GSM7002K

60V N-Channel Enhancement Mode MOSFET

Product Description

The GSM7002K is the N-Channel enhancement mode field effect transistors are produced using high cell density DMOS technology.
These products have been designed to minimize on-state resistance while provide rugged, reliable, and fast switching performance.
They can be used in most applications requiring up to 640mA DC and can deliver pulsed currents up to 950mA. These products are particularly suited for low voltage, low current applications such as small servo motor control, power MOSFET gate drivers, and other switching applications.

Features

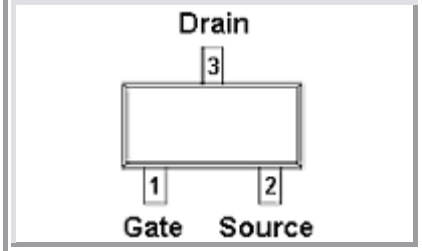
- 60V/0.50A , $R_{DS(ON)}$= 2.0Ω@V_{GS}=10V
- 60V/0.20A , $R_{DS(ON)}$= 4.0Ω@V_{GS}=4.5V
- Super high density cell design for extremely low $R_{DS\ (ON)}$
- Exceptional on-resistance and maximum DC current capability
- SOT-23 package design

Applications

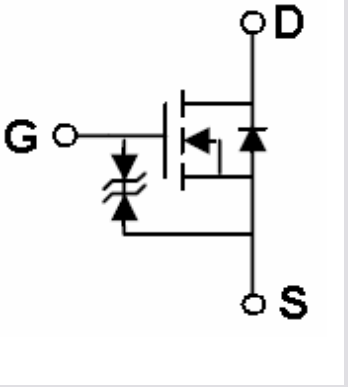
- Drivers: Relays, Solenoids, Lamps, Hammers, Display, Memories, Transistors, etc.
- High saturation current capability. Direct Logic-Level Interface: TTL/CMOS
- Battery Operated Systems
- Solid-State Relays

Packages & Pin Assignments

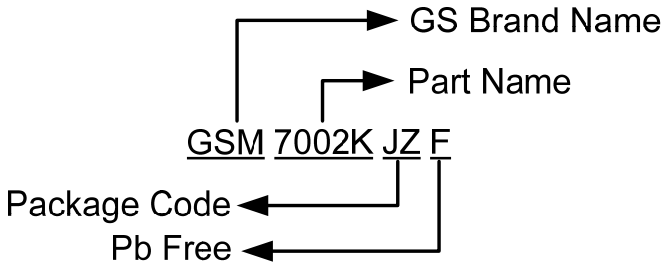
GSM7002KJZF (SOT-23)



1	G	Gate
2	S	Source
3	D	Drain

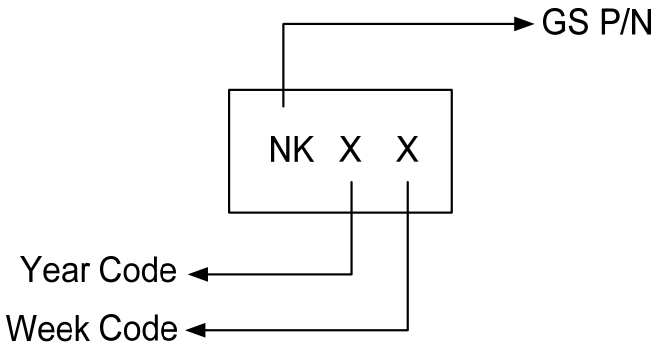


Ordering Information



Part Number	Package	Quantity Reel
GSM7002KJZF	SOT-23	3000 PCS

Marking Information



Absolute Maximum Ratings

T_A=25ºC Unless otherwise noted

Symbol	Parameter		Typical	Unit
V_{DSS}	Drain-Source Voltage		60	V
V_{GSS}	Gate –Source Voltage - Continuous		±20	V
I_D	Continuous Drain Current(T_J=150℃)	T_A=25℃	0.64	A
I_{DM}	Pulsed Drain Current (*)		0.95	A
P_D	Power Dissipation	T_A=25℃	1.35	W
T_J	Operating Junction Temperature		-55/150	ºC
T_{STG}	Storage Temperature Range		-55/150	ºC
$R_{\theta JA}$	Thermal Resistance-Junction to Ambient		375	ºC/W

