LMPP1073TX6F 20V P-Channel Enhancement Mode MOSFET

Features

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

Product Description

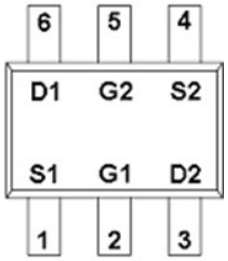
LMPP1073TX6F , P-Channel enhancement mode MOSFET, uses Advanced Trench Technology to provide excellent $R_{DS(ON)}$, low gate charge.
These devices are particularly suited for low voltage power management, such as smart phone and notebook computer, and low in-line power loss are needed in commercial industrial surface mount applications.

Applications

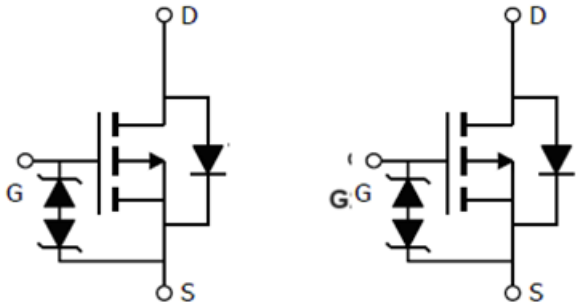
- Drivers: Relays, Solenoids, Lamps, Hammers
- Battery Operated Systems
- Power Supply Converter Circuits
- Load/Power Switching Smart Phones, Pagers

Pin Configuration

LMPP1073TX6F (SOP-363)



PIN	Description
1	Source1
2	Gate1
3	Drain2
4	Source2
5	Gate2
6	Drain1



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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	3WM

Absolute Maximum Ratings

(T_C=25ºC 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 (TJ=150℃)	TC=25℃	-0.5	A
		TC=70℃	-0.4	
I_{DM}	Pulsed Drain Current		-2	A
P_D	Power Dissipation	TC=25℃	0.42	W
		TC=70℃	0.3	
T_J	Operating Junction Temperature		-55 to +150	℃
T_{STG}	Storage Temperature Range		-55 to +150	℃
$R_{\theta JA}$	Thermal Resistance-Junction to Case		300	℃/W

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Electrical Characteristics

(T_C=25ºC 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 TJ=85ºC			-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		

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Typical Performance Characteristics

