

GSM1073KTFF

20V P-Channel Enhancement Mode MOSFET

Product Description

GSM1073KTFF, 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.

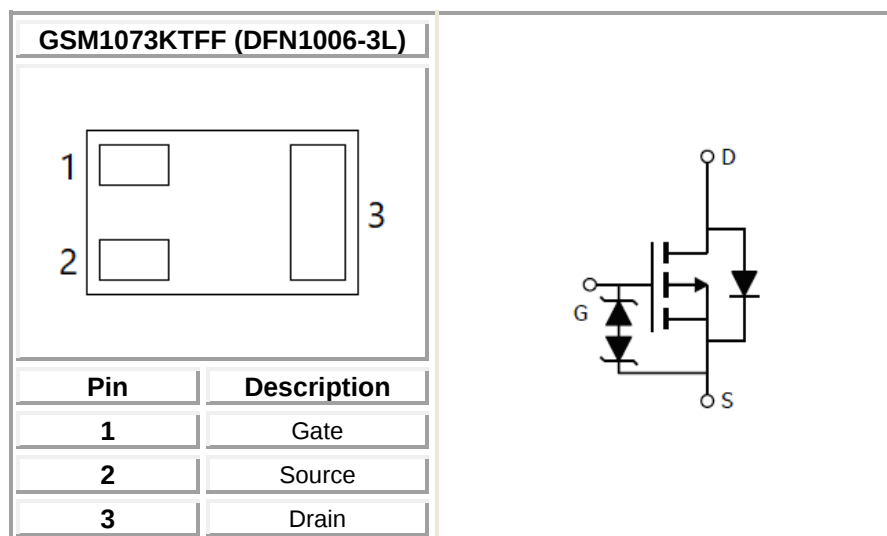
Features

- -20V/-0.5A, $R_{DS(ON)}=800m\Omega@V_{GS}=-4.5V$
- -20V/-0.2A, $R_{DS(ON)}=1100m\Omega@V_{GS}=-2.5V$
- -20V/-0.1A, $R_{DS(ON)}=1800m\Omega@V_{GS}=-1.8V$
- Low-Voltage Operation
- High-Speed Circuits
- ESD Protection
- DFN1006-3L package design

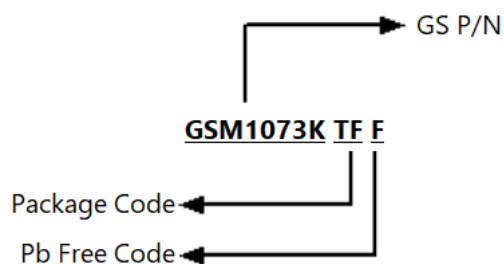
Applications

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

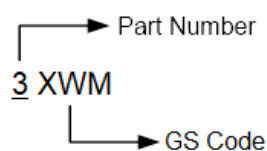
Packages & Pin Assignments



Ordering Information



Marking Information



Part Number	Package	Part Marking
GSM1073KTFF	DFN1006-3L	<u>3</u> XWM

Absolute Maximum Ratings

(T_A=25°C 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°C)	T _A =25°C	-0.47	A
		T _A =70°C	-0.38	
I _{DM}	Pulsed Drain Current		-1.6	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	0.17	
R _{θJA}	Thermal Resistance Junction to ambient		463	°C/W
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 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} =-16V, V _{GS} =0V			-1	uA
		V _{DS} =-20V, V _{GS} =0V, T _J =85°C			-30	
R _{DS(on)}	Drain-Source On-Resistance	V _{GS} =-4.5V, I _D =-0.5A		545	800	mΩ
		V _{GS} =-2.5V, I _D =-0.2A		760	1100	
		V _{GS} =-1.8V, I _D =-0.1A		980	1800	
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

