GSM1073K

20V P-Channel Enhancement Mode MOSFET

Product Description

GSM1073K, 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

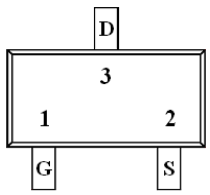
- -20V/-0.45A,$R_{DS(ON)}$=650mΩ@V_{GS}=-4.5V
- -20V/-0.35A,$R_{DS(ON)}$=900mΩ@V_{GS}=-2.5V
- -20V/-0.25A,$R_{DS(ON)}$=1500mΩ@V_{GS}=-1.8V
- Low Offset (Error) Voltage
- Low-Voltage Operation
- High-Speed Circuits
- Low Battery Voltage Operation
- ESD Protection
- SOT-723 package design

Applications

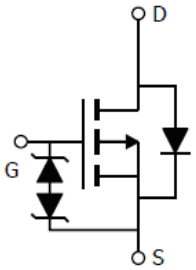
- Drivers : Relays, Solenoids, Lamps, Hammers
- Battery Operated Systems
- Power Supply Converter Circuits
- Load/Power Switching Smart Phones, Pagers

Packages & Pin Assignments

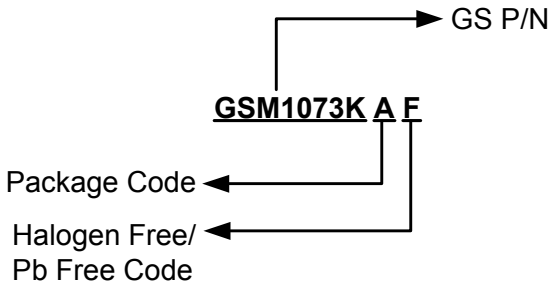
GSM1073KAF (SOT-723)



Pin	Description
1	Gate
2	Source
3	Drain

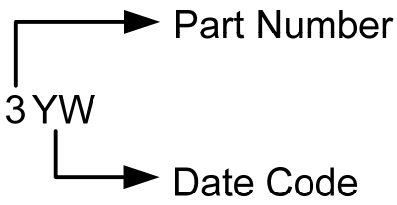


Ordering Information



Part Number	Package	Quantity Reel
GSM1073KAF	SOT-723	8000 PCS

Marking Information



Absolute Maximum Ratings

(T_A=25ºC unless otherwise noted)

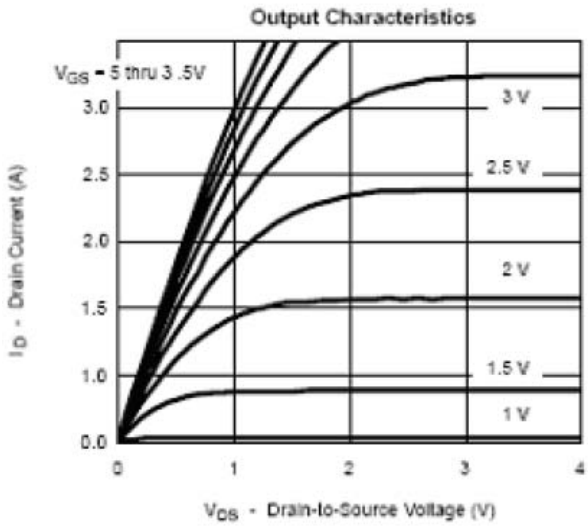
Symbol	Parameter		Typical	Unit
V_{DSS}	Drain-Source Voltage		-20	V
V_{GSS}	Gate-Source Voltage		±12	V
I_D	Continuous Drain Current(T_J=150℃)	T_A=25℃	-0.45	A
		T_A=70℃	-0.35	
I_{DM}	Pulsed Drain Current		-1.0	A
I_S	Continuous Source Current(Diode Conduction)		-0.3	A
P_D	Power Dissipation	T_A=25℃	0.27	W
		T_A=70℃	0.16	
T_J	Operating Junction Temperature Range		-55 to +150	ºC
T_{STG}	Storage Temperature Range		-55 to +150	ºC

