

LMPP1073TX6F 20V P-Channel Enhancement Mode MOSFET
Features

- -20V/-0.5A, $R_{DS(ON)}=900m\Omega@V_{GS}=-4.5V$
- -20V/-0.2A, $R_{DS(ON)}=1450m\Omega@V_{GS}=-2.5V$
- -20V/-0.1A, $R_{DS(ON)}=2400m\Omega@V_{GS}=-1.8V$
- Low-Voltage Operation
- High-Speed Circuits
- ESD Protection
- SOT-363 package design

Product Description

LMPP1073TX6F , P-Channel enhancement mode MOSFET, uses Advanced Trench Technology to

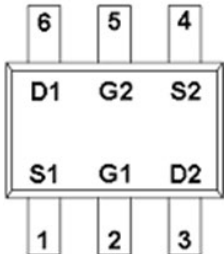
provide excellent $R_{DS(ON)}$, low gate charge.

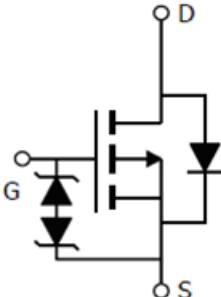
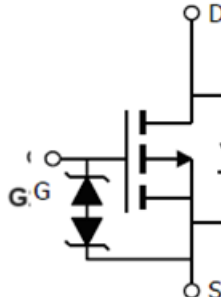
These devices are particularly suited for low voltage power management, such as smart phone and notebook computer, and low in-line power loss are needed in commercial industrial surface mount applications.

Applications

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

Pin Configuration

LMPP1073TX6F (SOP-363)		
		
PIN	Description	
1	Source1	
2	Gate1	
3	Drain2	
4	Source2	
5	Gate2	
6	Drain1	

Ordering Information

Ordering Information					
Part Number	P/N	PKG code	Pb Free code	Package	Quantity
LMPP1073TX6F	LMPP1073T	X6	F	SOT-363	3000pcs

Marking Information

Marking Information	
Part Number	LFC code
LMPP1073TX6F	<u>3</u> WM

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)	TC=25°C	A
		TC=70°C	
I _{DM}	Pulsed Drain Current	-2	A
P _D	Power Dissipation	TC=25°C	W
		TC=70°C	
T _J	Operating Junction Temperature	-55 to +150	°C
T _{STG}	Storage Temperature Range	-55 to +150	°C
R _{θJA}	Thermal Resistance-Junction to Case	300	°C/W

Electrical Characteristics

(T_C=25°C Unless otherwise noted)

Symbol	Parameter	Conditions	Min	Typ	Max	Unit
Static characteristics						
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	V
I _{GSS}	Gate Leakage Current	V _{DS} =0V, V _{GS} =±8V			±10	uA
I _{DSS}	Drain-Source Leakage Current	V _{DS} =-20V, V _{GS} =0V			-1	uA
		V _{DS} =-16V, V _{GS} =0V T _J =85°C			-30	
V _{SD}	Diode Forward Voltage	I _S =-0.5A, V _{GS} =0V			-1.3	V
R _{DS(on)}	Drain-Source On-Resistance	V _{GS} =-4.5V, I _D =-0.5A		565	900	mΩ
		V _{GS} =-2.5V, I _D =-0.2A		760	1450	
		V _{GS} =-1.8V, I _D =-0.1A		990	2400	
		V _{GS} =-1.5V, I _D =-0.1A		1225		
g _{FS}	Forward Transconductance	V _{DS} =-10V, I _D =-0.3A		1.2		S
Dynamic characteristics						
Q _g	Total Gate Charge ^{2,3}	V _{DD} =-10V, V _{GS} =-4.5V, I _D =-0.25A		0.62		nC
Q _{gs}	Gate-Source Charge ^{2,3}			0.1		
Q _{gd}	Gate-Drain Charge ^{2,3}			0.13		
C _{iSS}	Input Capacitance	V _{DS} =-16V, V _{GS} =0V, f=1.0MHz		59.8		pF
C _{oss}	Output Capacitance			12.1		
C _{rSS}	Reverse Transfer Capacitance			6.4		
t _{d(on)}	Turn-On Time ^{2,3}	V _{DD} =-10V, V _{GEN} =-4.5V, R _L =47Ω, I _D =-0.2A, R _G =10Ω		5.1		ns
t _r				8.1		
t _{d(off)}	Turn-Off Time ^{2,3}			28.4		
t _f				20.7		

