantity Reel
GSM1072KAF	SOT-723	8000 PCS

Marking Information



Absolute Maximum Ratings

(T_A=25ºC unless otherwise noted)

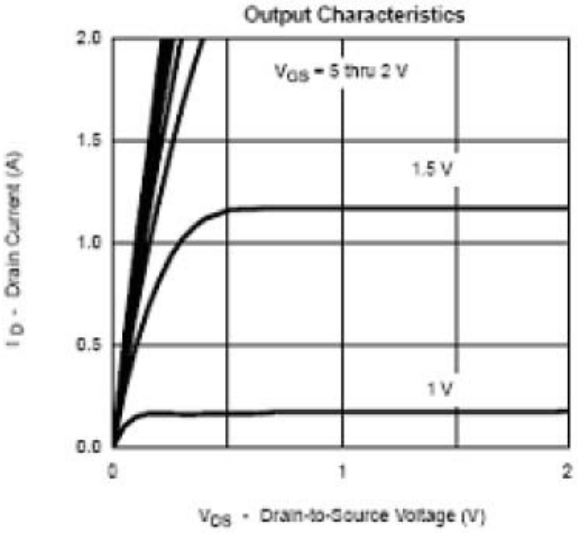
Symbol	Parameter	Typical	Unit
V_{DSS}	Drain-Source Voltage	20	V
V_{GSS}	Gate-Source Voltage	±12	V
I_D	Continuous Drain Current(T_J=150℃)	0.95	A
I_{DM}	Pulsed Drain Current	4.0	A
I_S	Continuous Source Current(Diode Conduction)	0.3	A
P_D	Power Dissipation	0.15	W
T_J	Operating Junction Temperature Range	-55 to +150	ºC
T_{STG}	Storage Temperature Range	-55 to +150	ºC

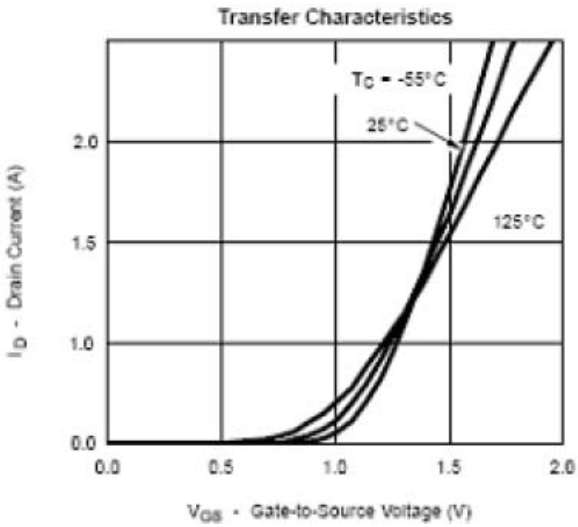
Electrical Characteristics

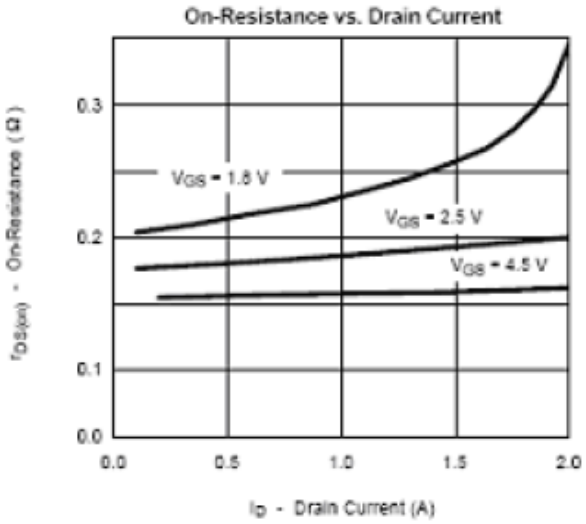
(T_A=25°C unless otherwise noted)

