

GSM1073KTFF

20V P-Channel MOSFET

Product Description

GSM1073K, P-Channel enhancement mode MOSFET, uses Advanced Trench Technology to provide excellent $R_{DS(ON)}$, low gate charge.

The device is 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.

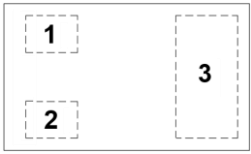
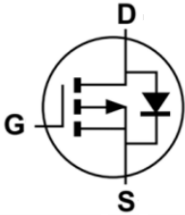
Features

- $R_{DS(ON)} = 800m\Omega @ V_{GS} = -4.5V$
- DFN1006-3L Package
- RoHS Compliant and Halogen Free

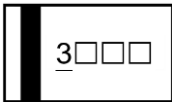
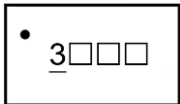
Applications

- Relay driver
- Line driver
- Load Switch

Packages & Pin Assignments

DFN1006-3L			Equivalent Circuit		
 <p>Top View</p>					
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
GSM1073KTFF	DFN1006-3L	3□□□	10,000 PCS
GSM1073K □ ¹ □ ¹ □ ² - Product Code: GSM1073K - Package Code: □ ¹ □ ¹ is TF for DFN1006-3L - Green Level: □ ² is F for RoHS Compliant and Halogen Free			
Marking Information			
 		- Product Code: 3 - GS Code: □□□ ● Band or Dot for Pin1 Side	

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	-0.5
		T _A =70°C	-0.4
I _{DM}	Pulsed Drain Current ¹	-2	A
P _D	Power Dissipation	T _A =25°C	328
		T _A =70°C	200
R _{θJA}	Maximax Thermal Resistance - Junction to Ambient ²	381	°C/ W
T _J	Junction Temperature Range	-55 to 150	°C
T _{STG}	Storage Temperature Range	-55 to 150	°C

NOTE:

- Single pulse width is limited by max junction temperature.
- The device mounted on 1in² FR-4 board with 2oz. Copper

Electrical Characteristics (T_A=25°C unless otherwise specified)

Symbol	Parameter	Test Conditions	Min.	Typ.	Max.	Unit
Static Characteristics						
B _V DSS	Drain-Source Breakdown Voltage	V _{GS} =0V, I _D =-250μA	-20	-	-	V
I _{DSS}	Drain-Source Leakage Current	V _{DS} =-20V, V _{GS} =0V	-	-	-1	μA
I _{GSS}	Gate-Source Leakage Current	V _{DS} =0V, V _{GS} =±8V	-	-	±10	μA
V _{GS(th)}	Gate Threshold Voltage	V _{DS} =V _{GS} , I _D =-250μA	-0.3	-	-1	V
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	-	980	1800	
g _{fs}	Forward Transconductance	V _{DS} =-10V, I _D =-0.3A	-	0.8	-	S
Dynamic Characteristics						
C _{iss}	Input Capacitance	V _{DS} =-10V, V _{GS} =0V, f=1MHz	-	61	-	pF
C _{oss}	Output Capacitance		-	11	-	
C _{rss}	Reverse Transfer Capacitance		-	5.9	-	
Q _g	Total Gate Charge	V _{DS} =-10V, I _D =-0.5A V _{GS} =-4.5V	-	1.4	-	nC
Q _{gs}	Gate-Source Charge		-	0.5	-	
Q _{gd}	Gate-Drain Charge		-	0.1	-	
t _{d(on)}	Turn-On Delay Time	V _{DD} =-10V, I _D =-0.5A V _{GS} =-4.5V, R _g =3Ω	-	5	-	ns
t _r	Turn-On Rise Time		-	8	-	
t _{d(off)}	Turn-Off Delay Time		-	28	-	
t _f	Turn-Off Fall Time		-	20	-	
Diode Characteristics						
V _{SD}	Diode Forward Voltage	V _{GS} =0V, I _S =-0.5A	-	-	-1.2	V

