GSM7002KJZF

60V N-Channel Enhancement Mode MOSFET

Product Description

GSM7002KJZF, 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 other battery powered circuits, and low in-line power loss are needed in commercial industrial surface mount applications.

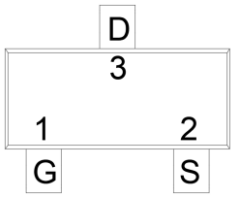
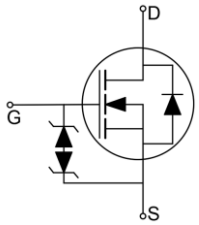
Features

- 60V/0.5A , $R_{DS(ON)}$=3.0Ω@V_{GS}=10V
- 60V/0.3A , $R_{DS(ON)}$=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
- ESD Protection (2KV) Diode design-in
- 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

TO-220-3L	Equivalent Circuit
	

Pin	Symbol	Description	Pin	Symbol	Description
1	G	Gate	3	D	Drain
2	S	Source			

Ordering and Marking Information

Ordering Information			
Part Number	**Package**	**Part Marking**	**Quantity / Reel**
GSM7002KJZF	SOT-23	e□□□□	3,000 PCS

GSM7002K 1 2

- **Product Code:** GSM7002K
- **Package Code:** 1 is **JZ** for SOT-23
- **Green Level:** 2 is **F** for RoHS Compliant and Halogen Free

Marking Information

e□□□□

- **Product Code:** e
- **GS Code:** □□□□

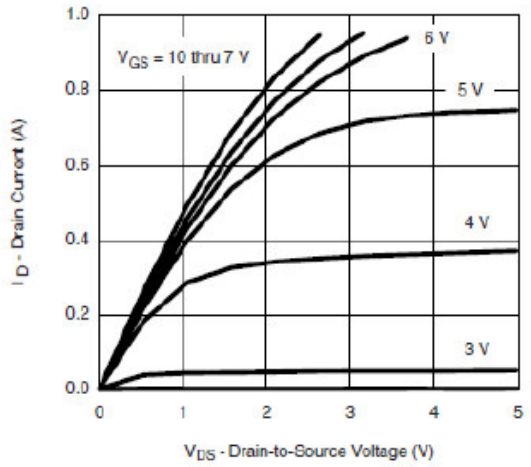
Absolute Maximum Ratings (T_A=25ºC Unless otherwise noted)

Symbol	Parameter		Value	Unit
V_{DSS}	Drain-Source Voltage		60	V
V_{GSS}	Gate-Source Voltage - Continuous		±20	V
I_D	Continuous Drain Current	T_A=25ºC	0.30	A
		T_A=70ºC	0.21	
I_{DM}	Pulsed Drain Current		0.65	A
I_S	Continuous Source Current (Diode Conduction)		0.45	A
P_D	Power Dissipation	T_A=25ºC	0.35	W
		T_A=70ºC	0.225	
T_J	Operating Junction Temperature		-55 to 150	ºC
T_{STG}	Storage Temperature Range		-55 to 150	ºC
$R_{\theta JA}$	Thermal Resistance-Junction to Ambient		357	ºC/W

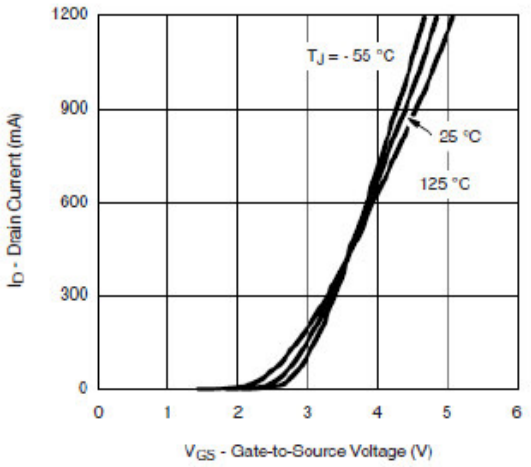
Electrical Characteristics (T_A=25ºC unless otherwise noted)