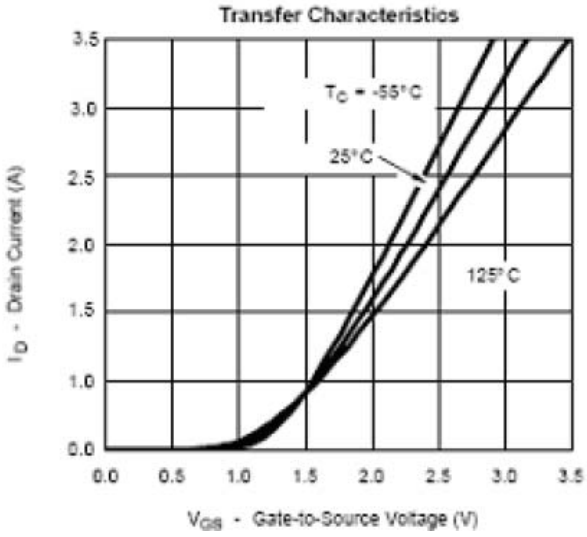
Electrical Characteristics

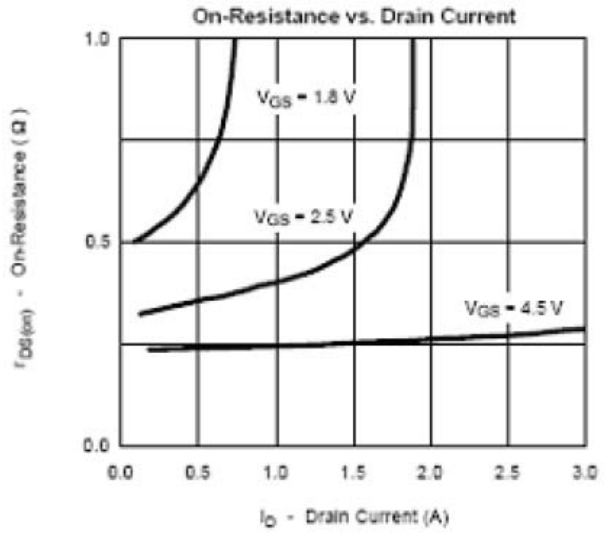
(T_A=25°C unless otherwise noted)

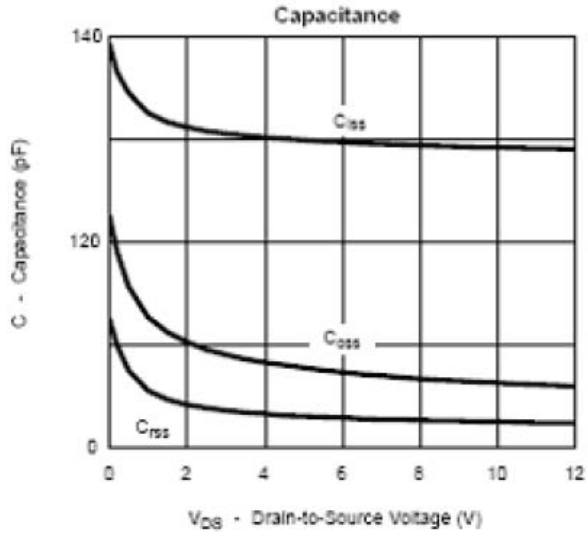
Symbol	Parameter	Conditions	Min	Typ	Max	Unit
Static						
$V_{(BR)DSS}$	Drain-Source Breakdown Voltage	V_{GS}=0V,I_D=-250uA	-20			V
$V_{GS(th)}$	Gate Threshold Voltage	V_{DS}=V_{GS},I_D=-250uA	-0.35		-1.0	
I_{GSS}	Gate Leakage Current	V_{DS}=0V,V_{GS}=±12V			±30	uA
I_{DSS}	Zero Gate Voltage Drain Current	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}≦-5V,V_{GS}=-4.5V	-0.7			A
$R_{DS(on)}$	Drain-Source On-Resistance	V_{GS}=-4.5V,I_D=-0.45A			650	mΩ
		V_{GS}=-2.5V,I_D=-0.35A			900	
		V_{GS}=-1.8V,I_D=-0.25A			1500	
g_{FS}	Forward Transconductance	V_{DS}=-10V,I_D=-0.25A		0.4		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		1.5	2.0	nC
Q_{gs}	Gate-Source Charge			0.3		
Q_{gd}	Gate-Drain Charge			0.35		
$t_{d(on)}$	Turn-On Time	V_{DD}=-10V,R_L=10Ω, I_D=-0.4A,V_{GEN}=-4.5V, R_G=6Ω		5	10	ns
t_r				15	25	
$t_{d(off)}$	Turn-Off Time			8	15	
t_f				1.4	1.8	