(*) Pulse width limited by safe operating area

Electrical Characteristics

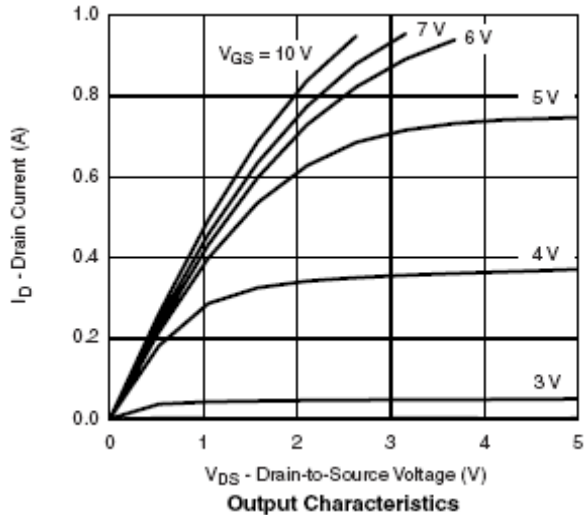
T_A=25ºC unless otherwise noted

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	1.0	1.7	2.5	
I_{GSS}	Gate Leakage Current	V_{DS}=0V,V_{GS}=±20V			±30	uA
I_{DSS}	Zero Gate Voltage Drain Current	V_{DS}=60V,V_{GS}=0V,T_J=25ºC			10	uA
		V_{DS}=48V,V_{GS}=0V,T_J=70ºC			100	
$R_{DS(on)}$	Drain-Source On-Resistance	V_{GS}=10V,I_D=0.50A			2.0	Ω
		V_{GS}=4.5V,I_D=0.20A			4.0	
G_{fs}(1)	Forward Transconductance	V_{DS}=10V, I_D =0.6A		0.6		S
V_{SD}(1)	Diode Forward Voltage	V_{GS}=0V, I_S=1.2A			1.2	V
Dynamic						
Q_g	Total Gate Charge	V_{DD}=50V, I_D=0.6A, V_{GS}=4.5V		1.0	1.6	nC
Q_{gs}	Gate-Source Charge			0.5		
Q_{gd}	Gate-Drain Charge			0.5		
C_{iss}	Input Capacitance	V_{DS}= 25V, f =1MHz,V_{GS}=0V		32	50	pF
C_{oss}	Output Capacitance			8		
C_{rss}	Reverse Transfer Capacitance			6		
$t_{d(on)}$	Turn-On Time	V_{DD}=30V,I_D=0.6A, R_G=3.3Ω,V_{GS}=10.0V, R_D=52Ω		12		ns
t_r				10		
$t_{d(off)}$	Turn-Off Time			56		
t_f				29		

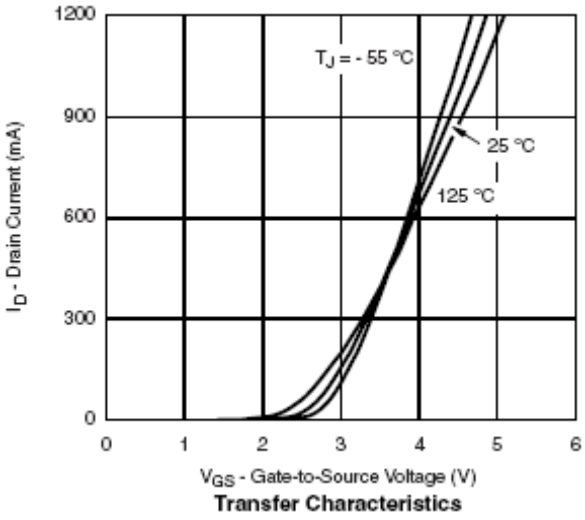
(1) Pulsed: Pulse duration = 300 μs, duty cycle 1.5%.

(2) Pulse width limited by safe operating area.