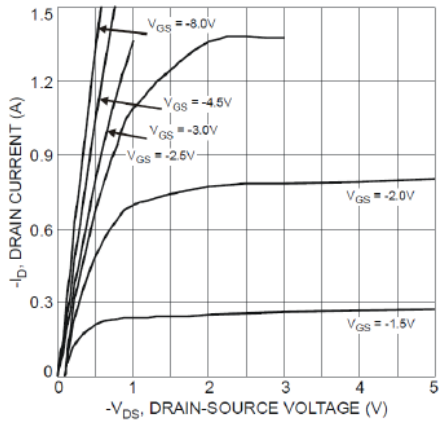

Fig. 1 Typical Output Characteristics

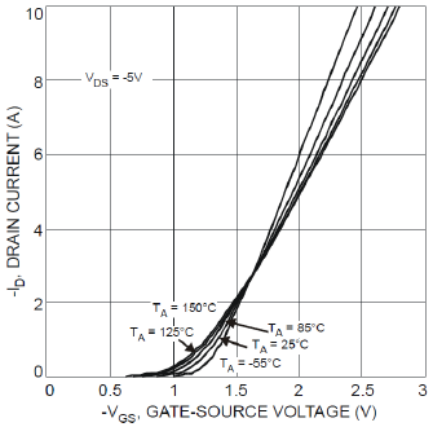

Fig. 2 Typical Transfer Characteristics

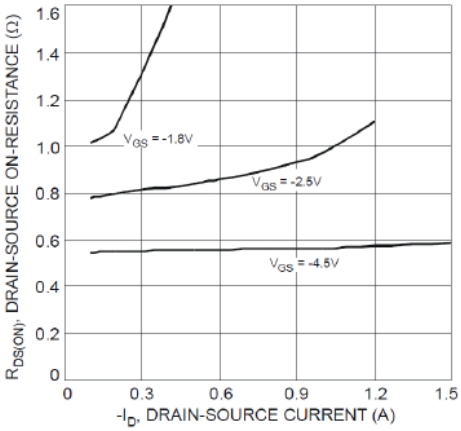

Fig. 3 Typical On-Resistance vs. I_D and V_{GS}

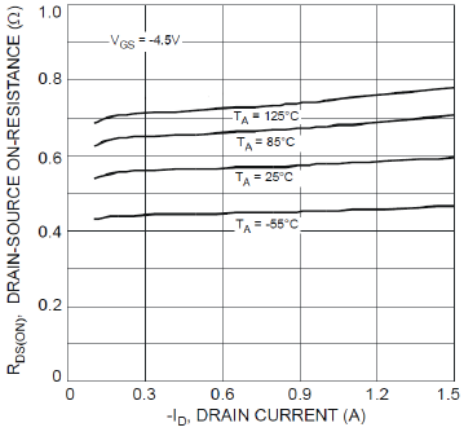

Fig. 4 Typical Drain-Source On-Resistance vs. I_D and T_J

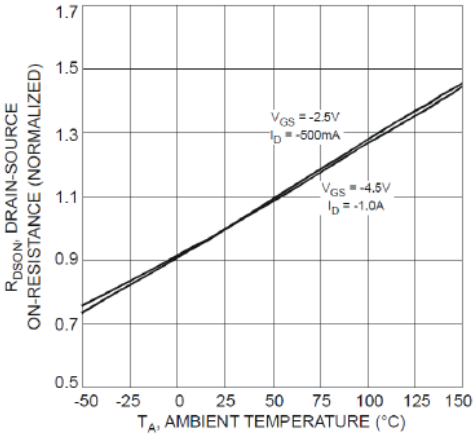

Fig. 5 On-Resistance Variation with T_J

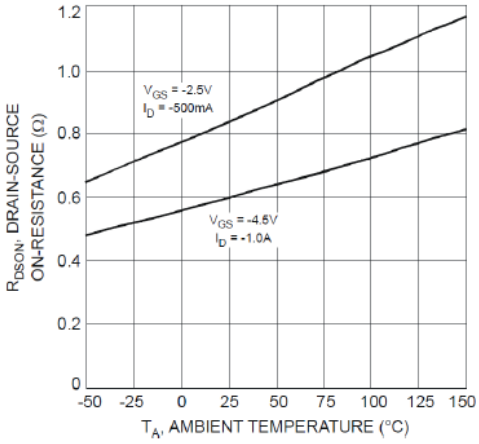

Fig. 6 On-Resistance Variation with T_J

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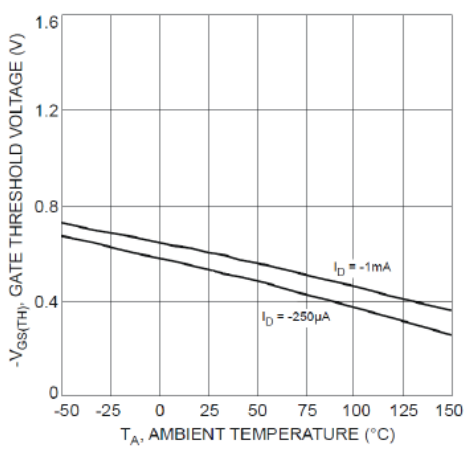

