

LMP1073KX5F 20V P-Channel Enhancement Mode MOSFETs

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 Offset (Error) Voltage
- Low-Voltage Operation
- High-Speed Circuits
- ESD Protection
- SOT-323 package design

Product Description

LMP1073KX5F, P-Channel enhancement mode MOSFET, uses Advanced Trench Technology to

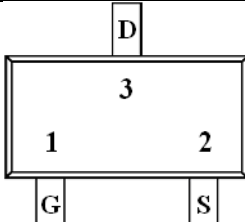
provide excellent $R_{DS(ON)}$, low gate charge.

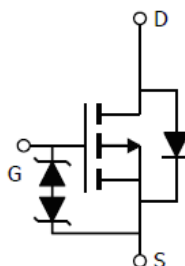
These devices are particularly suited for low voltage power management, such as smart phone and notebook computer, and low in-line power loss are needed in commercial industrial surface mount applications.

Applications

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

Pin Configuration

LMP1073KX5F (SOT-323)	
	
PIN	Description
1	Gate
2	Source
3	Drain



Ordering Information

Ordering Information					
Part Number	P/N	PKG code	Pb Free code	Package	Quantity
LMP1073KX5F	LMP1073K	X5	F	SOT-323	-

Marking Information

Marking Information		
Part Marking	Part Number	LFC code
<u>3XWMM</u>	<u>3</u>	<u>XWMM</u>

Absolute Maximum Ratings

(T_C=25°C Unless otherwise noted)

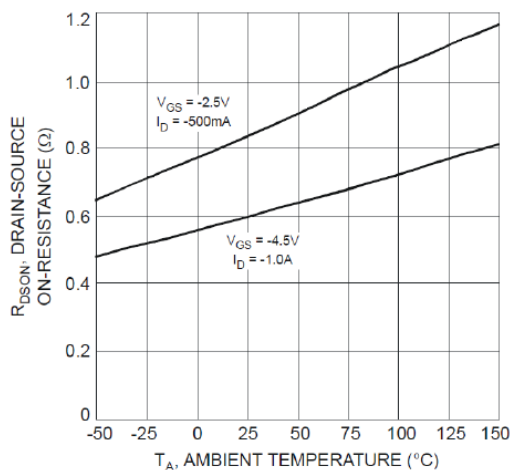
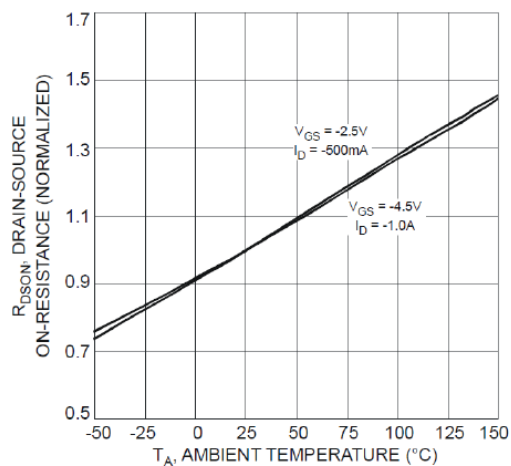
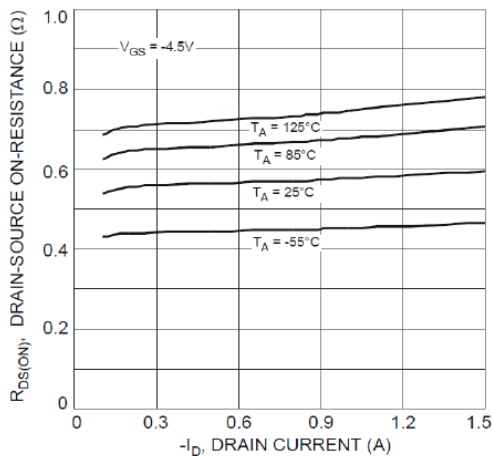
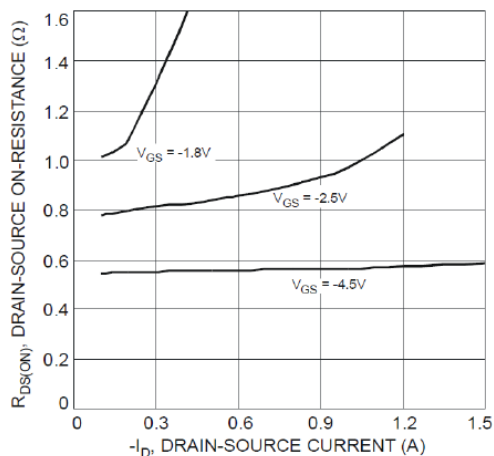
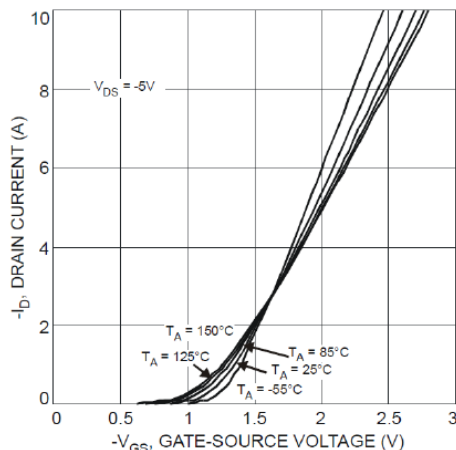
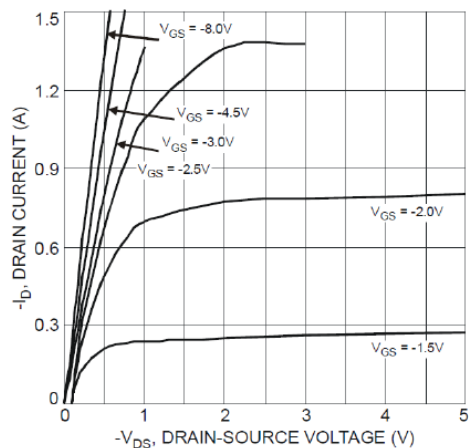
Symbol	Parameter	Typical	Unit
V _{DSS}	Drain-Source Voltage	-20	V
V _{GSS}	Gate-Source Voltage	±8	V
I _D	Continuous Drain Current (T _J =150°C)	T _A =25°C	A
		T _A =70°C	
I _{DM}	Pulsed Drain Current	-1.4	A
P _D	Power Dissipation	T _A =25°C	W
		T _A =70°C	
R _{θJA}	Thermal Resistance Junction to ambient	500	°C/W
T _J	Operating Junction Temperature Range	-55 to +150	°C
T _{STG}	Storage Temperature Range	-55 to +150	°C

