

GSM1073KAF

20V P-Channel Enhancement Mode MOSFET

Product Description

GSM1073KAF, P-Channel enhancement mode MOSFET, uses Advanced Trench Technology to provide excellent $R_{DS(ON)}$, low gate charge.

This device is 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.

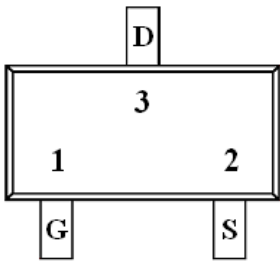
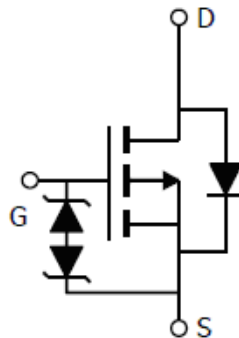
Features

- $R_{DS(ON)}=650m\Omega@V_{GS}=-4.5V$
- $R_{DS(ON)}=900m\Omega@V_{GS}=-2.5V$
- $R_{DS(ON)}=1500m\Omega@V_{GS}=-1.8V$
- Low-Voltage Operation
- High-Speed Circuits
- Low Battery Voltage Operation
- ESD Protection
- SOT-723 package design
- RoHS Compliant and Halogen Free

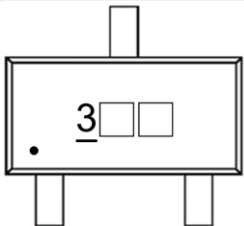
Applications

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

Packages & Pin Assignments

GSM1073KAF (SOT-723)		Equivalent Circuit
		
Pin	Description	
1	Gate	
2	Source	
3	Drain	

Ordering and Marking Information

Ordering Information			
Part Number	Package	Part Marking	Quantity / Reel
GSM1073KAF	SOT-723	3□□	8,000 PCS
GSM1073K 1 2			
- Product Code: GSM1073K - Package Code: 1 is A for SOT-723 - Green Level: 2 is F for RoHS Compliant and Halogen Free			
Marking Information			
 - Product Code: 3 - GS Code: □□			