Typical Performance Characteristics

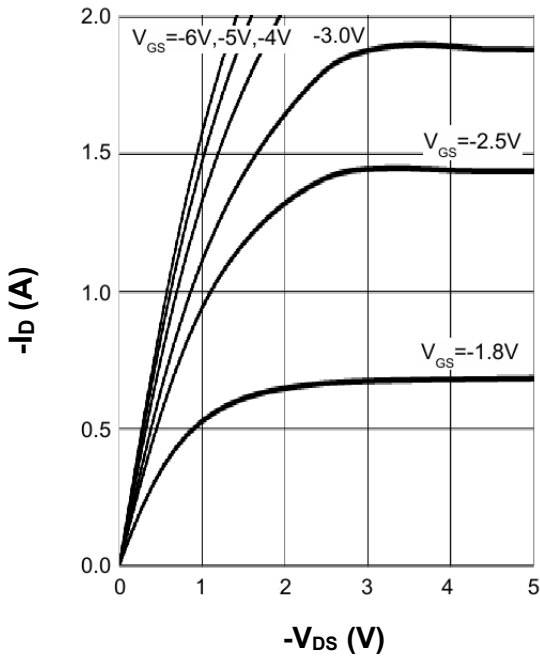


FIG.1 Output Characteristics

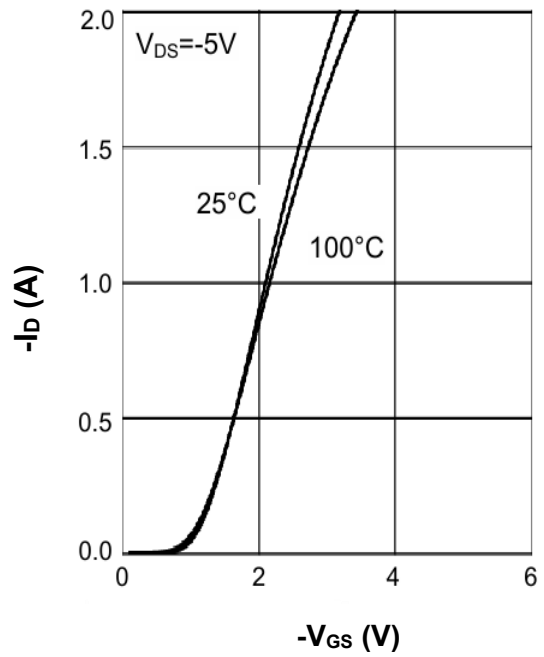


FIG.2 Transfer Characteristics

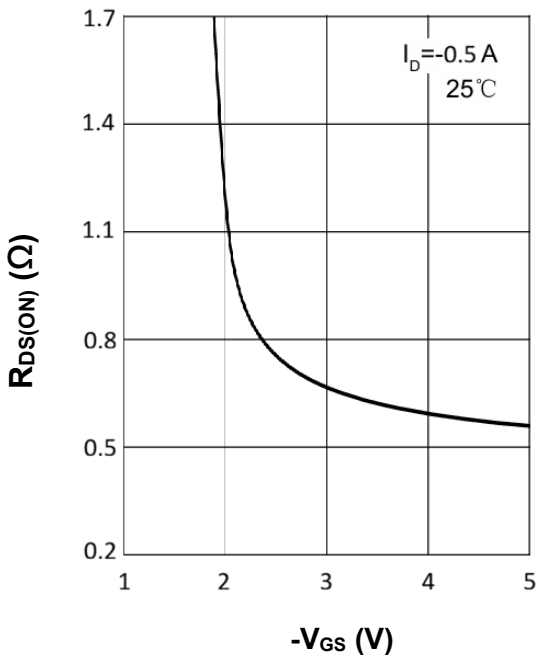


FIG.3 On-Resistance vs. Gate Voltage

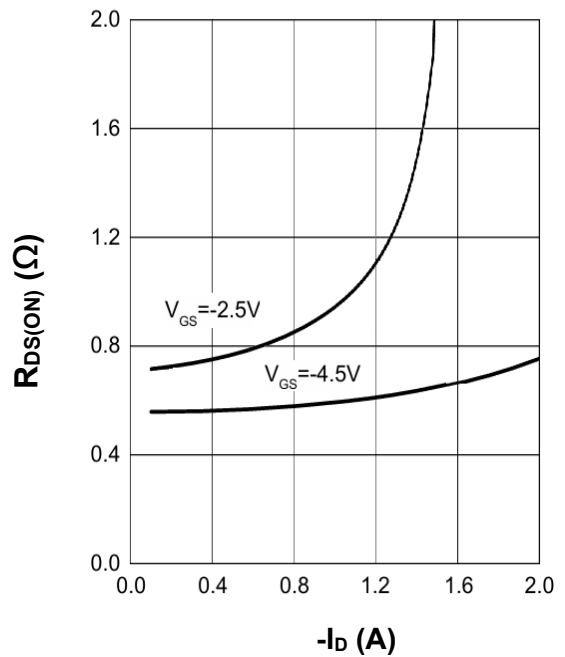


FIG.4 On-Resistance vs. Drain Current

Typical Performance Characteristics

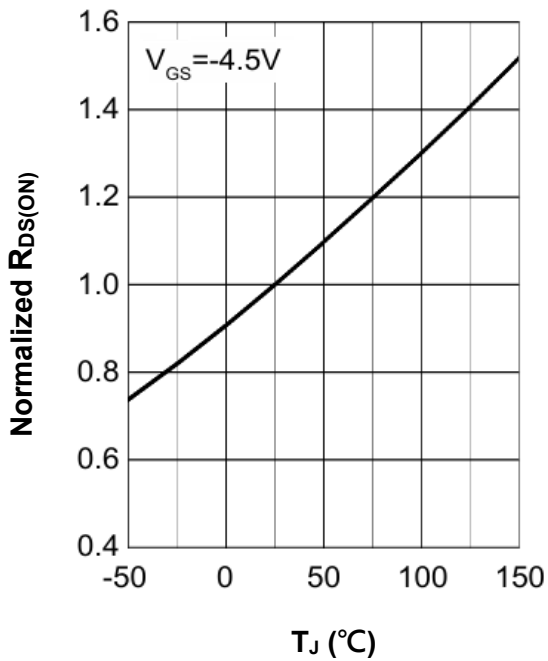


FIG.5 Normalized On-Resistance vs. T_J

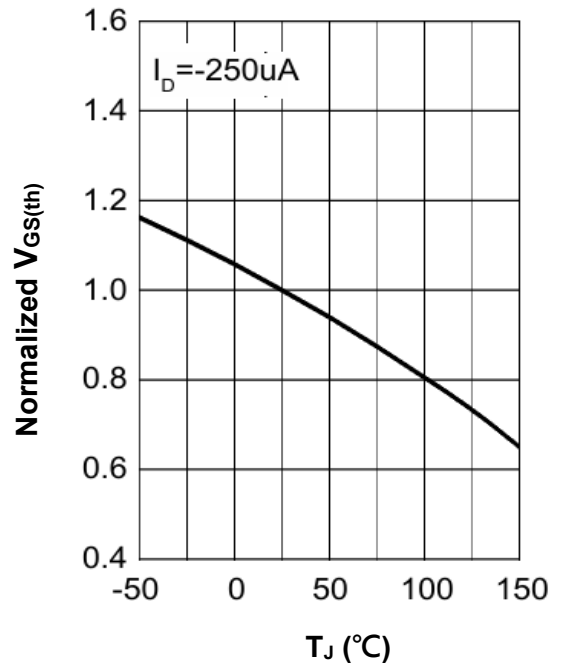


FIG.6 Normalized $V_{GS(th)}$ vs. T_J