Symbol	Parameter	Conditions	Min	Typ	Max	Unit
Static characteristics						
$V_{(BR)DSS}$	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		2.0	
I_{GSS}	Gate Leakage Current	V_{DS}=0V, V_{GS}=±20V			3	uA
I_{DSS}	Zero Gate Voltage Drain Current	V_{DS}=60V, V_{GS}=0V			1	uA
		V_{DS}=60V, V_{GS}=0V, T_J=85ºC			10	
$R_{DS(on)}$	Drain-Source On-Resistance	V_{GS}=10V, I_D=0.5A		1.9	3	Ω
		V_{GS}=4.5V, I_D=0.3A		2.4	4	
g_{FS}	Forward Transconductance	V_{DS}=10V, I_D=0.2A		0.2		S
V_{SD}	Diode Forward Voltage	V_{GS}=0V, I_S=0.2A		0.75	1.4	V
Dynamic characteristics						
Q_g	Total Gate Charge	V_{DD}=10V, I_D=0.25A, V_{GS}=4.5V		500		pC
Q_{gs}	Gate-Source Charge			100		
Q_{gd}	Gate-Drain Charge			150		
C_{iss}	Input Capacitance	V_{DS}= 25V, f =1MHz, V_{GS}=0V		30		pF
C_{oss}	Output Capacitance			8		
C_{rss}	Reverse Transfer Capacitance			5		
$t_{d(on)}$	Turn-On Time	V_{DD}=30V, I_D=0.2A, R_G=10Ω,V_{GEN}=4.5V, R_L=150Ω		10	20	ns
t_r				35	50	
$t_{d(off)}$	Turn-Off Time			20	30	
t_f				40	60	