Absolute Maximum Ratings

T_A=25°C, unless otherwise specified

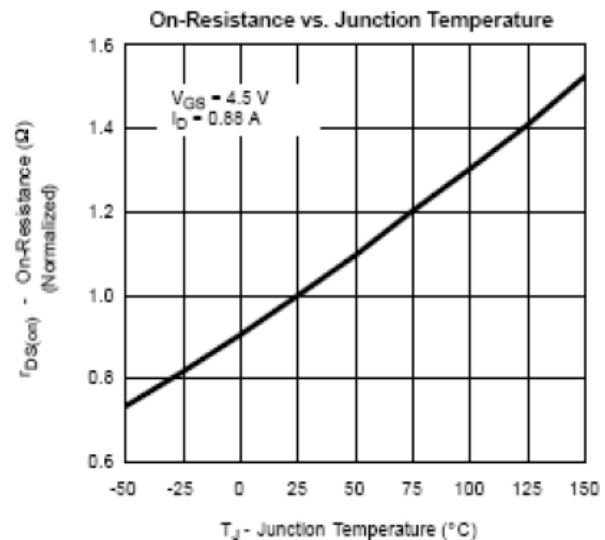
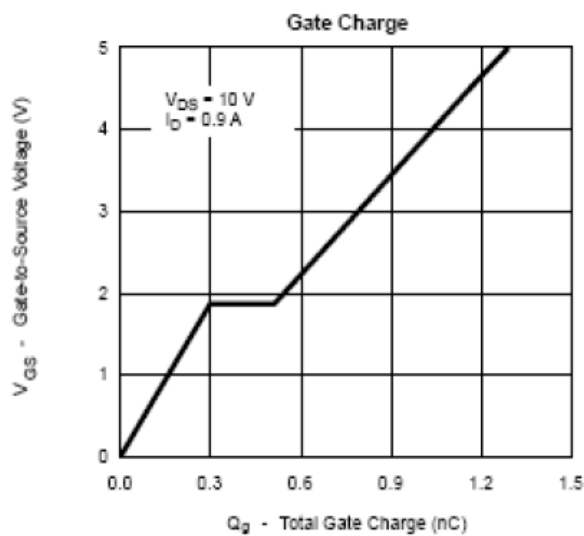
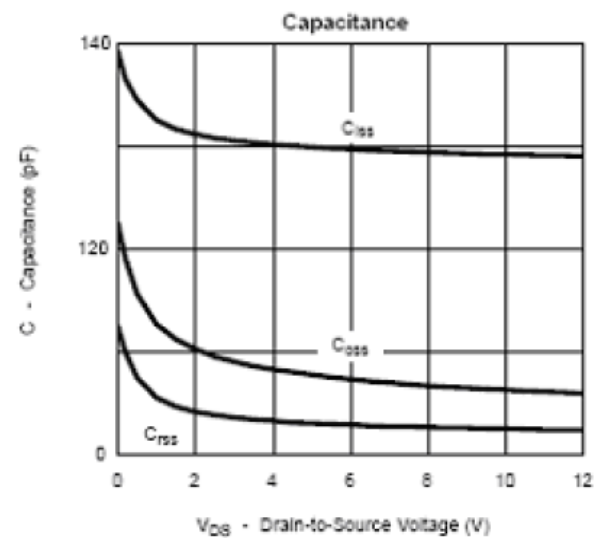
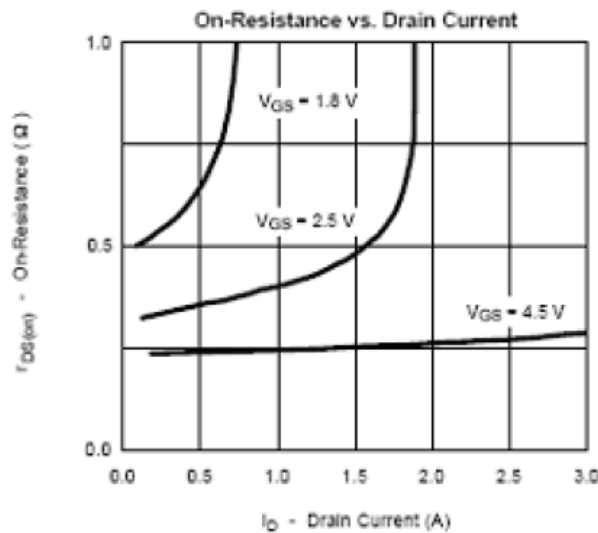
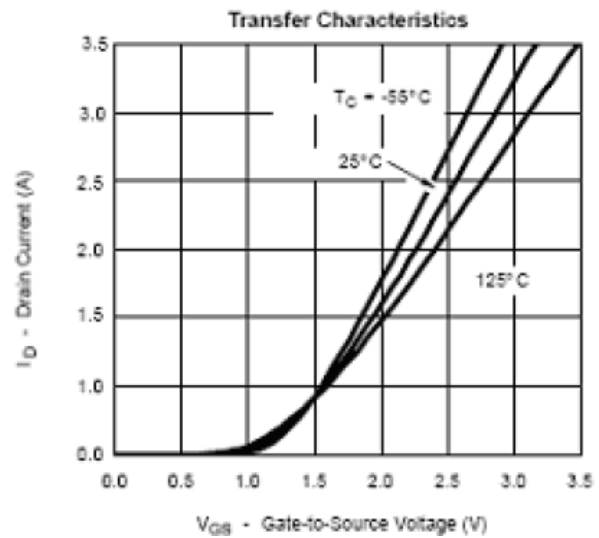
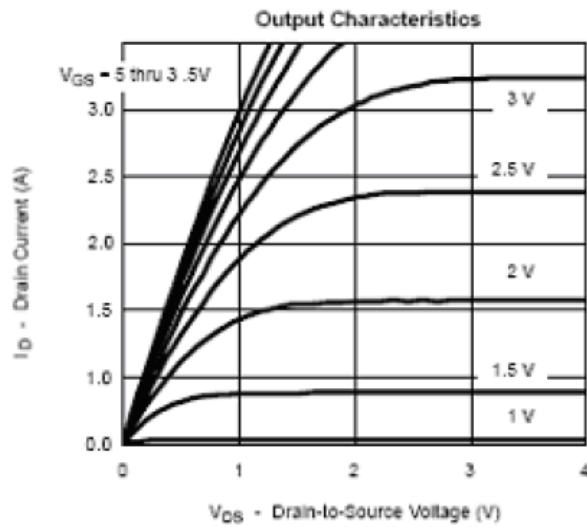
Symbol	Parameter		Value	Unit
V _{DSS}	Drain-Source Voltage		-20	V
V _{GSS}	Gate-Source Voltage		±8	V
I _D	Continuous Drain Current	T _A =25°C	-0.45	A
		T _A =70°C	-0.35	
I _{DM}	Pulsed Drain Current		-1	A
I _S	Continuous Source Current (Diode Conduction)		-0.3	A
P _D	Power Dissipation	T _A =25°C	0.27	W
		T _A =70°C	0.16	
T _J	Operating Junction Temperature Range		-55 to +150	°C
T _{STG}	Storage Temperature Range		-55 to +150	°C