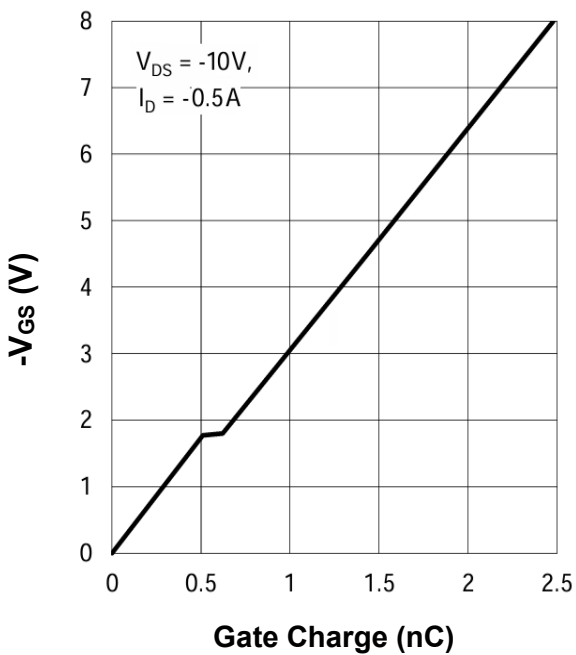


FIG.7 Gate Charge Characteristics

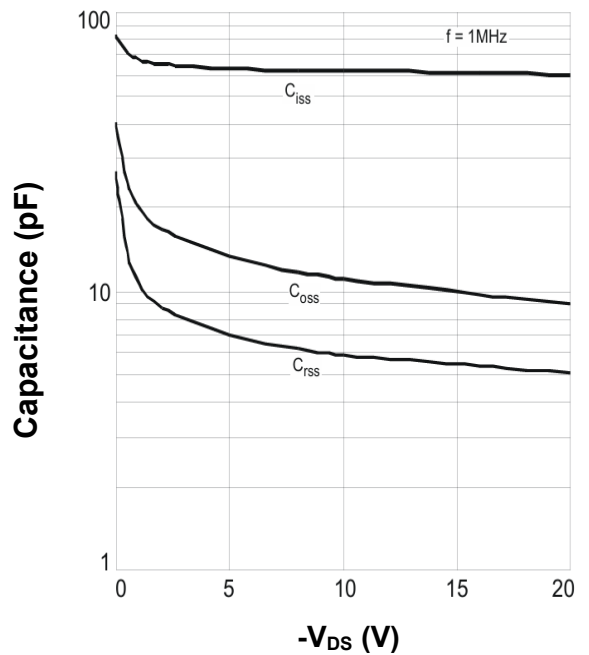


FIG.8 Capacitance Characteristics

Typical Performance Characteristics

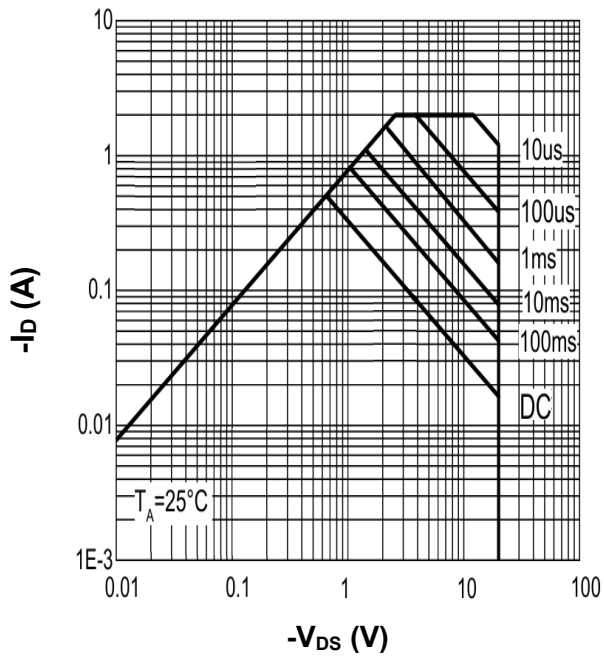


FIG.9 Maximum Safe Operation Area

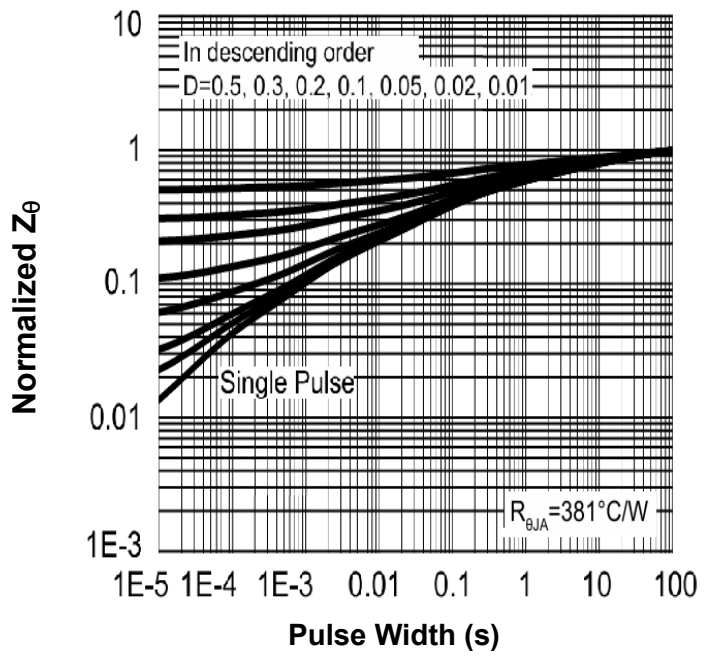
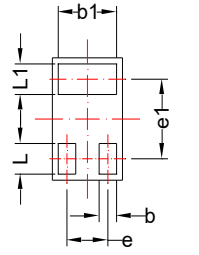
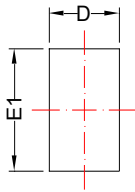


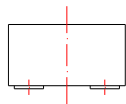
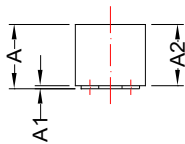
FIG.10 Normalized Transient Impedance

DFN1006-3L

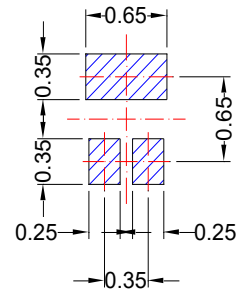
Package Dimension



BACKSIDE VIEW



Recommended Land Pattern



Unit:mm

Dimensions				
Symbol	Millimeters		Inches	
	MIN	MAX	MIN	MAX
A	0.45	0.60	0.018	0.024
A1	0.00	0.05	0.000	0.002
A2	0.40	0.60	0.016	0.024
b	0.10	0.20	0.004	0.008
b1	0.45	0.55	0.018	0.022
D	0.55	0.65	0.022	0.026
E1	0.95	1.05	0.037	0.041
e	0.35 BSC		0.014 BSC	
e1	0.65 BSC		0.026 BSC	
L	0.20	0.30	0.008	0.012
L1	0.20	0.30	0.008	0.012





NOTE:



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

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