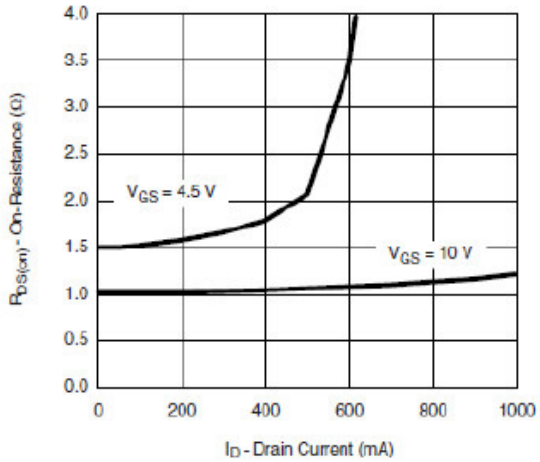
Typical Performance Characteristics



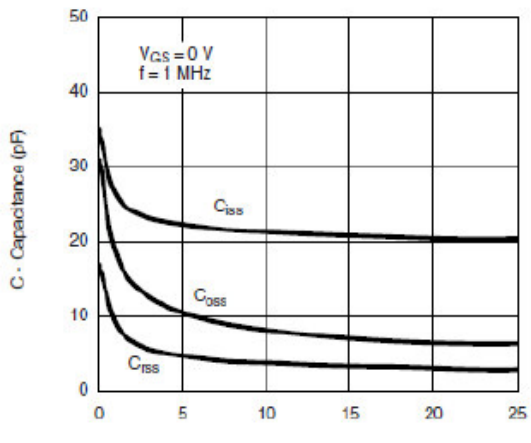
Output Characteristics



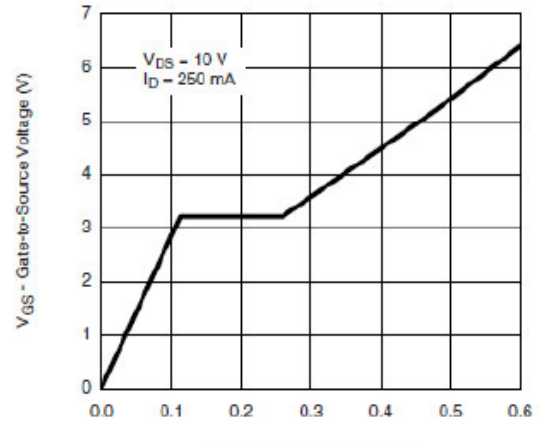
Transfer Characteristics



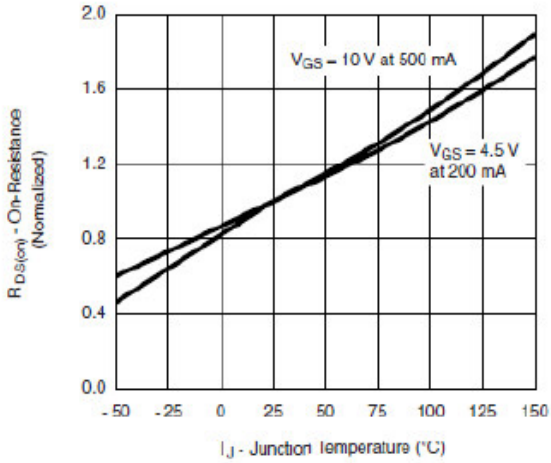
On-Resistance vs. Drain Current



Capacitance

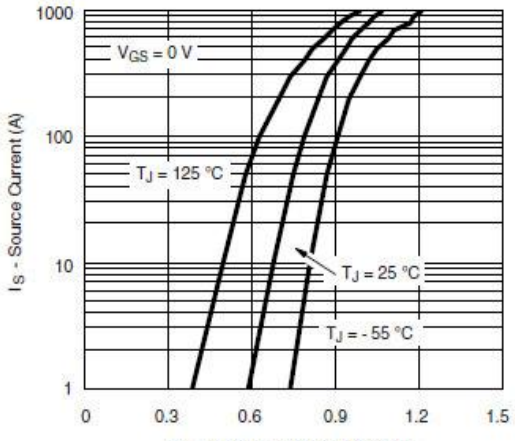


Gate Charge

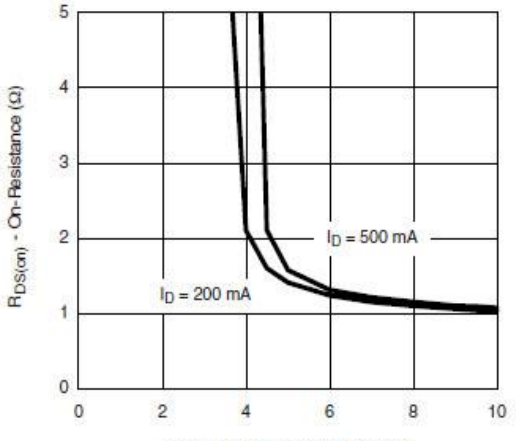


On-Resistance vs. Junction Temperature

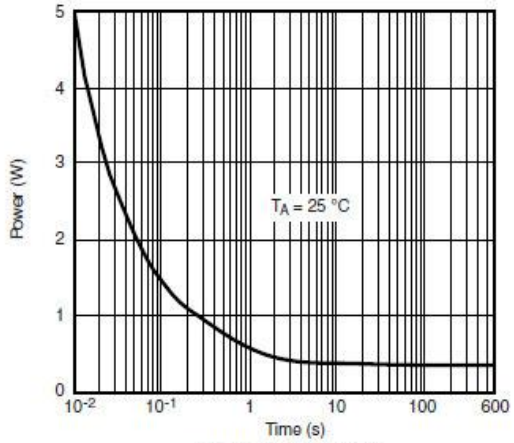
Typical Performance Characteristics (Continue)