Electrical Characteristics

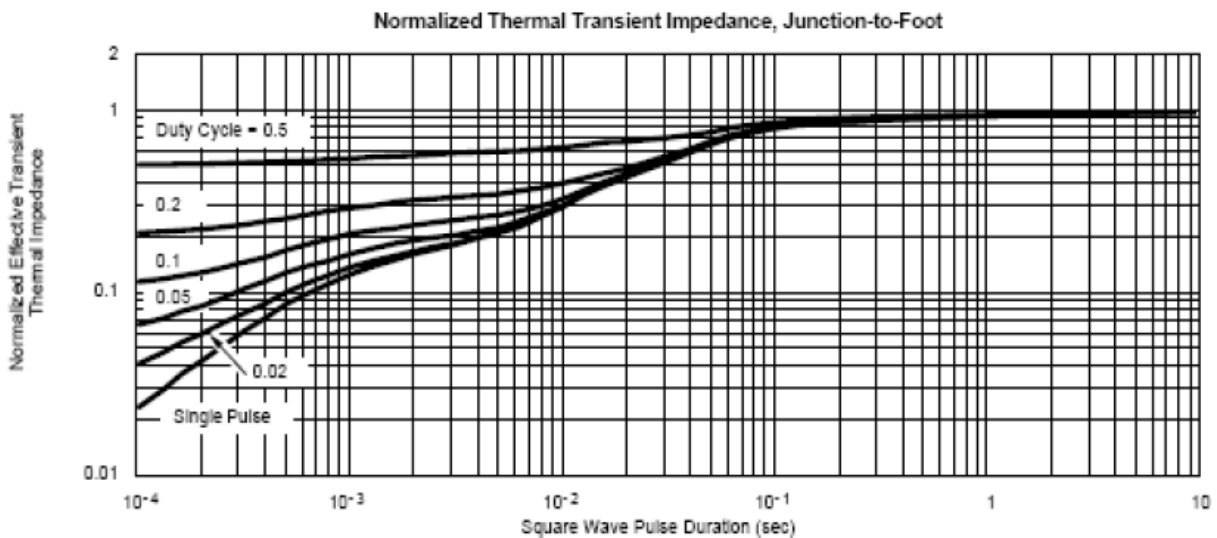
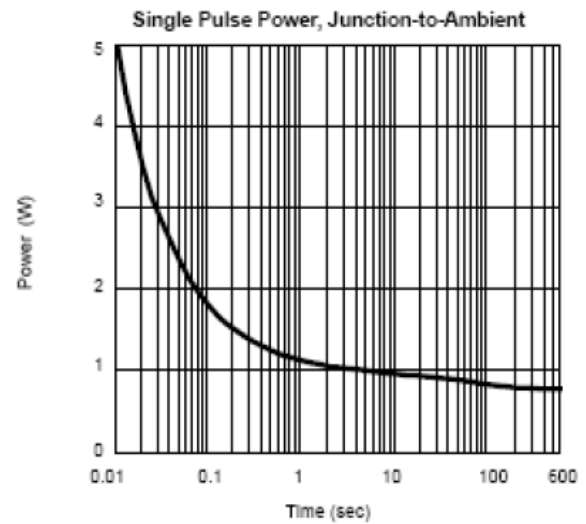
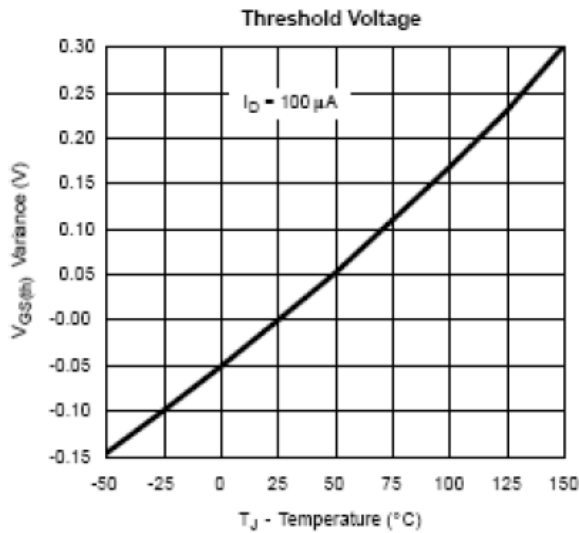
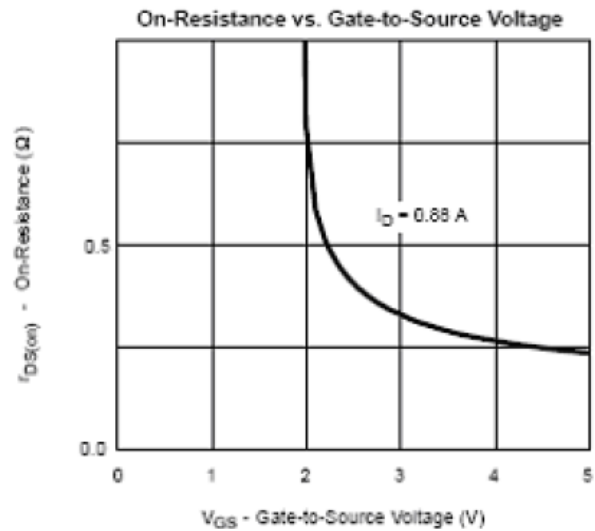
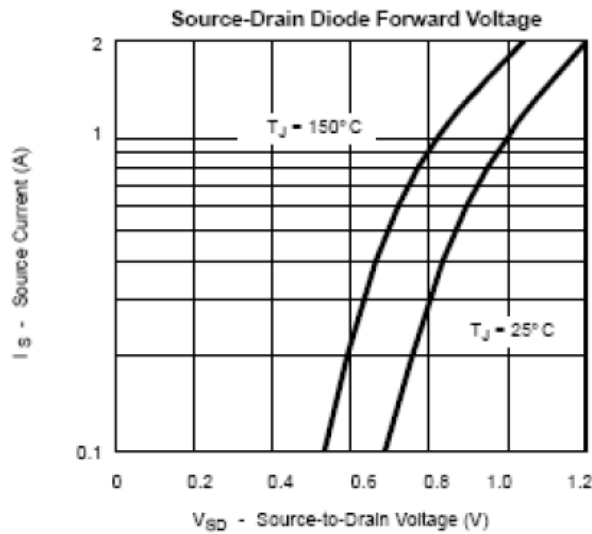
T_A=25°C, unless otherwise specified

