LMPP3925EX7F 30V P-Channel Enhancement Mode MOSFET

Features

- -30V/-0.27A, $R_{DS(ON)}$=2500mΩ@V_{GS}=-4.5V
  $R_{DS(ON)}$=2900mΩ@V_{GS}=-2.5V
  $R_{DS(ON)}$=5000mΩ@V_{GS}=-1.8V
- Low-Voltage Operation
- High-Speed Circuits
- ESD Protection
- SOT-563 package design

Product Description

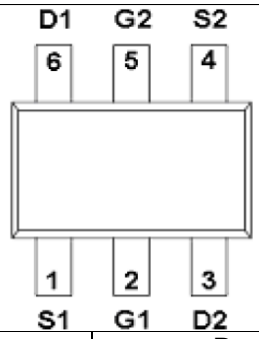
LMPP3925EX7F , P-Channel enhancement mode MOSFET, uses Advanced Trench Technology to provide excellent $R_{DS(ON)}$, low gate charge.
These devices are particularly suited for low voltage power management, such as smart phone and notebook computer, and low in-line power loss are needed in commercial industrial surface mount applications.

Applications

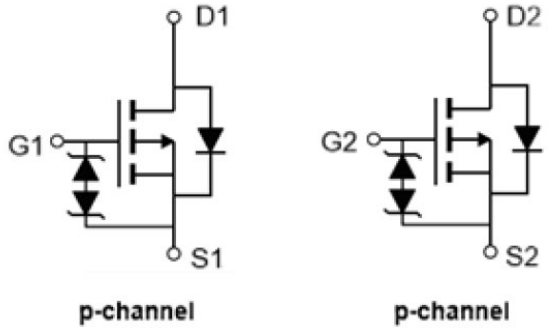
- Drivers: Relays, Solenoids, Lamps, Hammers
- Battery Operated Systems
- Power Supply Converter Circuits
- Load/Power Switching Smart Phones, Pagers

Pin Configuration

LMPP3925EX7F (SOT-563)



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
LMPP3925EX7F	LMP3925E	X6	F	SOT-563	3000pcs

Marking Information

Marking Information	
Part Number	LFC code
5	XM

Absolute Maximum Ratings

(T_C=25ºC Unless otherwise noted)

Symbol	Parameter		Typical	Unit
V_{DSS}	Drain-Source Voltage		-30	V
V_{GSS}	Gate-Source Voltage		±10	V
I_D	Continuous Drain Current (T_J=150℃)	T_A=25℃	-0.27	A
		T_A=70℃	-0.22	
I_{DM}	Pulsed Drain Current		-1.1	A
P_D	Power Dissipation	T_A=25℃	0.25	W
		T_A=70℃	0.16	
T_J	Operating Junction Temperature		-55 to +150	℃
T_{STG}	Storage Temperature Range		-55 to +150	℃
$R_{\theta JA}$	Thermal Resistance Junction to ambient		500	℃/W

Note1. Device mounted on FR-4 substrate PC board, 2oz copper, with minimum recommended pad layout.

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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	-30			V
$V_{GS\ (th)}$	Gate Threshold Voltage	V_{DS}=V_{GS}, I_D=-250uA	-0.4		-1.0	V
I_{GSS}	Gate Leakage Current	V_{DS}=0V, V_{GS}=±8V			±10	nA
I_{DSS}	Drain-Source Leakage Current	V_{DS}=-24V, V_{GS}=0V			-1	uA
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		1.6	2.5	mΩ
		V_{GS}=-2.5V, I_D=-0.2A		2.0	2.9	
		V_{GS}=-1.8V, I_D=-0.1A		2.6	5.0	
g_{FS}	Forward Transconductance	V_{DS}=-10V, I_D=-0.25A		530		mS
Dynamic						
Q_g	Total Gate Charge	V_{DD}=-15V, V_{GS}=-10V, I_D=-1A		1.0		nC
Q_{gs}	Gate-Source Charge	V_{DD}=-15V, V_{GS}=-8V, I_D=-1A		0.2		
Q_{gd}	Gate-Drain Charge			0.1		
C_{iss}	Input Capacitance	V_{DS}=-15V, V_{GS}=0V, f=1.0MHz		54		pF
C_{oss}	Output Capacitance			10.9		
C_{rss}	Reverse Transfer Capacitance			5.8		
$t_{d(on)}$	Turn-On Time	V_{DD}=-10V, R_L=47Ω, V_{GEN}=-4.5V, I_D=-0.2A, R_G=10Ω		3.8		ns
t_r				11		
$t_{d(off)}$	Turn-Off Time			45		
t_f				20		

