GSM1073KJZF

20V P-Channel Enhancement Mode MOSFET

Product Description

GSM1073KJZF, P-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

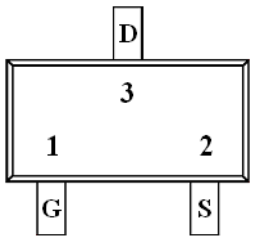
- -20V/-0.5A, $R_{DS(ON)}$=800mΩ@V_{GS}=-4.5V
- -20V/-0.2A, $R_{DS(ON)}$=1100mΩ@V_{GS}=-2.5V
- -20V/-0.1A, $R_{DS(ON)}$=1800mΩ@V_{GS}=-1.8V
- Low-Voltage Operation
- High-Speed Circuits
- ESD Protection
- SOT-23 package design

Applications

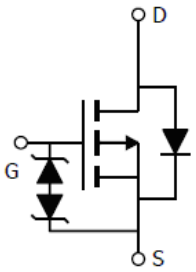
- Drivers : Relays, Solenoids, Lamps, Hammers
- Battery Operated Systems
- Power Supply Converter Circuits
- Load/Power Switching Smart Phones, Pagers

Packages & Pin Assignments

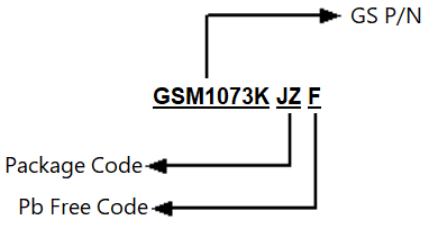
GSM1073KJZF (SOT-23)



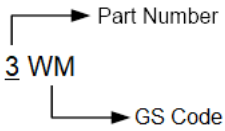
Pin	Description
1	Gate
2	Source
3	Drain



Ordering Information



Marking Information



Part Number	Package	Part Marking
GSM1073KJZF	SOT-23	3WM

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		±8	V
I_D	Continuous Drain Current(T_J=150℃)	T_A=25℃	-0.6	A
		T_A=70℃	-0.5	
I_{DM}	Pulsed Drain Current		-1.9	A
P_D	Power Dissipation	T_A=25℃	0.45	W
		T_A=70℃	0.29	
$R_{\theta JA}$	Thermal Resistance Junction to ambient		275	ºC/W
T_J	Operating Junction Temperature Range		-55 to +150	ºC
T_{STG}	Storage Temperature Range		-55 to +150	ºC

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	-20			V
$V_{GS(th)}$	Gate Threshold Voltage	V_{DS}=V_{GS}, I_D=-250uA	-0.3		-1.0	
I_{GSS}	Gate Leakage Current	V_{DS}=0V, V_{GS}=±8V			±10	uA
I_{DSS}	Zero Gate Voltage Drain Current	V_{DS}=-20V, V_{GS}=0V			-1	uA
		V_{DS}=-16V, V_{GS}=0V T_J=85ºC			-30	
$R_{DS(on)}$	Drain-Source On-Resistance	V_{GS}=-4.5V, I_D=-0.5A		550	800	mΩ
		V_{GS}=-2.5V, I_D=-0.2A		760	1100	
		V_{GS}=-1.8V, I_D=-0.1A		1000	1800	
		V_{GS}=-1.5V, I_D=-0.1A		1230	2600	
g_{FS}	Forward Transconductance	V_{DS}=-10V, I_D=-0.3A		0.8		S
V_{SD}	Diode Forward Voltage	I_S=-0.5A, V_{GS}=0V			-1.3	V
Dynamic						
Q_g	Total Gate Charge	V_{DS}=-10V, V_{GS}=-4.5V, I_D=-0.25A		0.62		nC
Q_{gs}	Gate-Source Charge			0.1		
Q_{gd}	Gate-Drain Charge			0.13		
C_{iss}	Input Capacitance	V_{DS}=-16V, V_{GS}=0V f=1MHz		59.8		pF
C_{oss}	Output Capacitance			12.1		
C_{rss}	Reverse Transfer Capacitance			6.4		
$t_{d(on)}$	Turn-On Time	V_{DD}=-10V, R_L=47Ω, I_D≡-0.2A V_{GEN}=-4.5V, R_G=10Ω		5.1		ns
t_r				8.1		
$t_{d(off)}$	Turn-Off Time			28.4		
t_f				20.7		