Typical Performance Characteristics

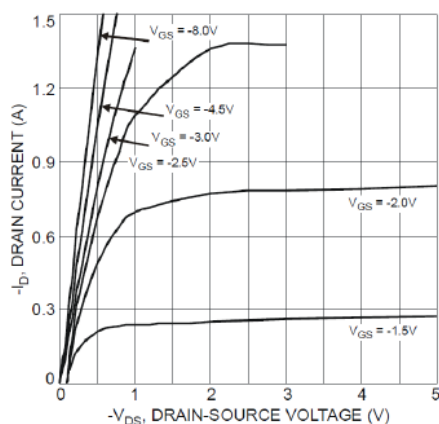


Fig. 1 Typical Output Characteristics

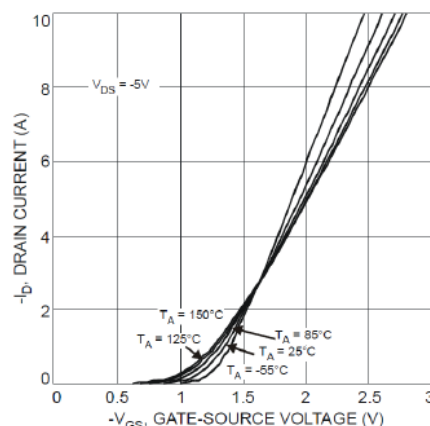


Fig. 2 Typical Transfer Characteristics

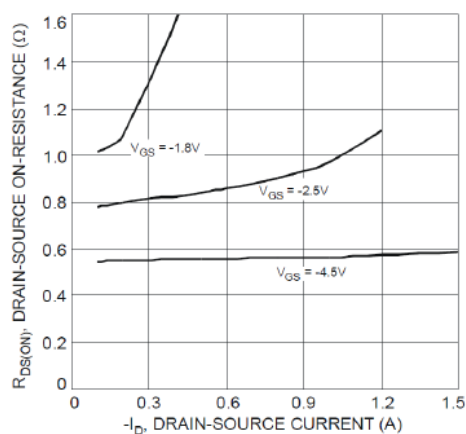


Fig. 3 Typical On-Resistance vs. I_D and V_{GS}

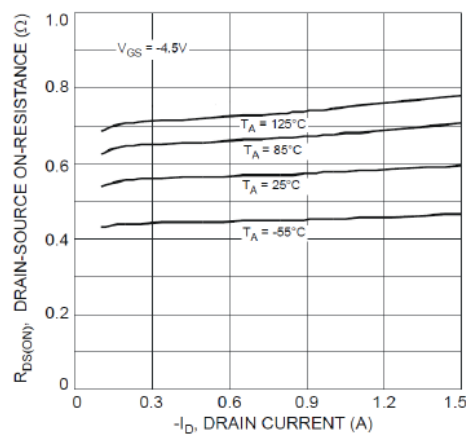


Fig. 4 Typical Drain-Source On-Resistance vs. I_D and T_J

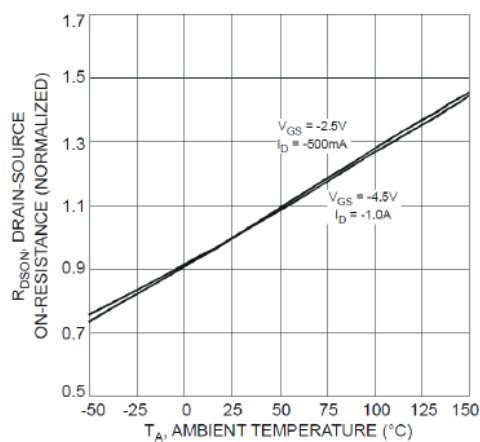


Fig. 5 On-Resistance Variation with T_J

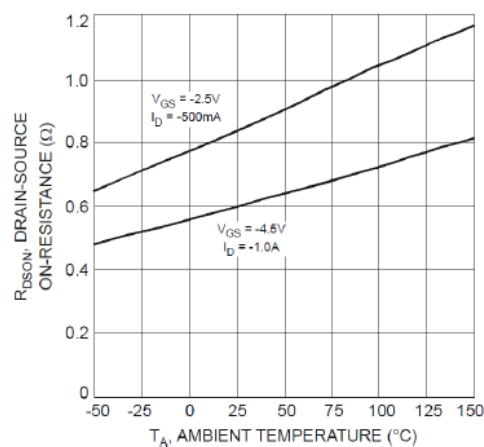
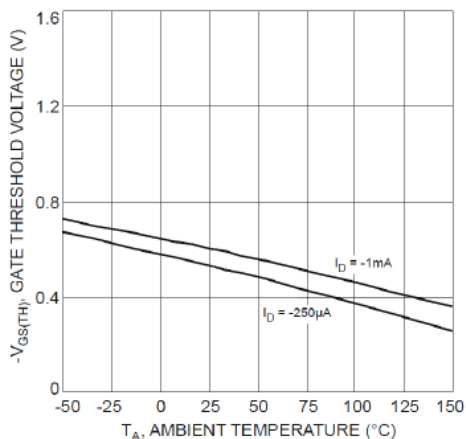
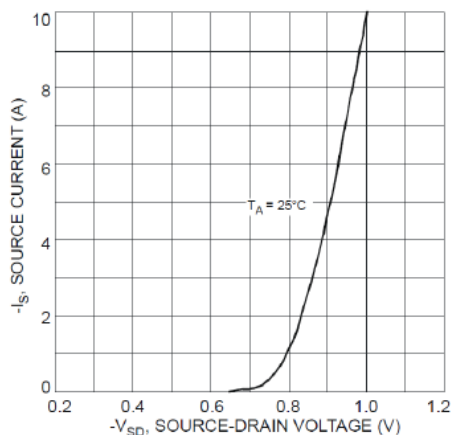
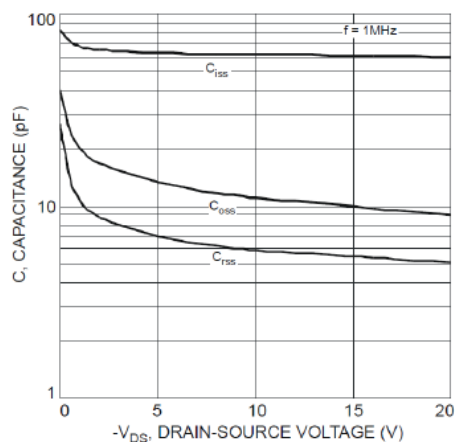