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Typical Performance Characteristics

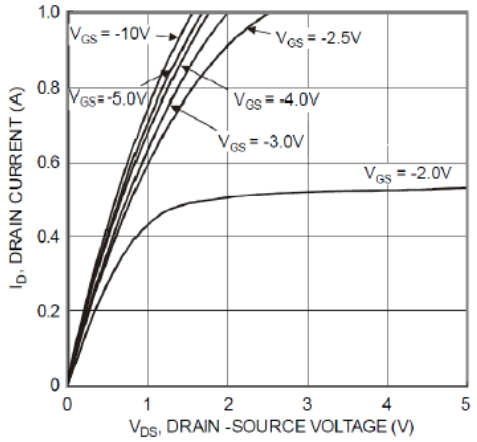

Fig. 1 Typical Output Characteristics

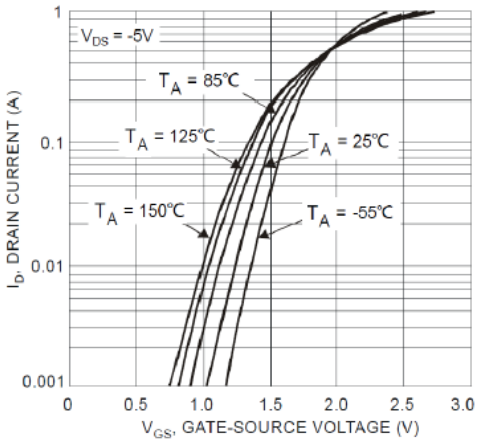

Fig. 2 Typical Transfer Characteristics

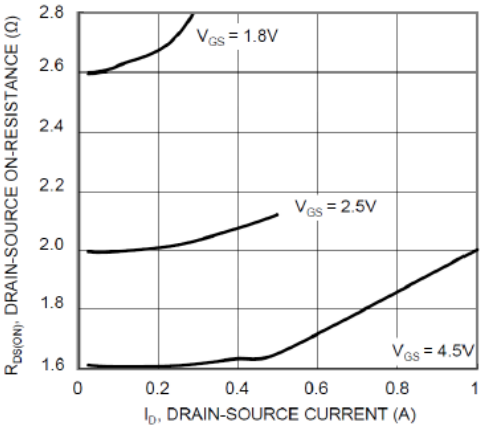

Fig. 3 Typical On-Resistance vs. I_D and V_{GS}

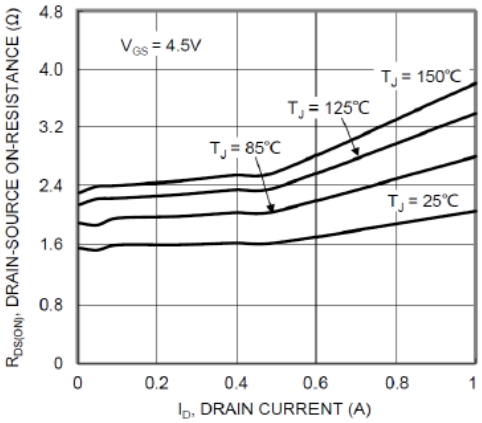

Fig. 4 Typical Drain-Source On-Resistance vs. I_D and T_J

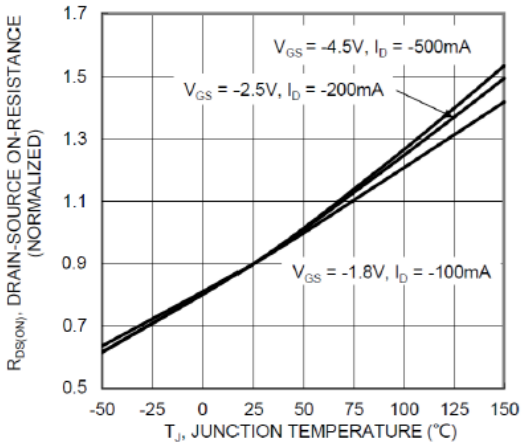

Fig. 5 On-Resistance Variation with T_J

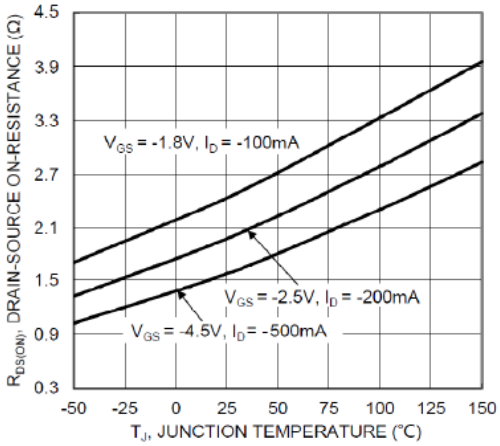

Fig. 6 On-Resistance Variation with T_J

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Typical Performance Characteristics(continue)

