

LMPP3925EX7F 30V P-Channel Enhancement Mode MOSFET
Features

- -30V/-0.27A, $R_{DS(ON)}=2500m\Omega@V_{GS}=-4.5V$
 $R_{DS(ON)}=2900m\Omega@V_{GS}=-2.5V$
 $R_{DS(ON)}=5000m\Omega@V_{GS}=-1.8V$
- 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.

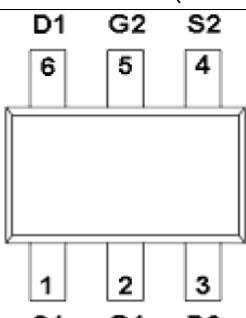
These devices are particularly suited for low

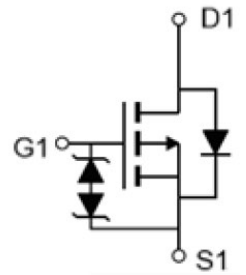
voltage power management, such as smart phone and notebook computer, and low in-line power loss are needed in commercial industrial surface mount applications.

Applications

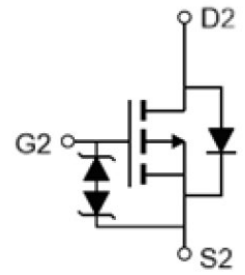
- Drivers: Relays, Solenoids, Lamps, Hammers
- Battery Operated Systems
- Power Supply Converter Circuits
- Load/Power Switching Smart Phones, Pagers

Pin Configuration

LMPP3925EX7F (SOT-563)		
		
PIN	Description	
1	Source1	
2	Gate1	
3	Drain2	
4	Source2	
5	Gate2	
6	Drain1	



p-channel



p-channel

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
<u>5</u>	XM

Absolute Maximum Ratings

(T_C=25°C 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°C)	T _A =25°C	A
		T _A =70°C	
I _{DM}	Pulsed Drain Current	-1.1	A
P _D	Power Dissipation	T _A =25°C	W
		T _A =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 ambient	500	°C/W

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

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	-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	I _D =-1A		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		