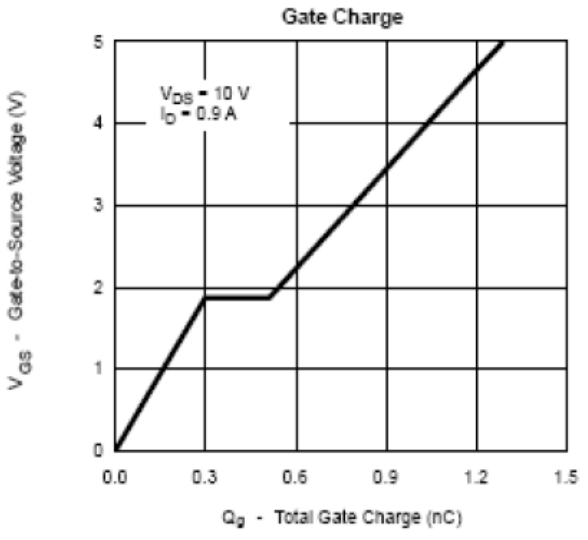
Typical Performance Characteristics

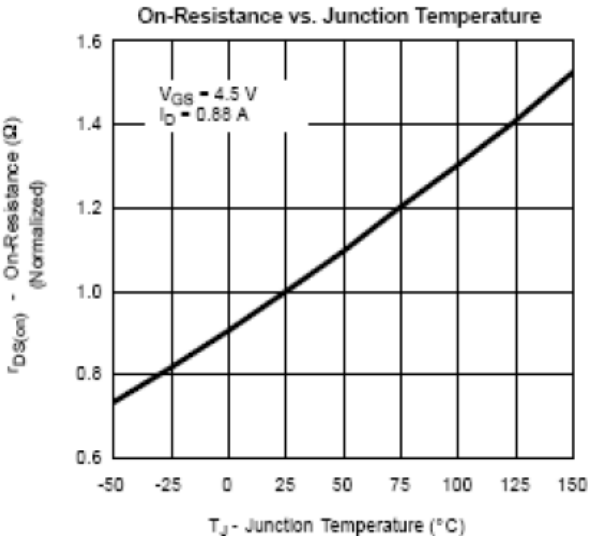




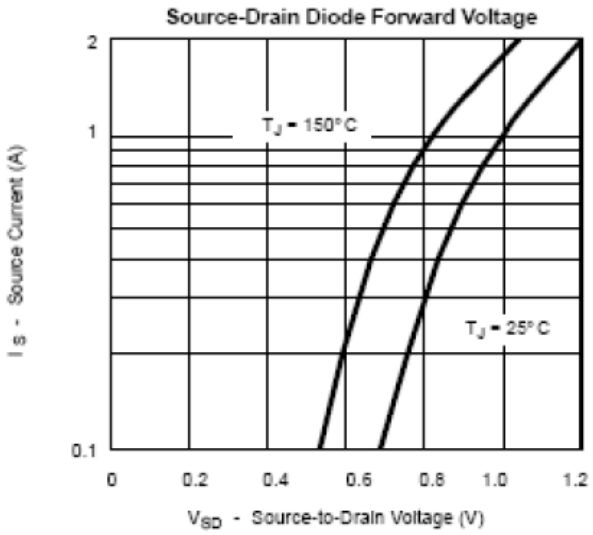


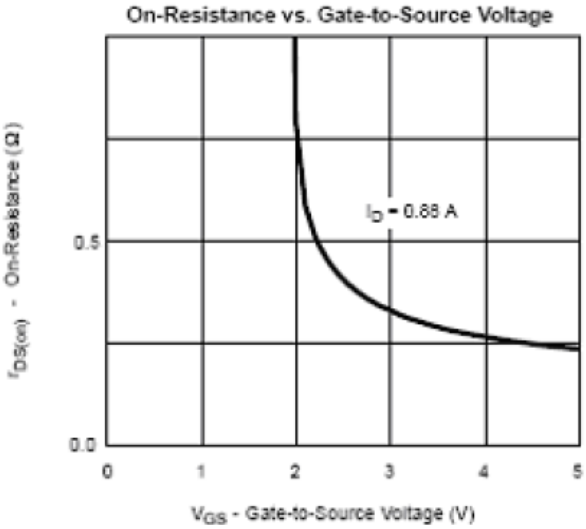