Typical Performance Characteristics

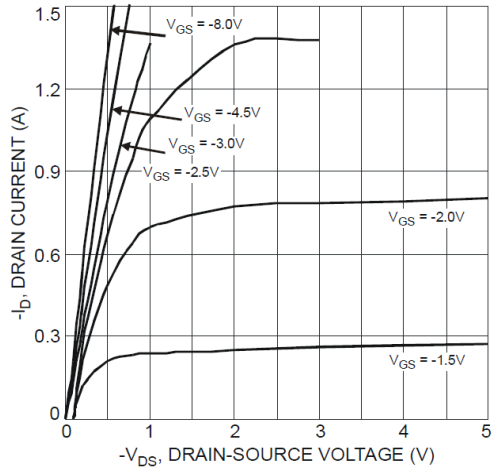


Fig. 1 Typical Output Characteristics

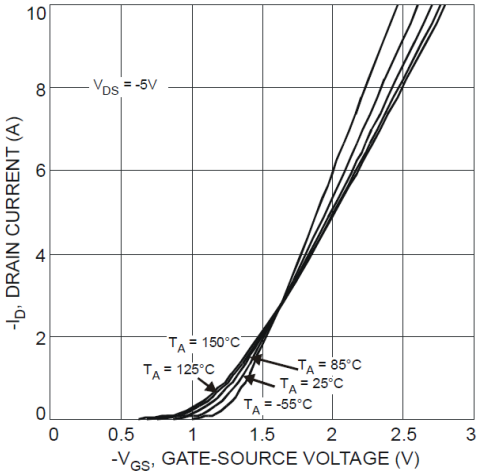


Fig. 2 Typical Transfer Characteristics

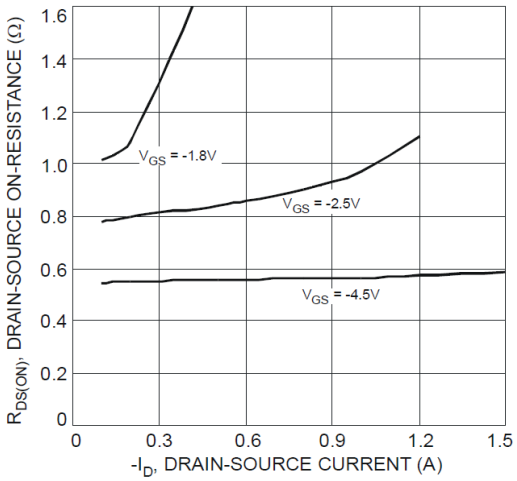


Fig. 3 Typical On-Resistance vs. I_D and V_{GS}

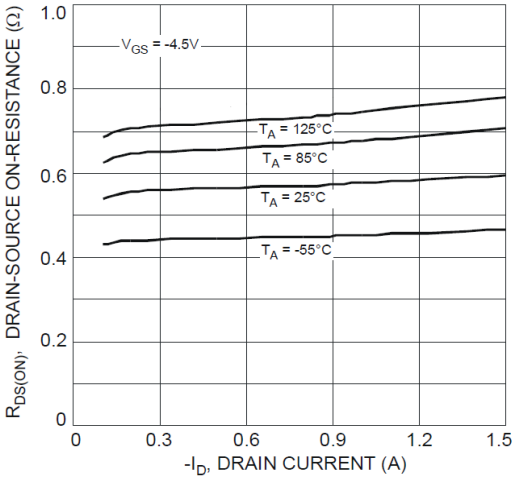


Fig. 4 Typical Drain-Source On-Resistance vs. I_D and T_A

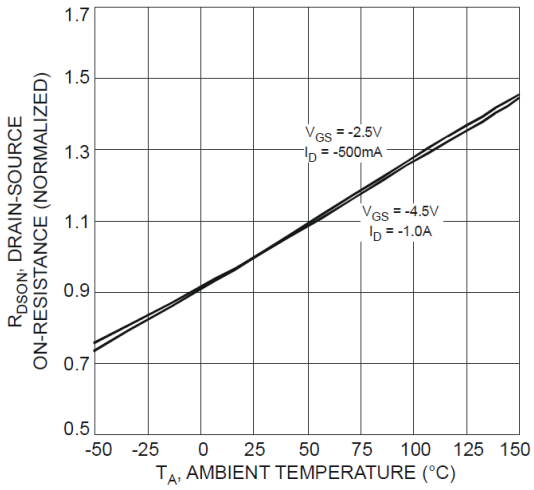


Fig. 5 On-Resistance Variation with T_J

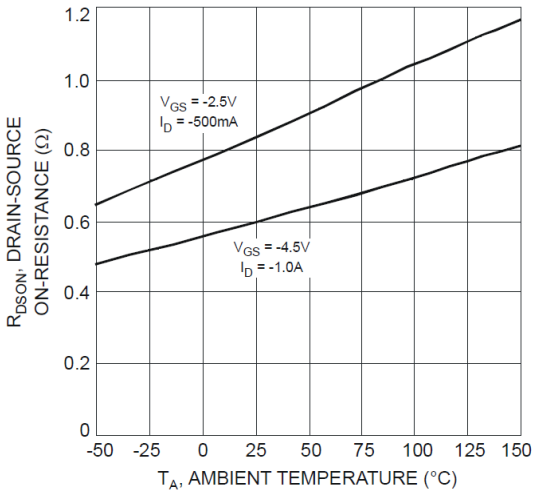