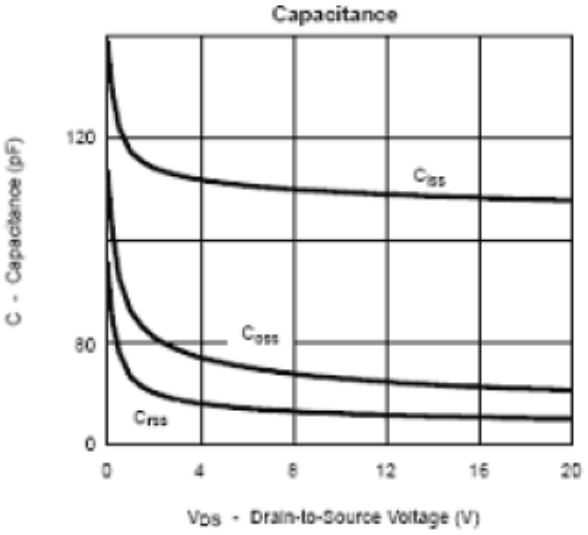
Symbol	Parameter	Conditions	Min	Typ	Max	Unit
Static						
$V_{(BR)DSS}$	Drain-Source Breakdown Voltage	V_{GS}=0V,I_D=250uA	20			V
$V_{GS(th)}$	Gate Threshold Voltage	V_{DS}=V_{GS},I_D=250uA	0.35		1.0	
I_{GSS}	Gate Leakage Current	V_{DS}=0V,V_{GS}=±12V			30	uA
I_{DSS}	Zero Gate Voltage Drain Current	V_{DS}=20V,V_{GS}=0V			1	uA
		V_{DS}=20V,V_{GS}=0V T_J=55℃			5	
$I_{D(on)}$	On-State Drain Current	V_{DS}≧4.5V,V_{GS}=5V	0.7			A
$R_{DS(on)}$	Drain-Source On-Resistance	V_{GS}=4.5V,I_D=0.95A		260	380	mΩ
		V_{GS}=2.5V,I_D=0.75A		320	450	
		V_{GS}=1.8V,I_D=0.65A		420	800	
		V_{GS}=1.5V,I_D=0.65A		500	1000	
g_{FS}	Forward Transconductance	V_{DS}=10V,I_D=0.4A		1.0		S
V_{SD}	Diode Forward Voltage	I_S=0.15A,V_{GS}=0V		0.8	1.2	V
Dynamic						
Q_g	Total Gate Charge	V_{DS}=10V,V_{GS}=4.5V, I_D=0.6A		1.2	1.5	nC
Q_{gs}	Gate-Source Charge			0.2		
Q_{gd}	Gate-Drain Charge			0.3		
$t_{d(on)}$	Turn-On Time	V_{DD}=10V,R_L=10Ω, I_D=0.5A,V_{GEN}=4.5V, R_G=6Ω		5	10	ns
t_r				8	15	
$t_{d(off)}$	Turn-Off Time			10	18	
t_f				1.2	2.8	