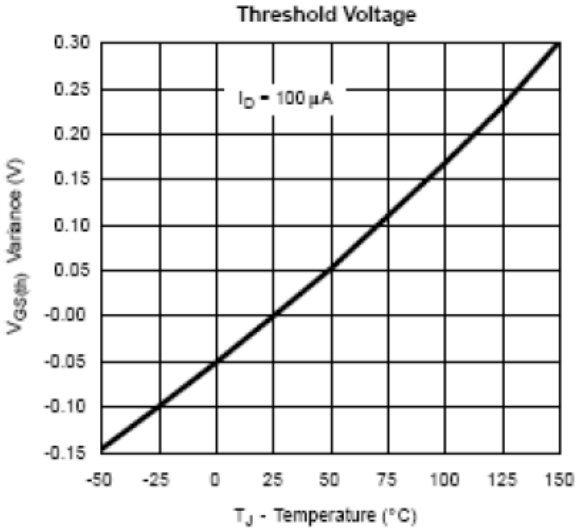


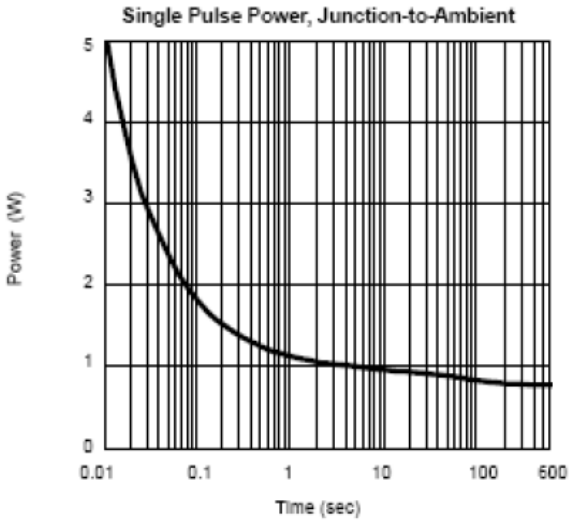


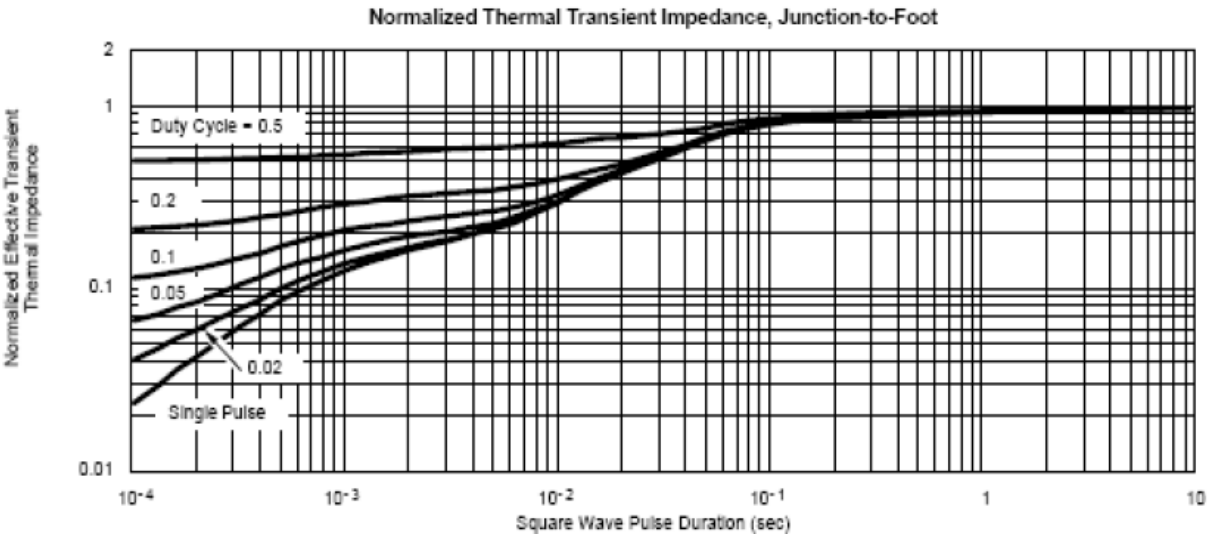
Typical Performance Characteristics (continue)