Fig. 6 On-Resistance Variation with T_J

Typical Performance Characteristics **(continue)**

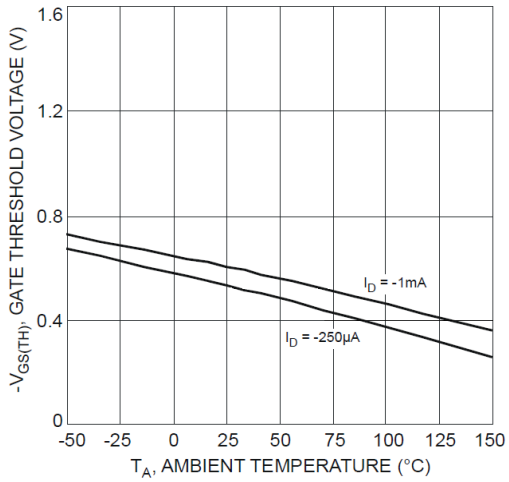


Fig. 7 Gate Threshold Variation vs. T_A

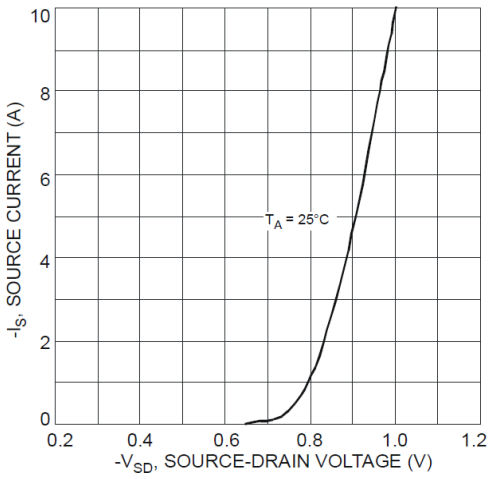


Fig. 8 Diode Forward Voltage vs. Current

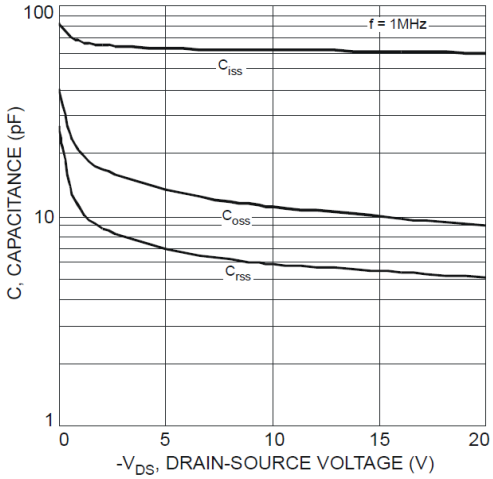


Fig. 9 Typical Capacitance

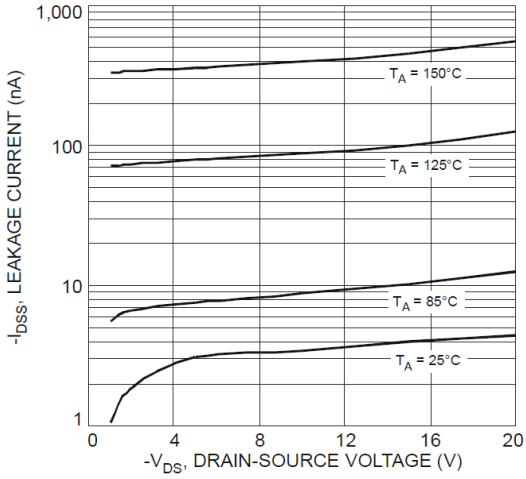


Fig. 10 Typical Drain-Source Leakage Current vs. Drain-Source Voltage

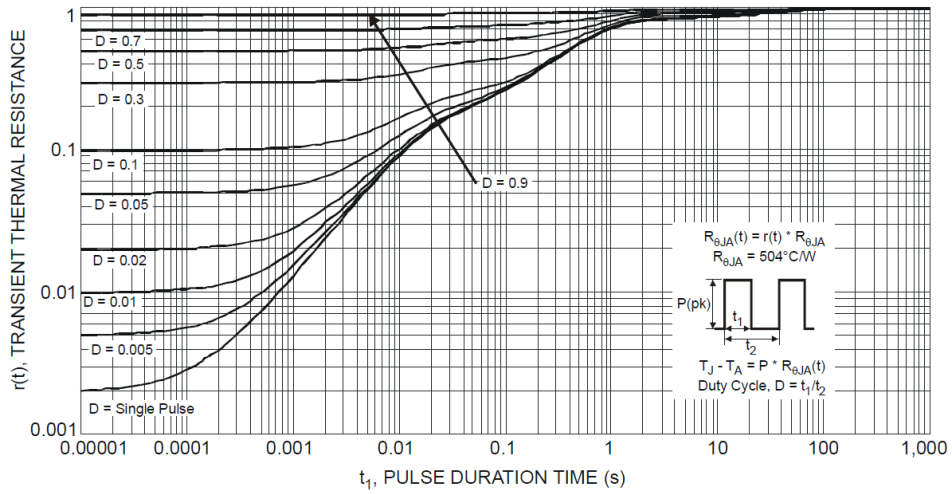