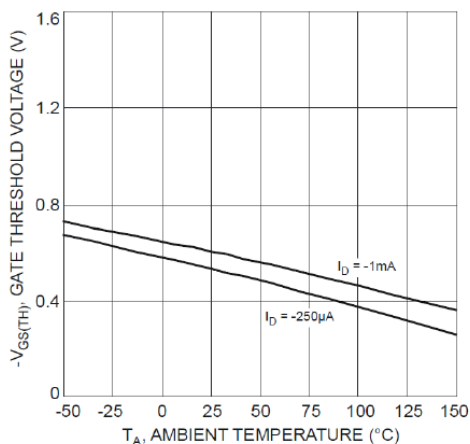
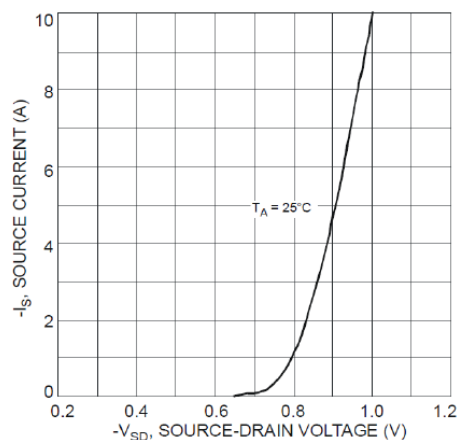
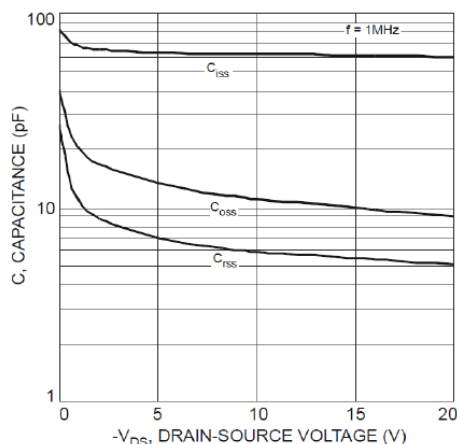
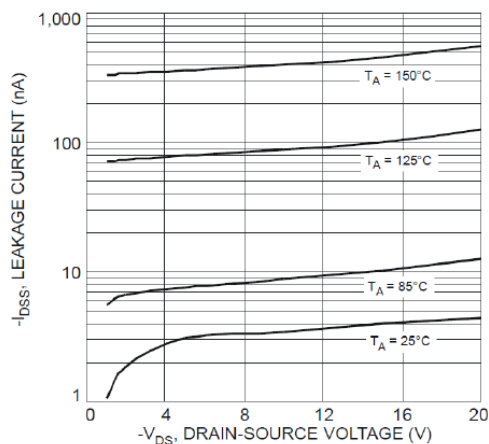
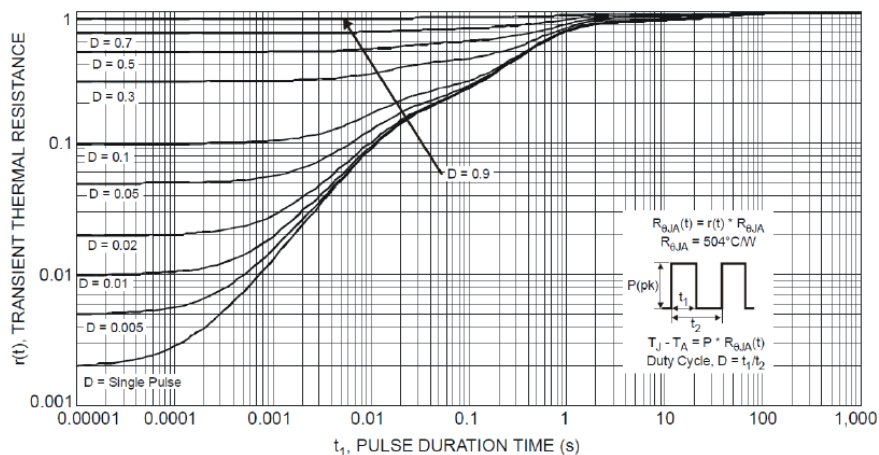
Electrical Characteristics