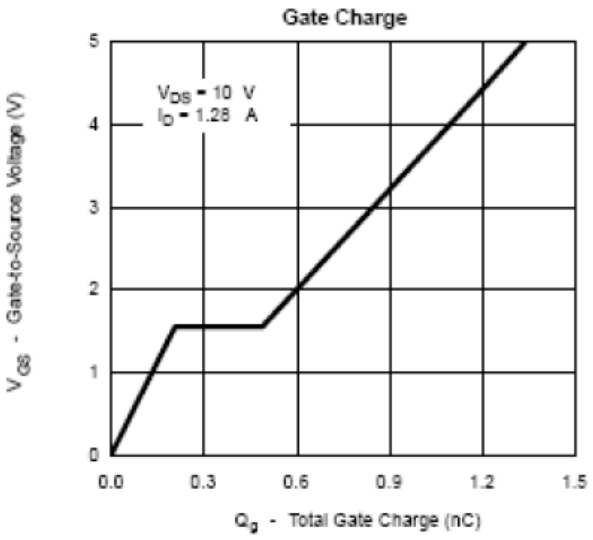
Typical Performance Characteristics

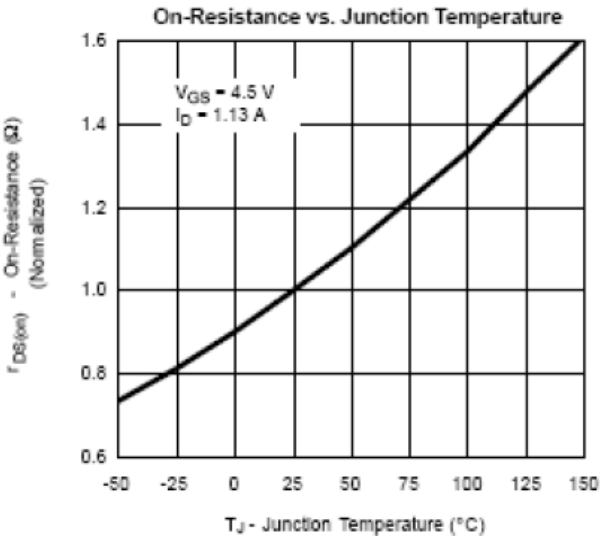




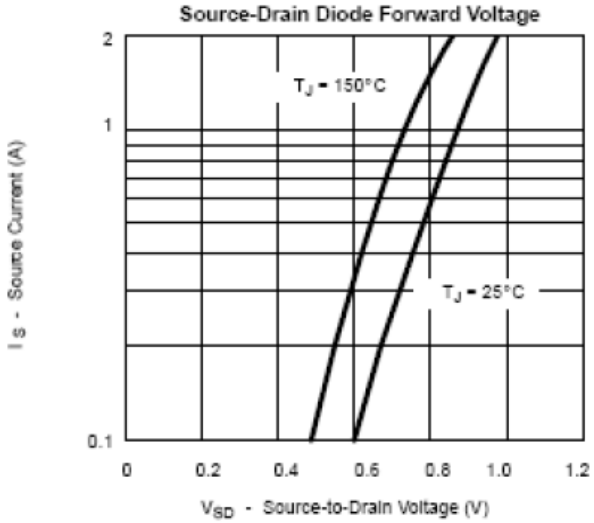


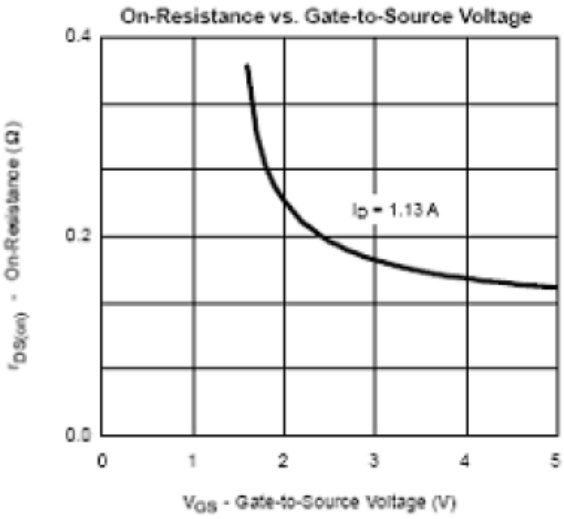


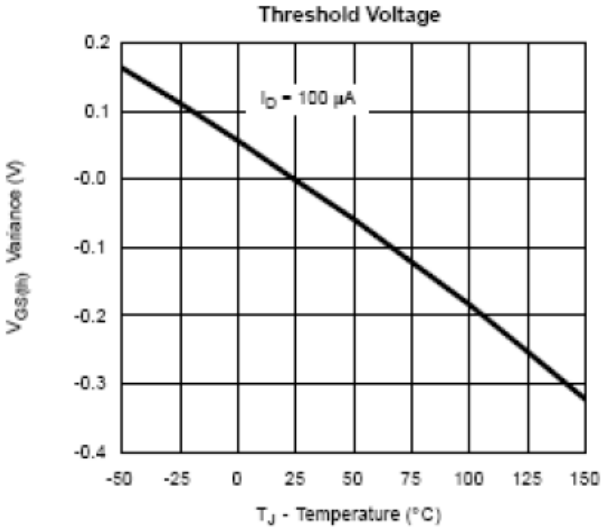