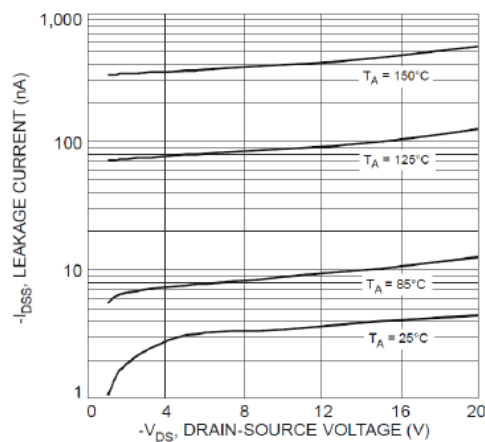
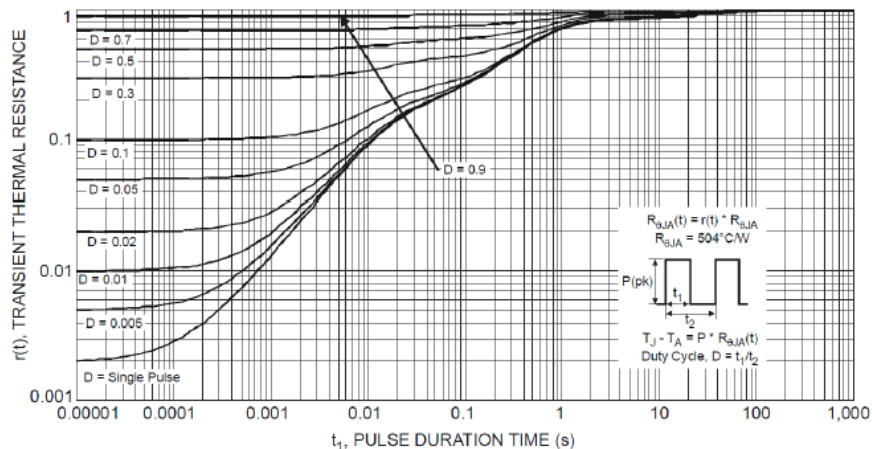
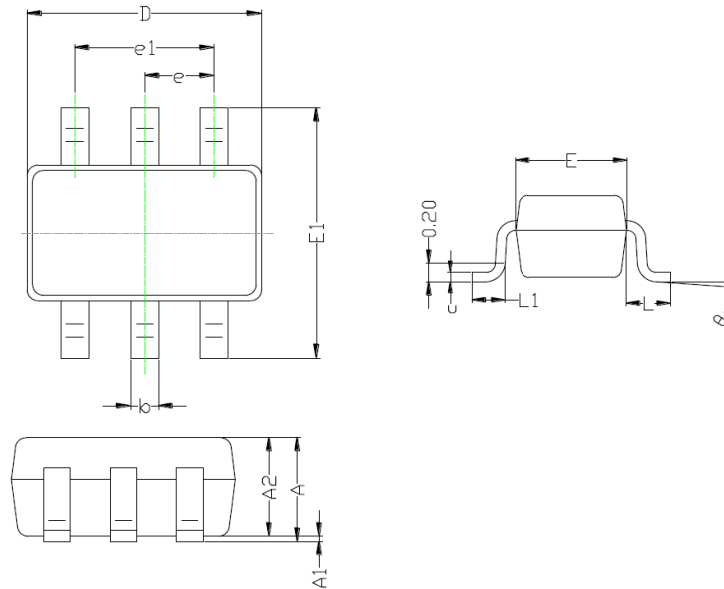


Fig. 6 On-Resistance Variation with T_J


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-363


Dimensions				
Symbol	Millimeters		Inches	
	Min	Max	Min	Max
A	0.90	1.00	0.035	0.039
A1	0.00	0.10	0.000	0.004
A2	0.90	1.00	0.035	0.039
b	0.15	0.30	0.006	0.012
c	0.10	0.15	0.004	0.006
D	2.00	2.20	0.079	0.087
E	1.15	1.35	0.045	0.053
E1	2.15	2.40	0.085	0.094
e	0.650 (BSC)		0.026 (BSC)	
e1	1.20	1.40	0.047	0.055
L	0.525 (BSC)		0.021 (BSC)	
L1	0.26	0.45	0.010	0.018
θ	0°	8°	0°	8°

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