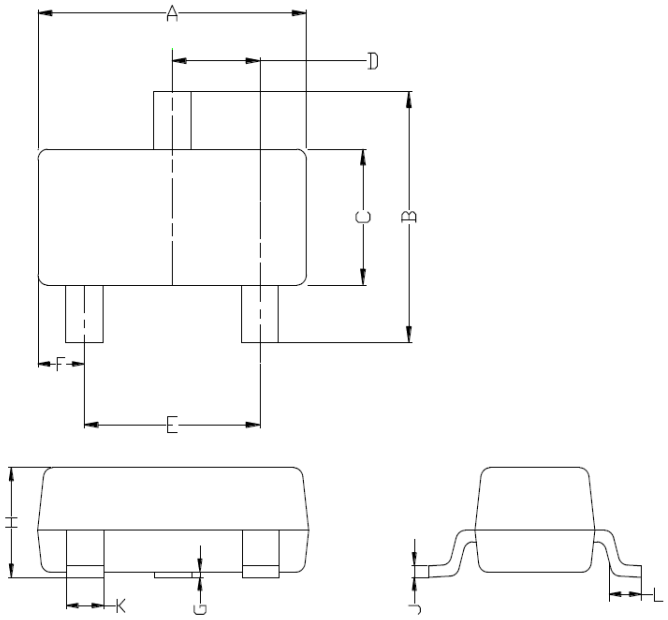


Fig. 11 Transient Thermal Response

Package Dimension

SOT-23



Dimensions				
Symbol	Millimeters		Inches	
	Min	Max	Min	Max
A	2.800	3.040	0.110	0.119
B	2.100	2.640	0.083	0.104
C	1.200	1.400	0.047	0.055
D	0.890	1.030	0.035	0.041
E	1.780	2.050	0.070	0.080
F	0.450	0.600	0.018	0.024
G	0.013	0.100	0.001	0.004
H	0.900	1.110	0.035	0.043
J	0.085	0.180	0.003	0.007
K	0.370	0.510	0.015	0.020
L	0.300	0.550	0.012	0.022

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