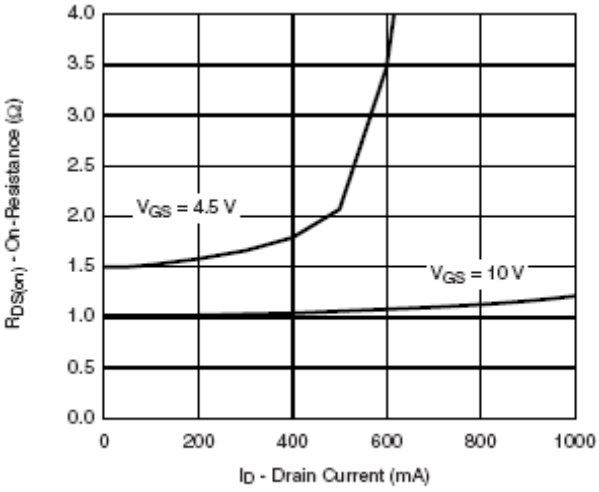
Typical Performance Characteristics



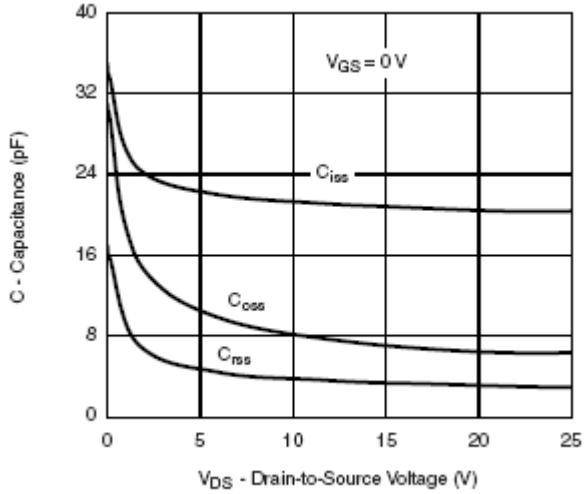
Output Characteristics



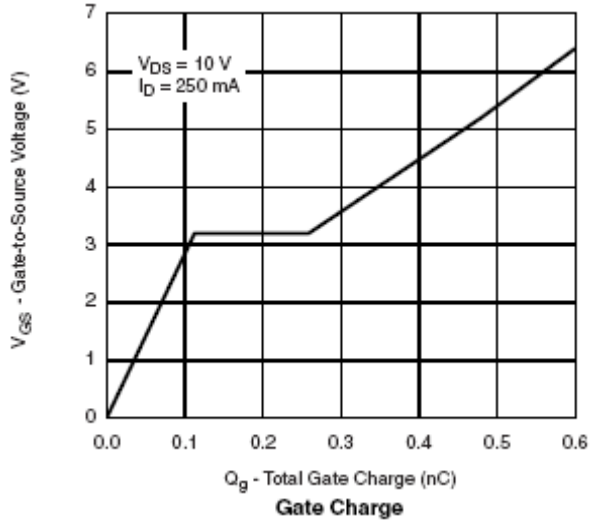
Transfer Characteristics



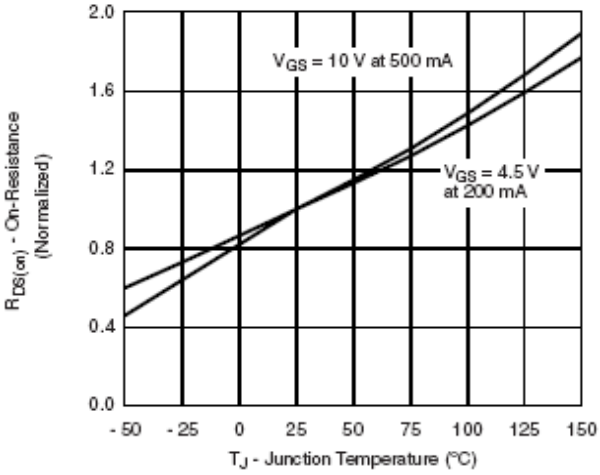