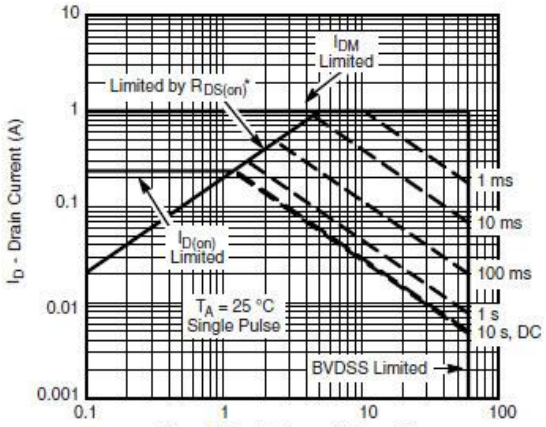
Source-Drain Diode Forward Voltage



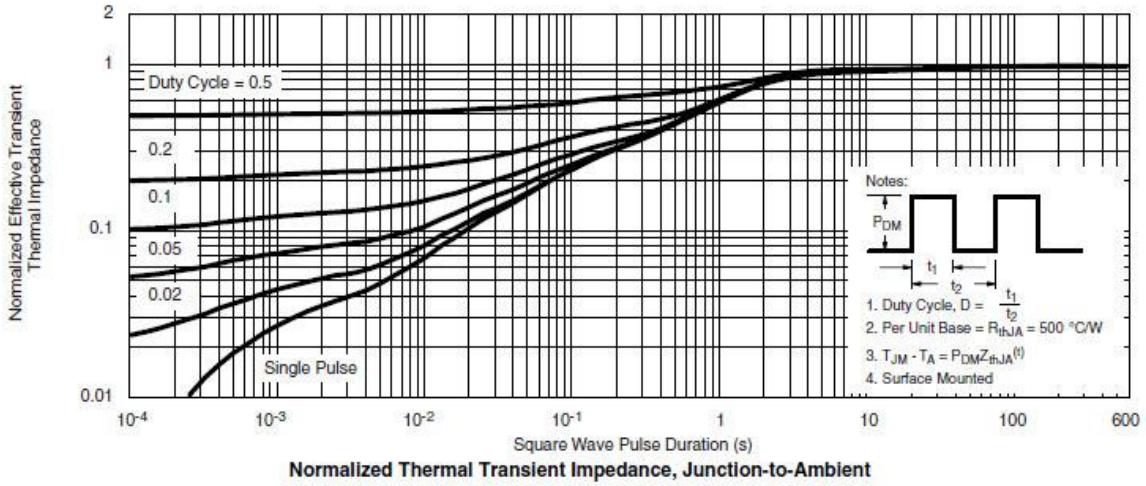
On-Resistance vs. Gate-to-Source Voltage



Single Pulse Power



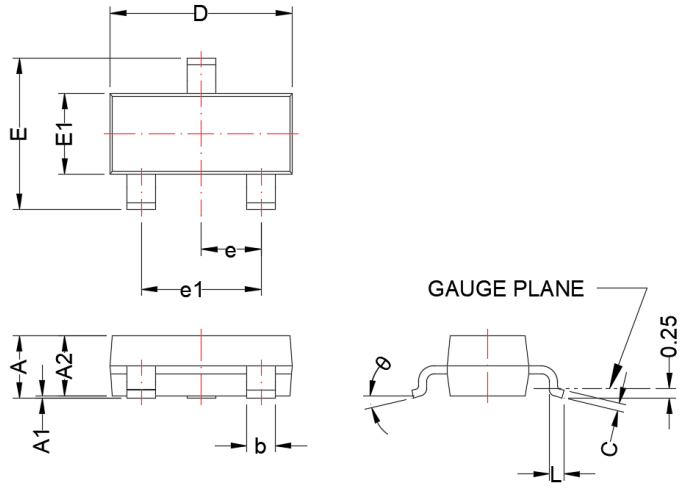
Safe Operating Area



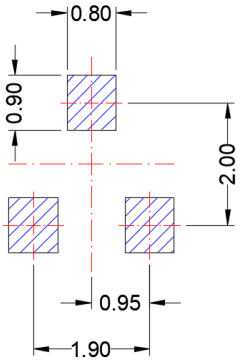
Normalized Thermal Transient Impedance, Junction-to-Ambient

SOT-23

Package Dimension



Recommended Land Pattern



Unit:mm

Dimensions				
Symbol	Millimeters		Inches	
	MIN	MAX	MIN	MAX
A	0.75	1.17	0.030	0.046
A1	0.01	0.15	0.000	0.006
A2	0.70	1.02	0.028	0.040
b	0.30	0.50	0.012	0.020
c	0.08	0.20	0.003	0.008
D	2.80	3.04	0.110	0.120
E	2.10	2.64	0.083	0.104
E1	1.20	1.40	0.047	0.055
e	0.95 BSC		0.037 BSC	
e1	1.90 BSC		0.075 BSC	
L	0.30	0.60	0.012	0.024
θ	0°	8°	0°	8°

NOTE:

Dimensions are exclusive of Burrs, Mold Flash & Tie Bar extrusions.

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