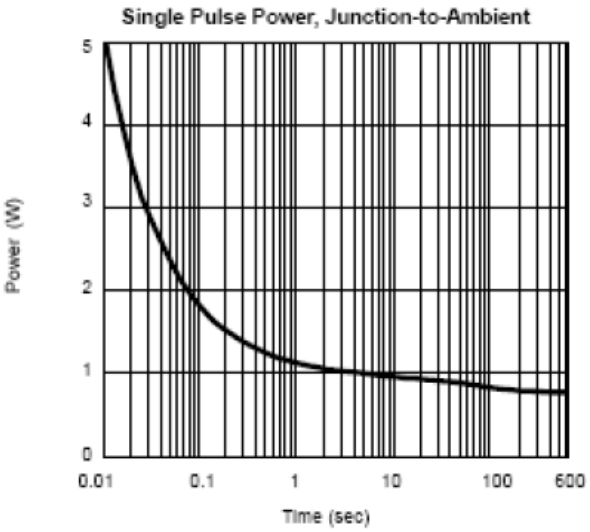


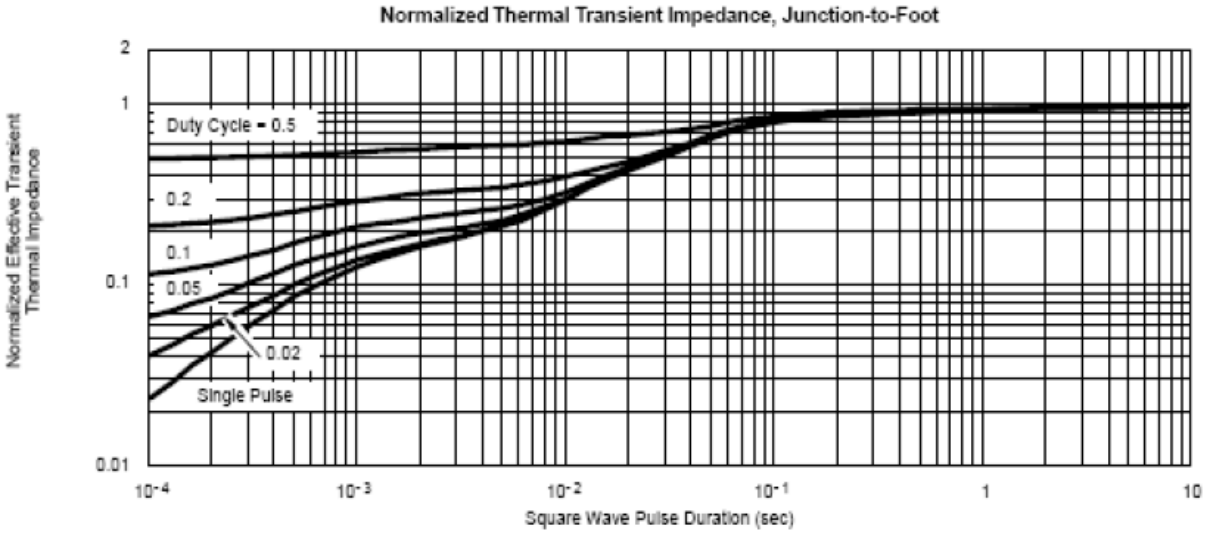
Typical Performance Characteristics (continue)





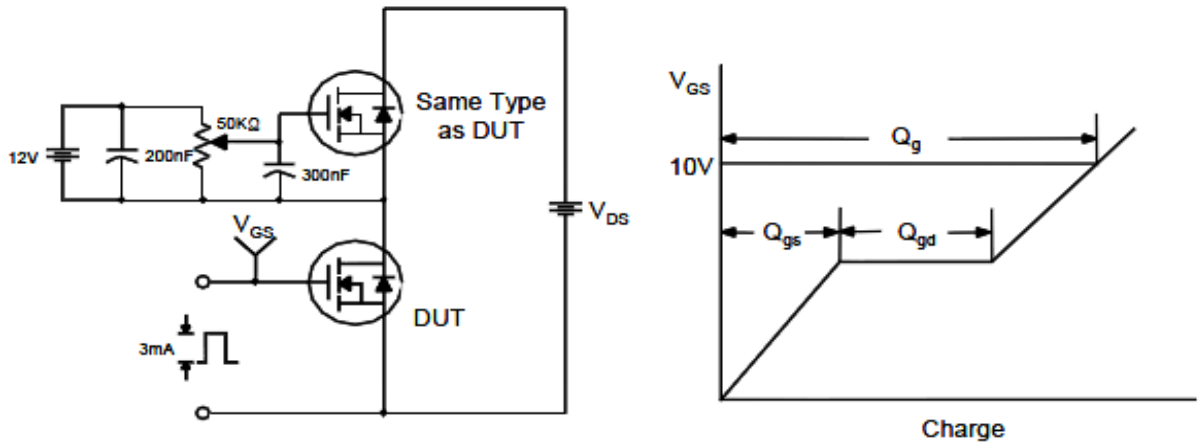




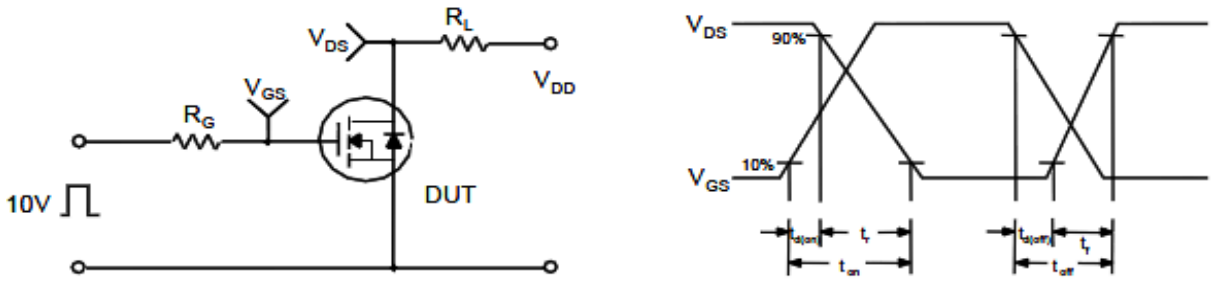


Typical Performance Characteristics (continue)