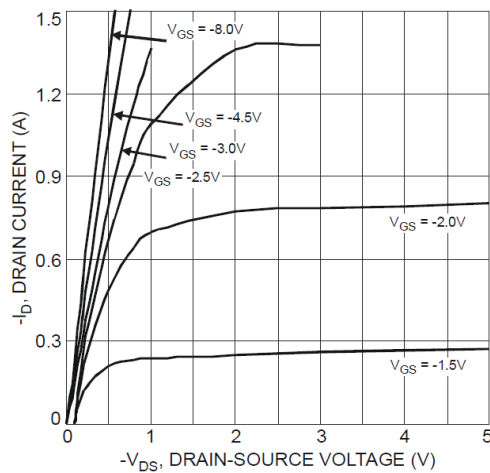


Fig. 1 Typical Output Characteristics

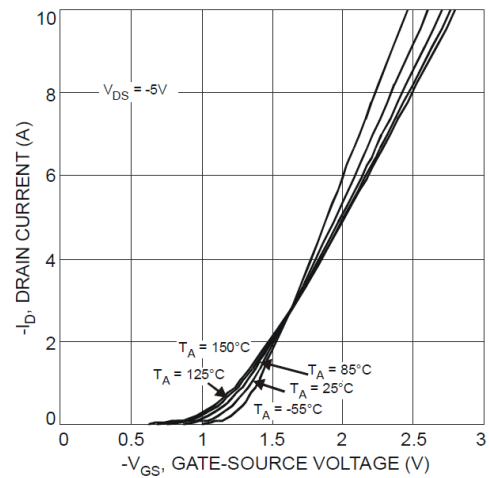


Fig. 2 Typical Transfer Characteristics

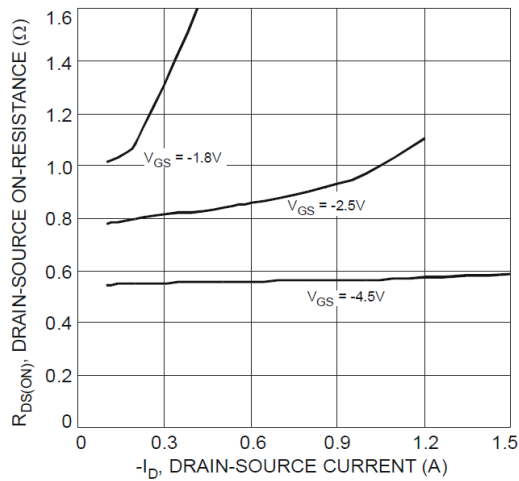


Fig. 3 Typical On-Resistance vs. I_D and V_{GS}

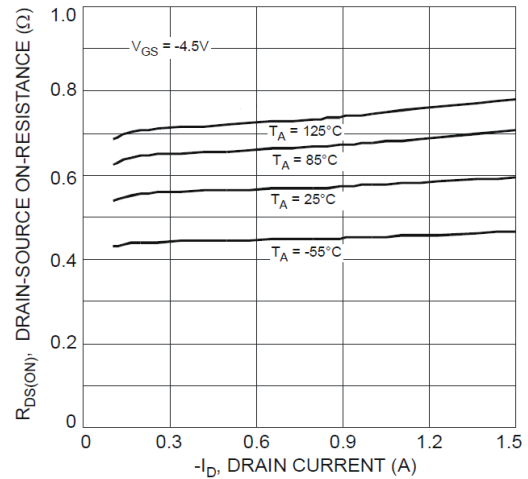


Fig. 4 Typical Drain-Source On-Resistance vs. I_D and T_J

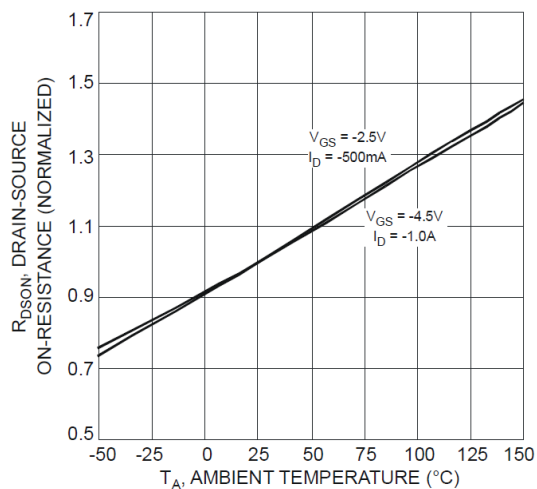


Fig. 5 On-Resistance Variation with T_J

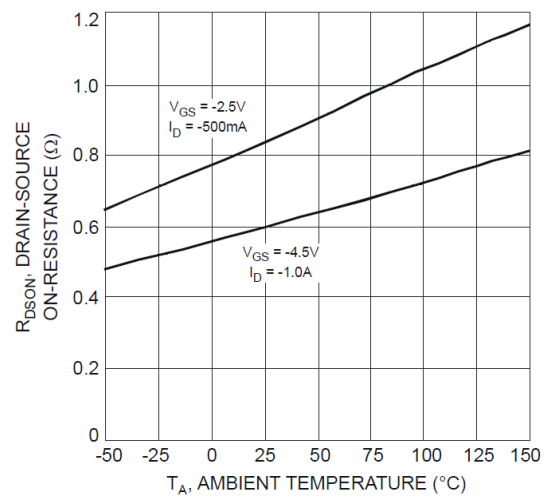


Fig. 6 On-Resistance Variation with T_J

Typical Performance Characteristics (continue)