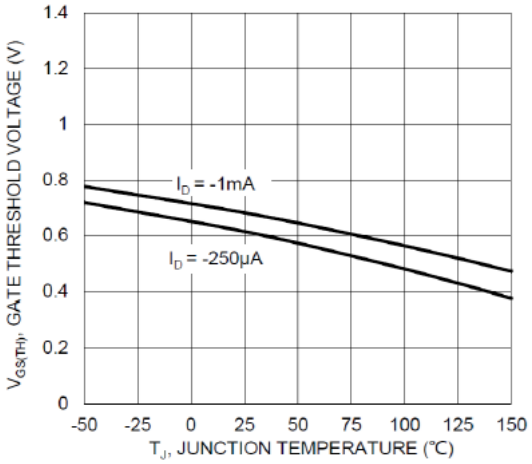

Fig. 7 Gate Threshold Variation vs. T_A

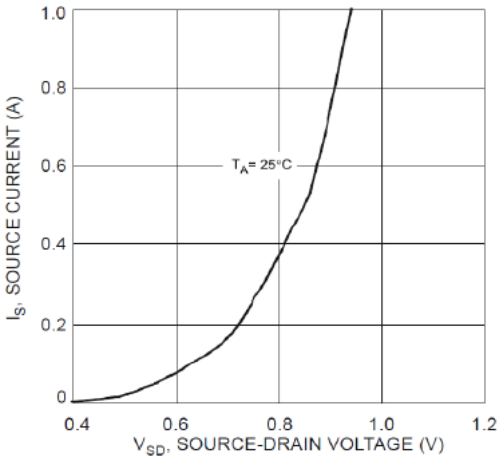

Fig. 8 Diode Forward Voltage vs. Current

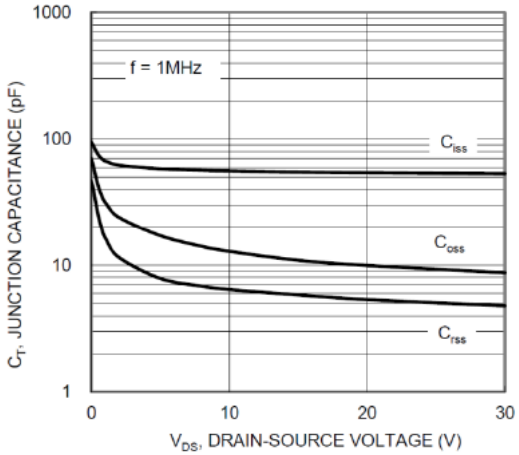

Fig. 9 Typical Capacitance

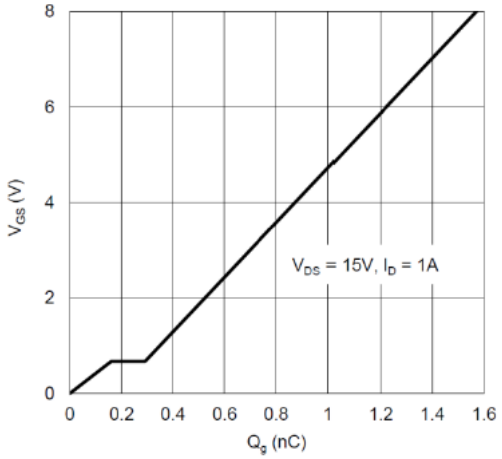

Fig. 10 Gate Charge

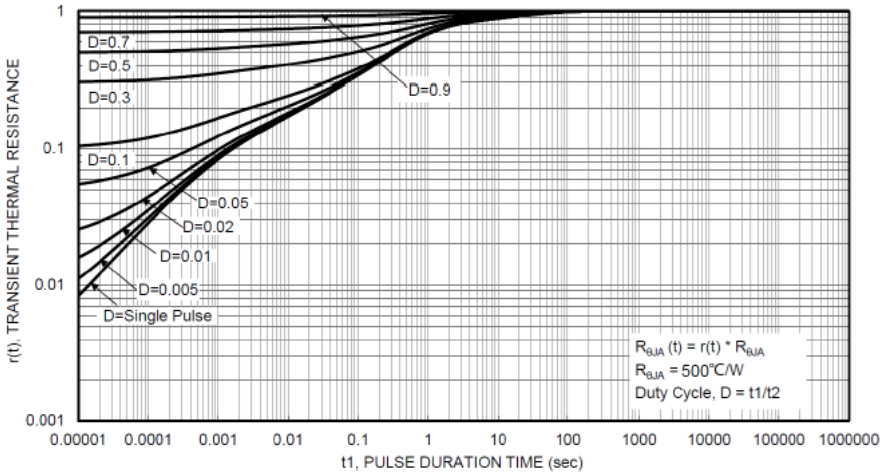

Fig. 11 Transient Thermal Response

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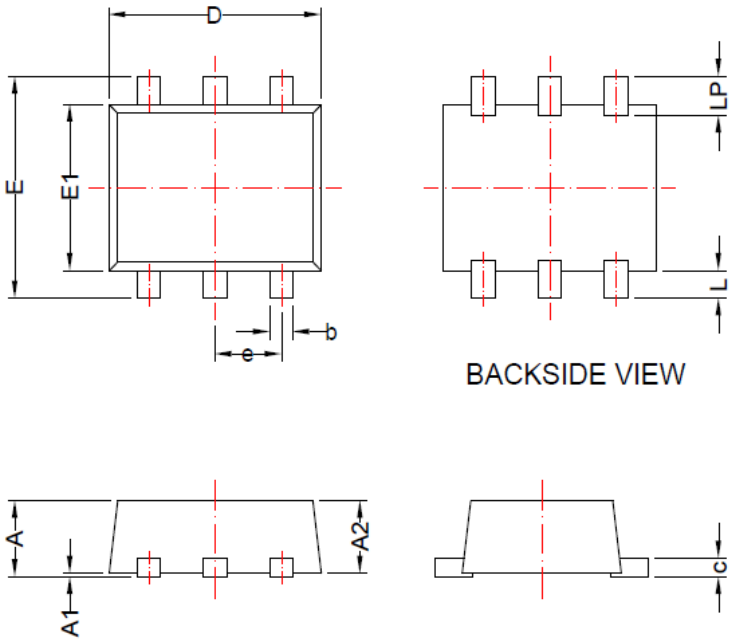
Package Dimension:

SOT-563



DIMENSION D AND E1 DO NOT INCLUDE MOLD FLASH,TIE BAR BURRS，GATE BURRS，AND INTERLEAD FLASH,NOT INCLUDING ANY MISMATCH BETWEEN THE TOP AND BOTTOM OF THE PLASTIC BODY

Dimensions				
Symbol	**Millimeters**		**Inches**	
	Min	Max	Min	Max
A	0.45	0.65	0.018	0.026
A1	0.00	0.10	0.000	0.004
A2	0.45	0.60	0.018	0.024
b	0.15	0.30	0.006	0.012
c	0.07	0.20	0.003	0.008
D	1.50	1.70	0.059	0.067
E	1.50	1.70	0.059	0.067
E1	1.10	1.30	0.043	0.051
e	0.50 BSC		0.020 BSC	
L	0.10	0.30	0.004	0.012
LP	0.16	0.40	0.006	0.016

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