Symbol	Parameter	Test Conditions	Min.	Typ.	Max.	Unit
Static characteristics						
BV _{DSS}	Drain-Source Breakdown Voltage	V _{GS} =0V, I _D =-250μA	-20	-	-	V
V _{GS(th)}	Gate Threshold Voltage	V _{DS} =V _{GS} , I _D =-250μA	-0.3	-	-1	V
I _{GSS}	Gate-Source Leakage Current	V _{DS} =0V, V _{GS} =±8V	-	-	±30	μA
I _{DSS}	Drain-Source Leakage Current	V _{DS} =-20V, V _{GS} =0V	-	-	-1	μA
		V _{DS} =-20V, V _{GS} =0V, T _J =55°C	-	-	-5	
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	V _{GS} =0V, I _S =-0.15A	-	-0.8	-1.2	V
Dynamic characteristics						
C _{iss}	Input Capacitance	V _{DS} =-10V, V _{GS} =0V, f=1MHz	-	40	-	pF
C _{oss}	Output Capacitance		-	15	-	
C _{rss}	Reverse Transfer Capacitance		-	6.5	-	
Q _g	Total Gate Charge	V _{DS} =-10V, V _{GS} =-4.5V, I _D =-0.6A	-	1.5	-	nC
Q _{gs}	Gate-Source Charge		-	0.3	-	
Q _{gd}	Gate-Drain Charge		-	0.35	-	
t _{d(on)}	Turn-On Delay Time	V _{DD} =-10V, R _L =10Ω, I _D =-0.4A, V _{GS} =-4.5V, R _G =6Ω	-	5	-	ns
t _r	Turn-On Rise Time		-	15	-	
t _{d(off)}	Turn-Off Delay Time		-	8	-	
t _f	Turn-Off Fall Time		-	1.4	-	

Typical Performance Characteristics

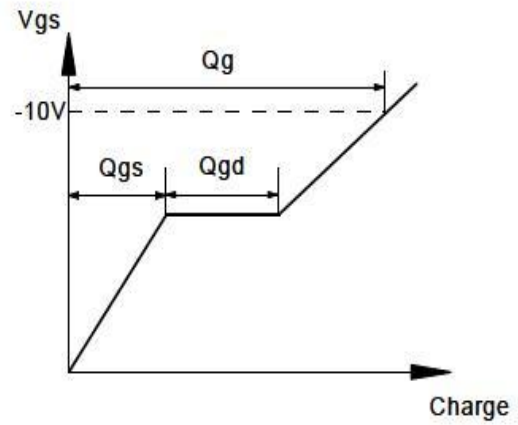
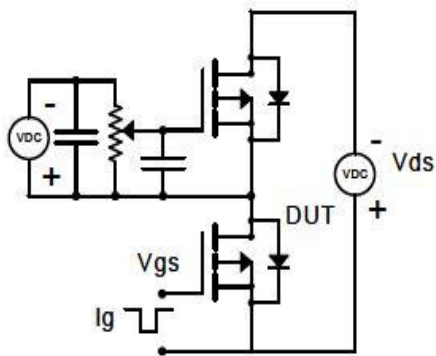


Typical Performance Characteristics

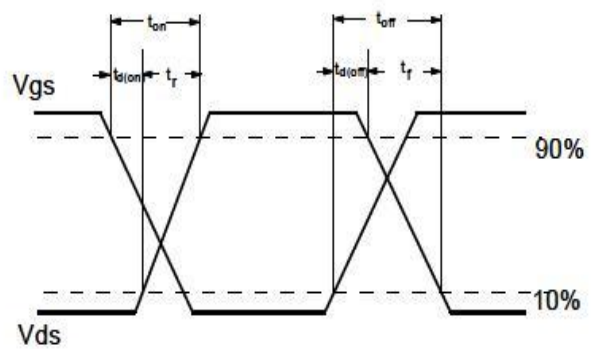
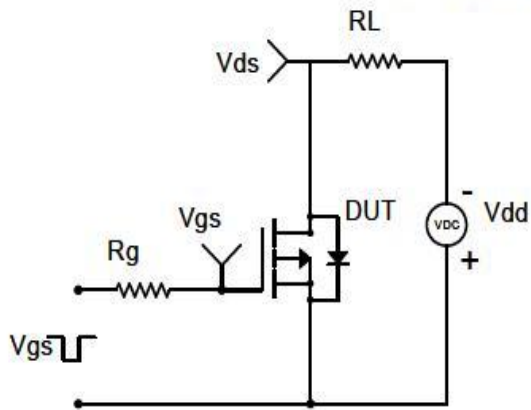