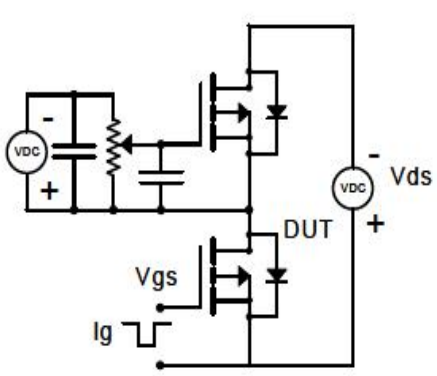


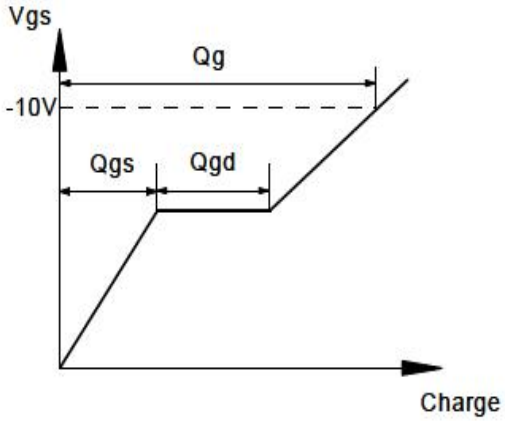




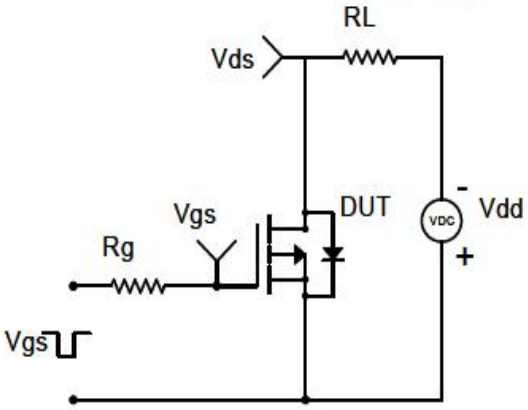
Typical Performance Characteristics (continue)