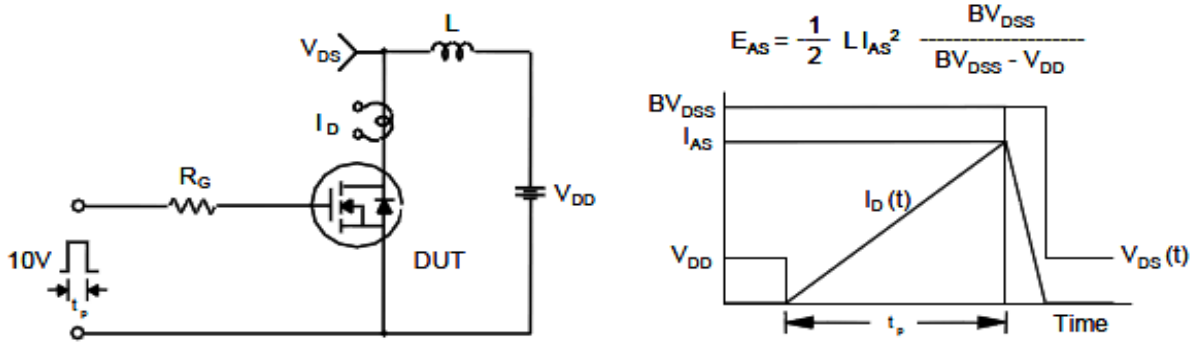
Gate Charge Test Circuit & Waveform



Resistive Switching Test Circuit & Waveforms

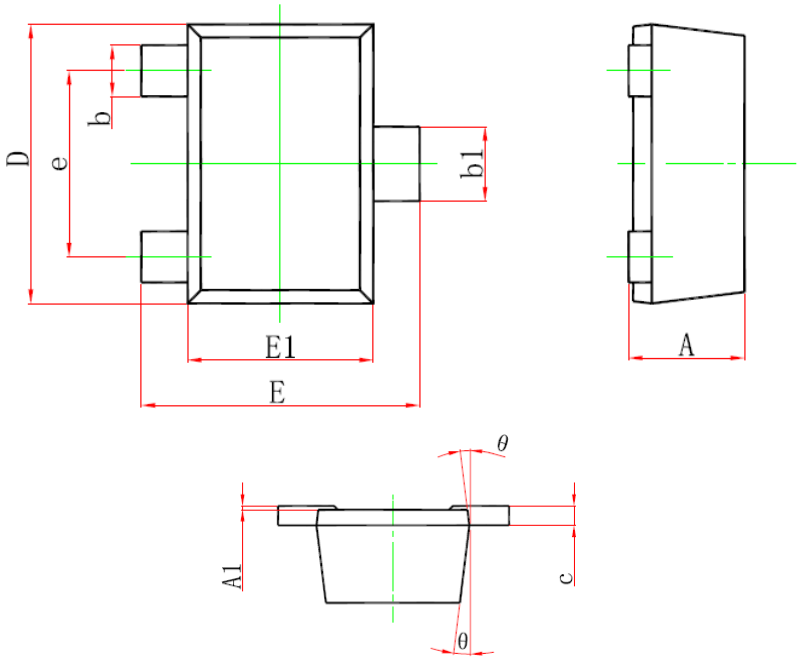


Unclamped Inductive Switching Test Circuit & Waveforms



Package Dimension

SOT-723



Dimensions				
Symbol	Millimeters		Inches	
	Min	Max	Min	Max
A	-	0.500	-	0.020
A1	0.000	0.050	0.000	0.002
b	0.170	0.270	0.007	0.011
b1	0.270	0.370	0.011	0.015
c	-	0.150	-	0.006
D	1.150	1.250	0.045	0.049
E	1.150	1.250	0.045	0.049
E1	0.750	0.850	0.030	0.033
e	0.800 TYP		0.031 TYP	
θ	7° REF		7° REF	

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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

Shenzhen Branch(China)	
	1113 B Building, Happiness Washington, Baoan Nan Road, Luohu District, Shenzhen City, China
	0755-22208941
	sales_cn@gs-power.com

RD Division	
	824 Bolton Drive Milpitas. CA. 95035
	1-408-457-0587