Test Circuits and Waveforms

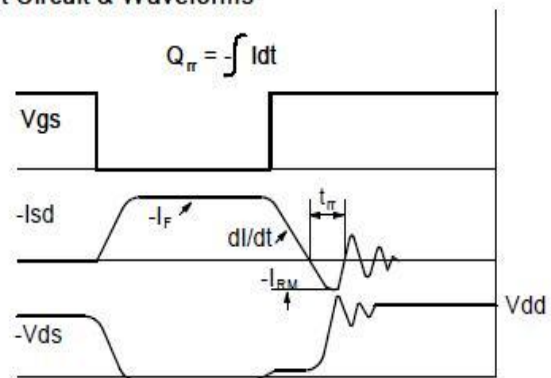
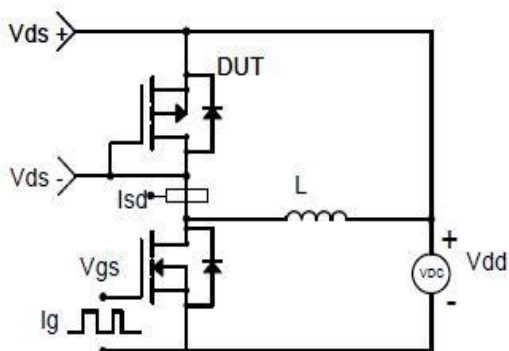
Gate Charge Test Circuit & Waveform



Resistive Switching Test Circuit & Waveforms

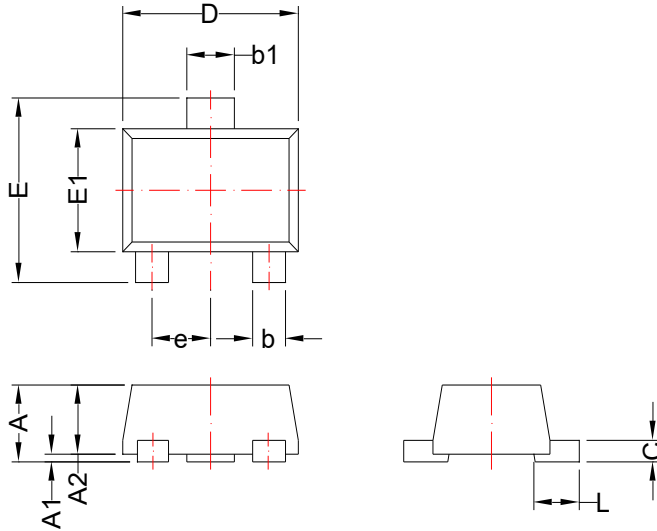


Diode Recovery Test Circuit & Waveforms

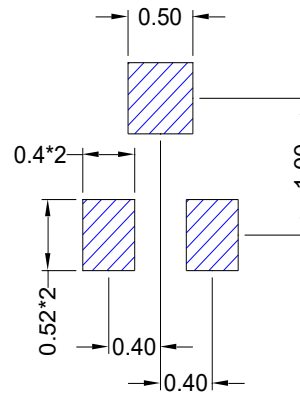


SOT-723

Package Dimension



Recommended Land Pattern



Dimensions				
Symbol	Millimeters		Inches	
	Min	Max	Min	Max
A	0.45	0.55	0.018	0.022
A1	0.00	0.10	0.000	0.004
A2	0.45	0.55	0.018	0.022
b	0.15	0.30	0.006	0.012
b1	0.25	0.40	0.010	0.016
c	0.08	0.20	0.003	0.008
D	1.10	1.30	0.043	0.051
E	1.10	1.30	0.043	0.051
E1	0.70	0.90	0.028	0.035
e	0.4 BSC		0.016 BSC	
L	0.2	0.42	0.008	0.017

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

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