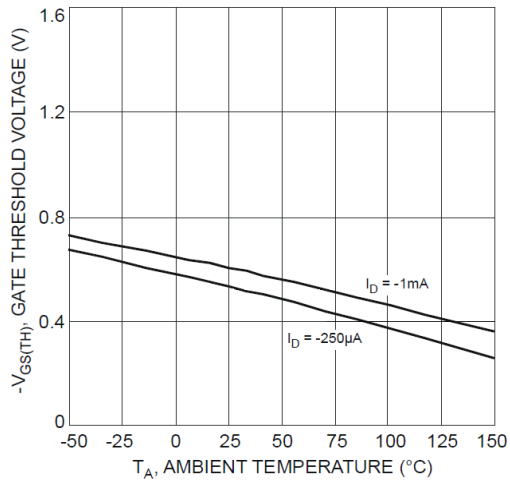


Fig. 7 Gate Threshold Variation vs. T_A

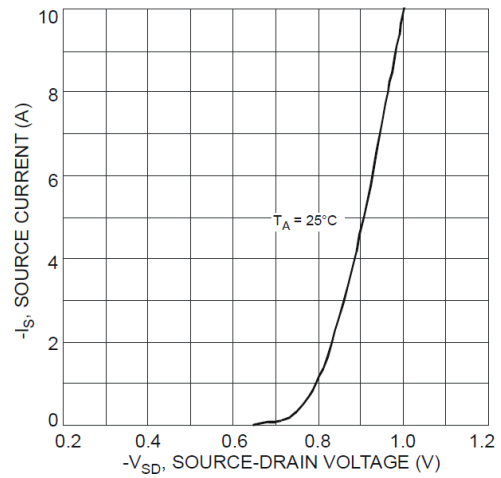


Fig. 8 Diode Forward Voltage vs. Current

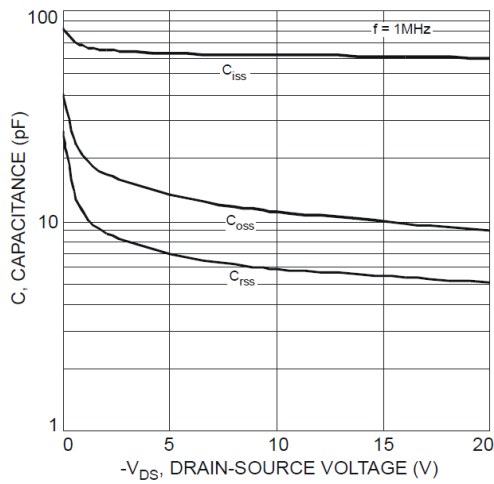


Fig. 9 Typical Capacitance

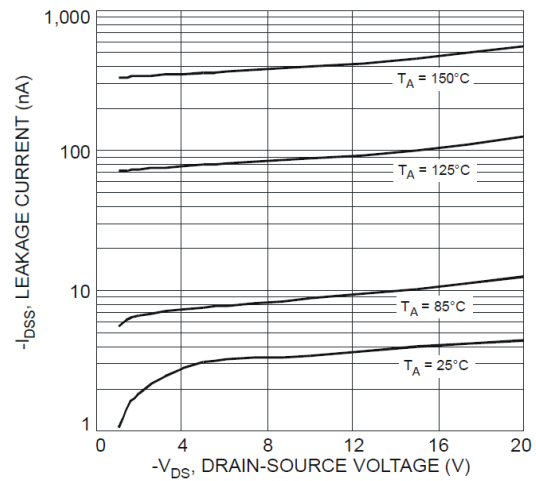


Fig. 10 Typical Drain-Source Leakage Current vs. Drain-Source Voltage

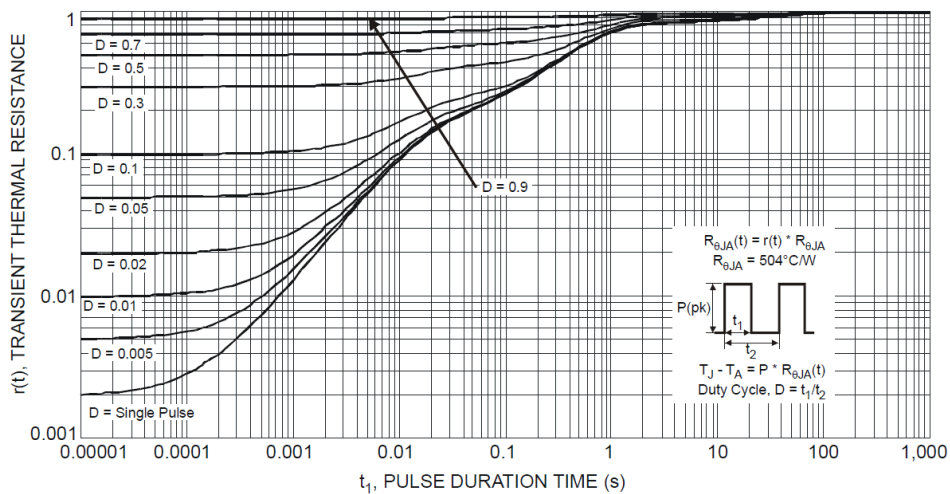
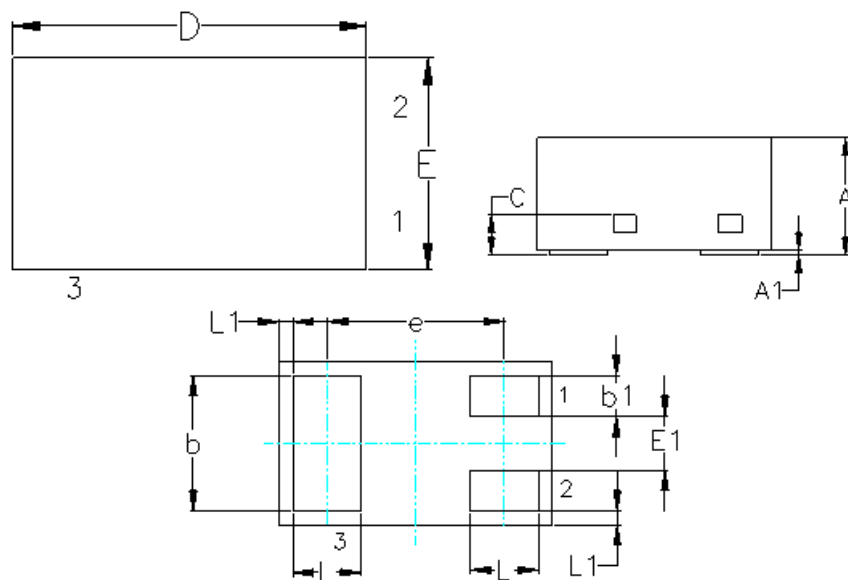


Fig. 11 Transient Thermal Response

Package Dimension

DFN1006-3L



Dimensions				
SYMBOL	Millimeters		Inches	
	MIN	MAX	MIN	MAX
A	0.450	0.550	0.018	0.022
A1	0.000	0.050	0.000	0.002
b	0.450	0.550	0.018	0.022
b1	0.100	0.200	0.004	0.008
C	0.120	0.180	0.005	0.007
D	0.950	1.050	0.037	0.041
E	0.550	0.650	0.022	0.026
E1	0.150	0.250	0.006	0.010
e	0.650 BSC		0.026 BSC	
L	0.200	0.300	0.008	0.012
L1	0.050 REF		0.002 REF	

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

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