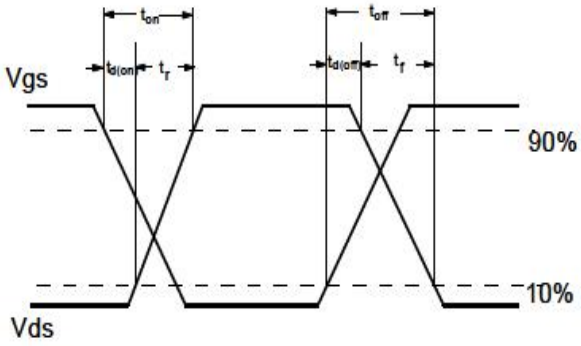
Gate Charge Test Circuit & Waveform



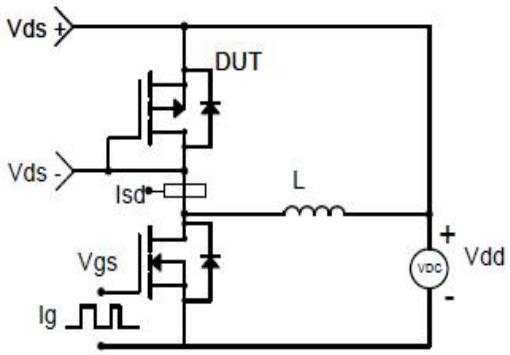


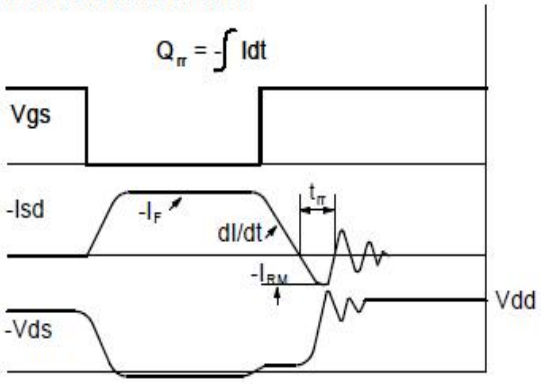
Resistive Switching Test Circuit & Waveforms





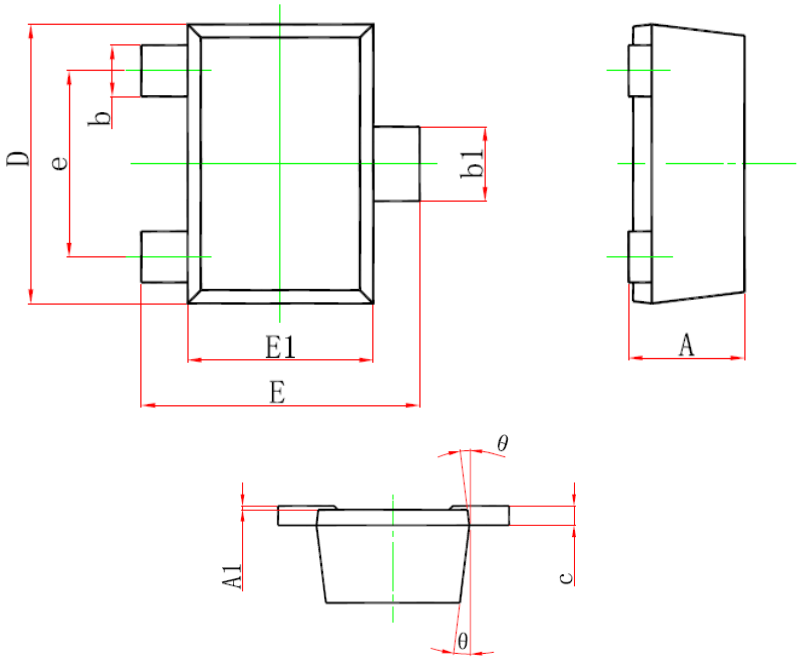
Diode Recovery Test Circuit & Waveforms





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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