On-Resistance vs. Drain Current



Capacitance

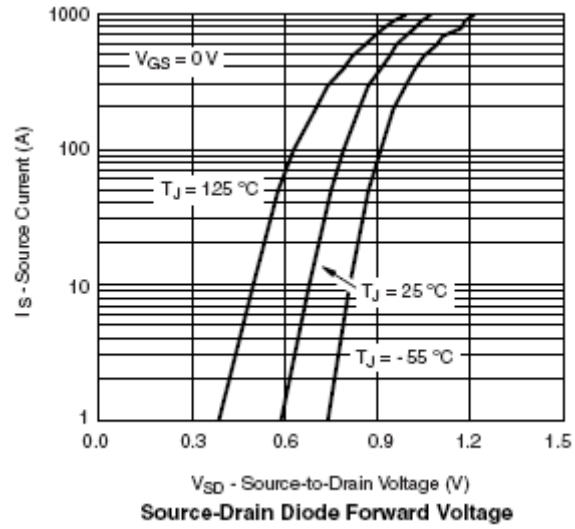


Gate Charge

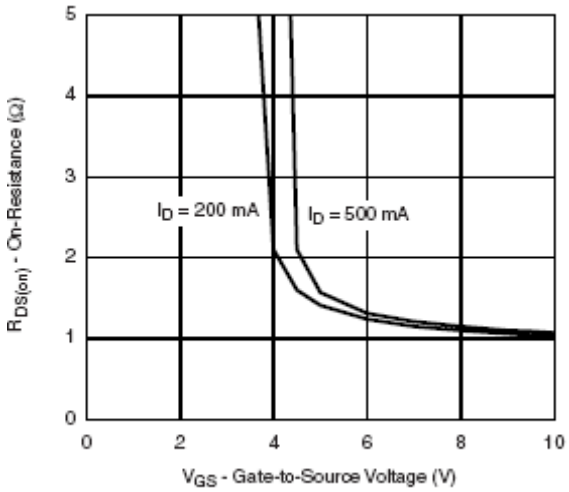


On-Resistance vs. Junction Temperature

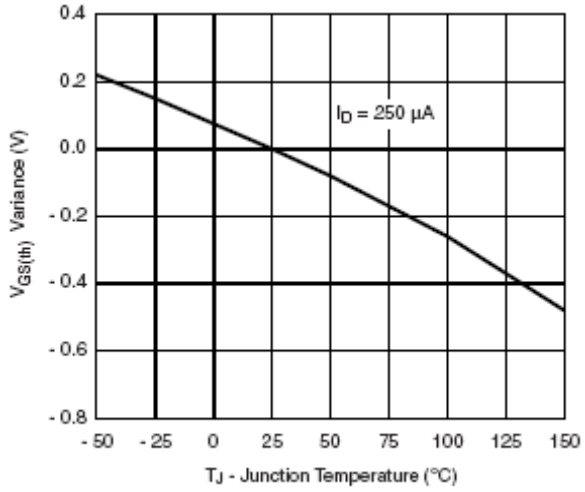
Typical Performance Characteristics(Continue)