Fig. 7 Gate Threshold Variation vs. T_A

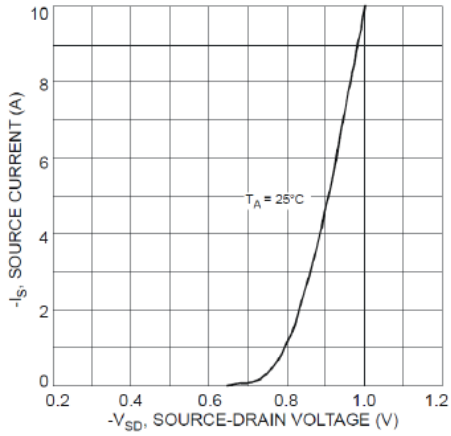

Fig. 8 Diode Forward Voltage vs. Current

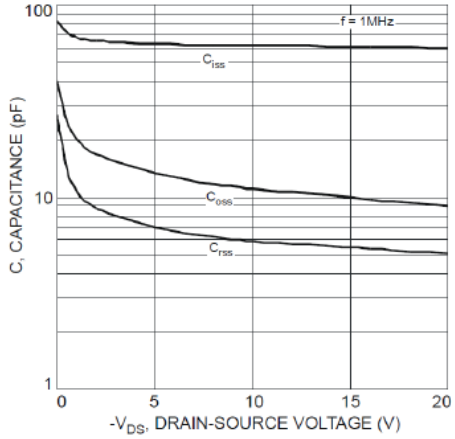

Fig. 9 Typical Capacitance

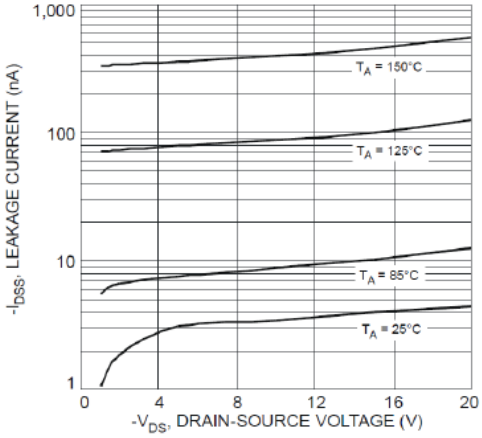

Fig. 10 Typical Drain-Source Leakage Current vs. Drain-Source Voltage

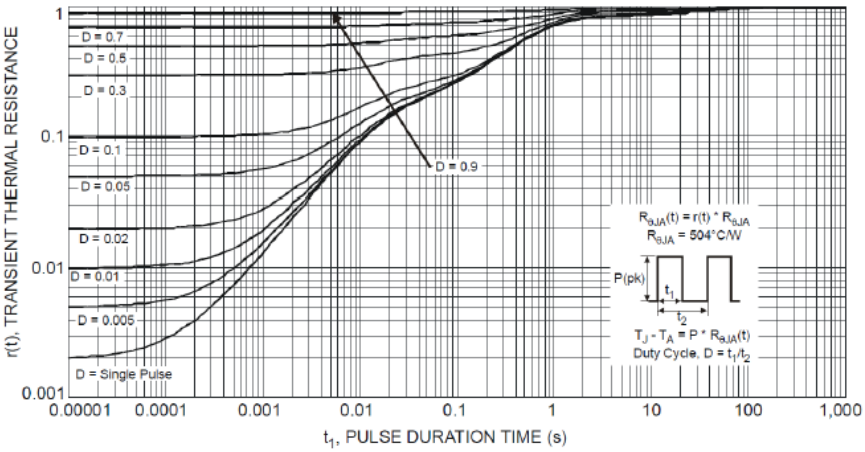

Fig. 11 Transient Thermal Response

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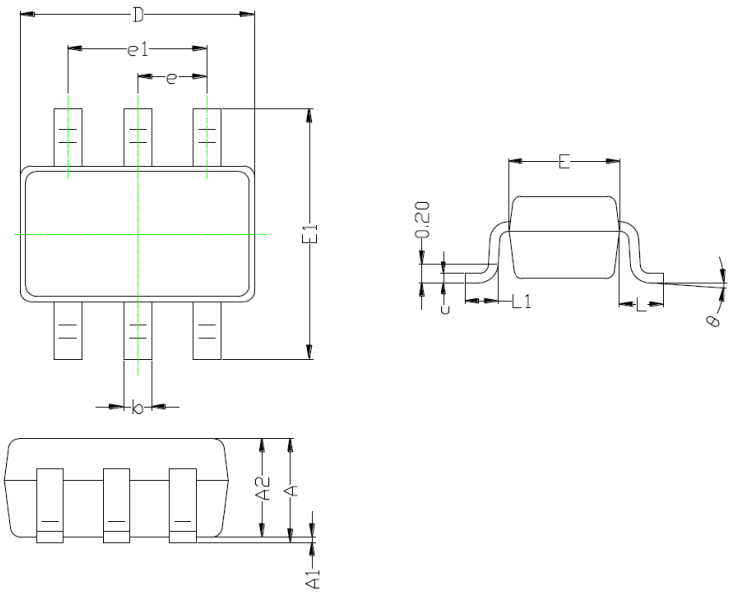
Package Dimension:

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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