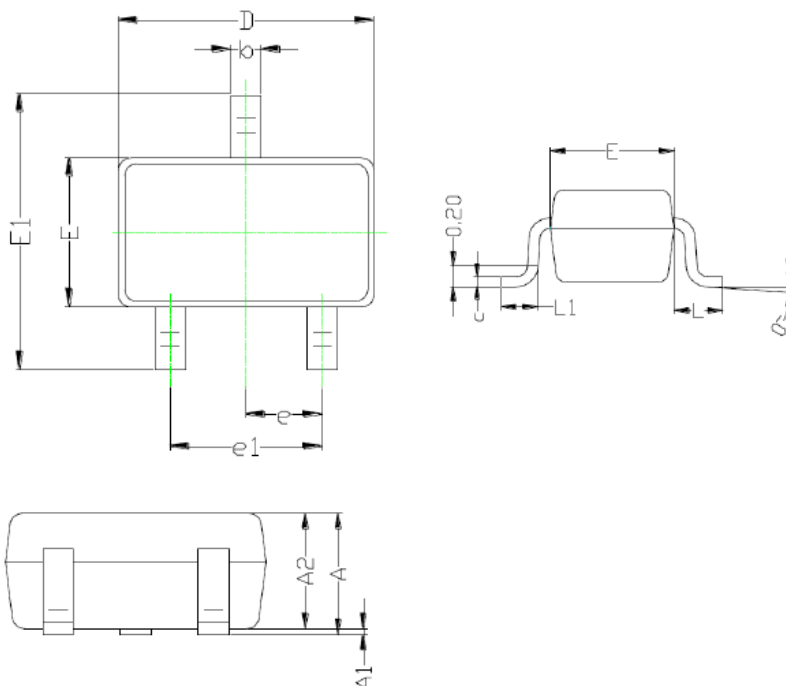
(T_C=25°C Unless otherwise noted)

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} =-20V, V _{GS} =0V			-1	uA
		V _{DS} =-16V, V _{GS} =0V T _J =85°C			-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		990	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



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-323


Dimensions				
Symbol	Millimeters		Inches	
	Min	Max	Min	Max
A	0.900	1.000	0.035	0.039
A1	0.000	0.100	0.000	0.004
A2	0.900	1.000	0.035	0.039
b	0.200	0.400	0.008	0.015
c	0.080	0.150	0.003	0.006
D	2.000	2.200	0.079	0.086
E	1.150	1.350	0.059	0.053
E1	2.150	2.400	0.084	0.094
e	0.650 TYP		0.025 TYP	
e1	1.200	1.400	0.047	0.055
L	0.525 REF		0.021 REF	
L1	0.260	0.450	0.010	0.017
θ	0°	8°	0°	8°

NOTICE:

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