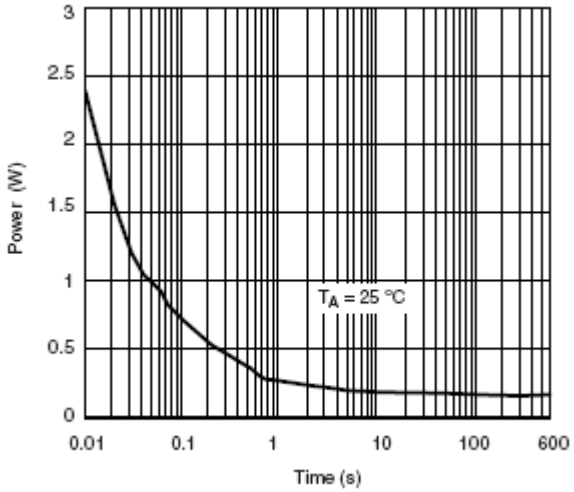
Source-Drain Diode Forward Voltage



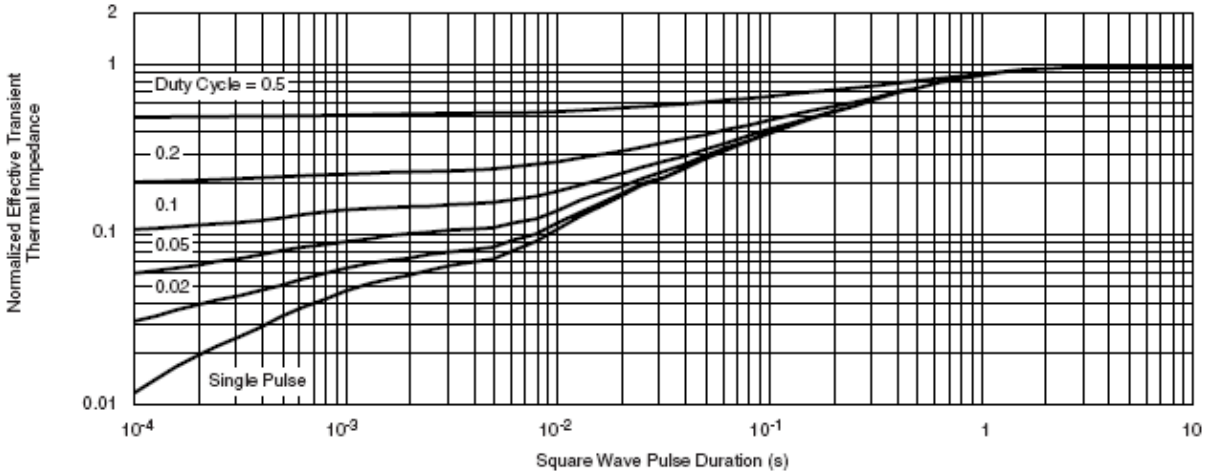
On-Resistance vs. Gate-Source Voltage



Threshold Voltage Variance Over Temperature



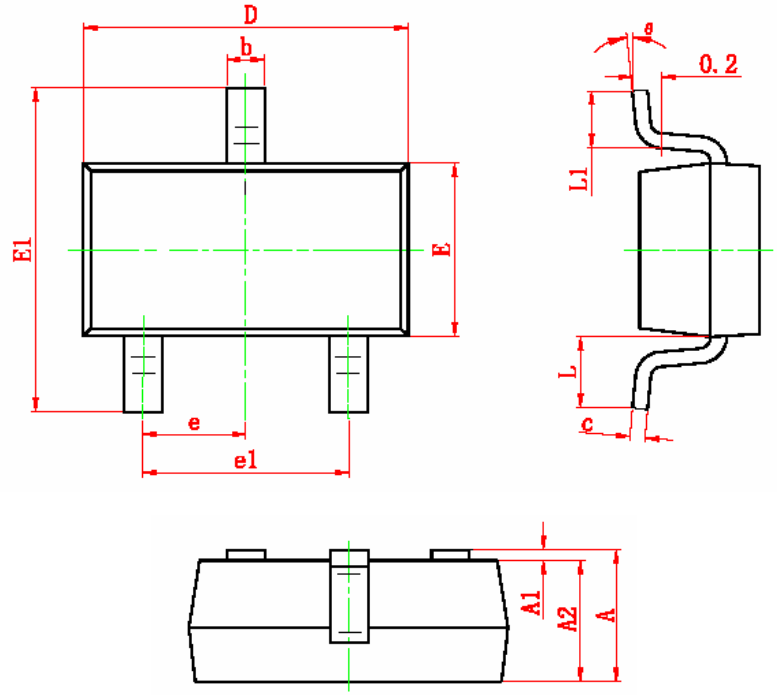
Single Pulse Power, Junction-to-Ambient



Normalized Thermal Transient Impedance, Junction-to-Foot

Package Dimension

SOT-23 PLASTIC PACKAGE



Dimensions				
SYMBOL	Millimeters		Inches	
	MIN	MAX	MIN	MAX
A	0.900	1.200	0.035	0.043
A1	0.000	0.100	0.000	0.004
A2	0.900	1.100	0.035	0.039
b	0.300	0.500	0.012	0.020
c	0.080	0.150	0.003	0.006
D	2.800	3.000	0.110	0.118
E	1.200	1.400	0.047	0.055
E1	2.250	2.550	0.089	0.100
e	0.950 TYP		0.037 TYP	
e1	1.800	2.000	0.071	0.079
L	0.550 REF		0.022 REF	
L1	0.300	0.500	0.012	0.020
θ	0°	8°	0°	8°

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

Wu-Xi Branch	
	No.21 Changjiang Rd., WND, Wuxi, Jiangsu, China (INFO. &. TECH. Science Park Building A 210 Room)
	86-510-85217051
	86-510-85211238
	sales_cn@gs-power.com

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