Typical Performance Characteristics

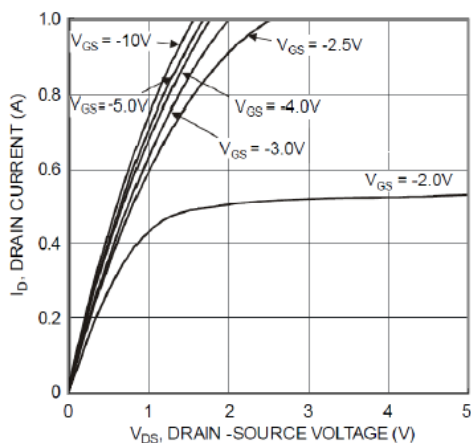


Fig. 1 Typical Output Characteristics

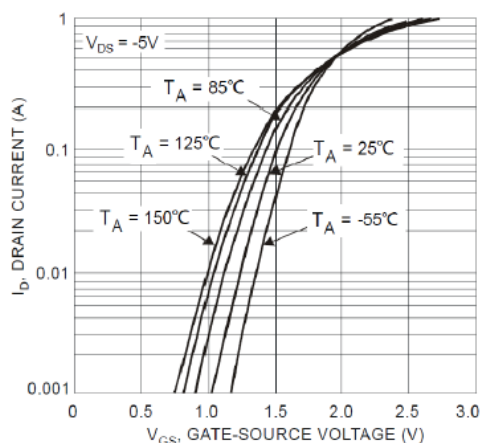


Fig. 2 Typical Transfer Characteristics

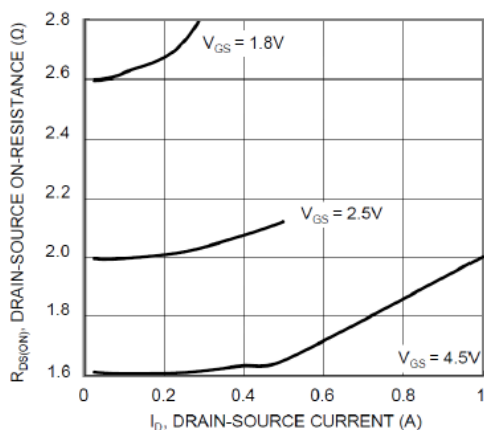


Fig. 3 Typical On-Resistance vs. I_D and V_{GS}

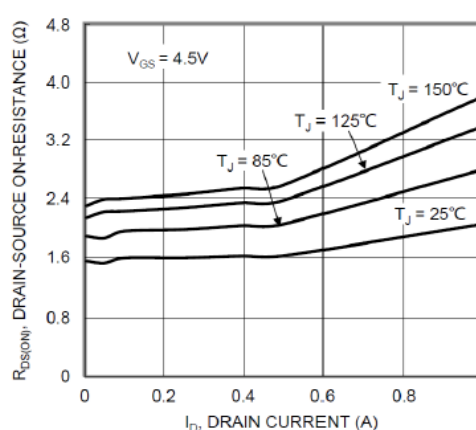


Fig. 4 Typical Drain-Source On-Resistance vs. I_D and T_J

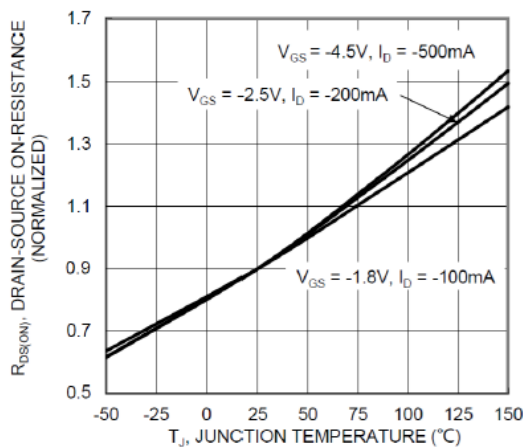


Fig. 5 On-Resistance Variation with T_J

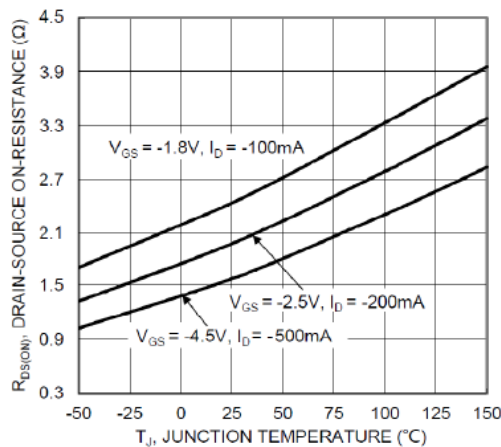
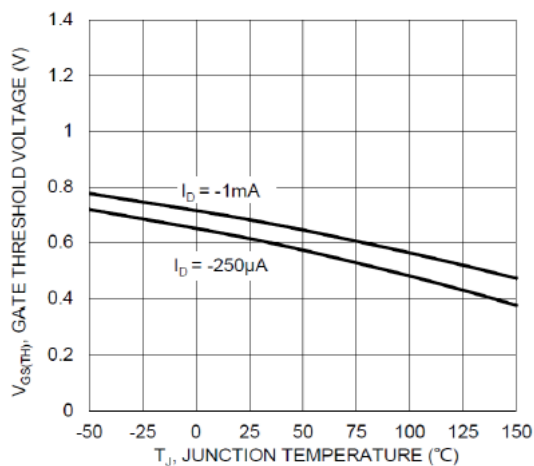
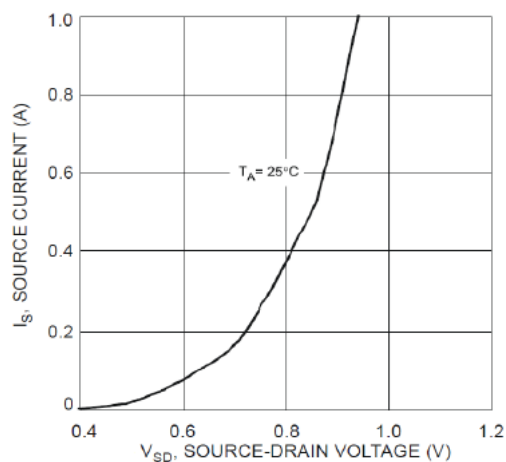
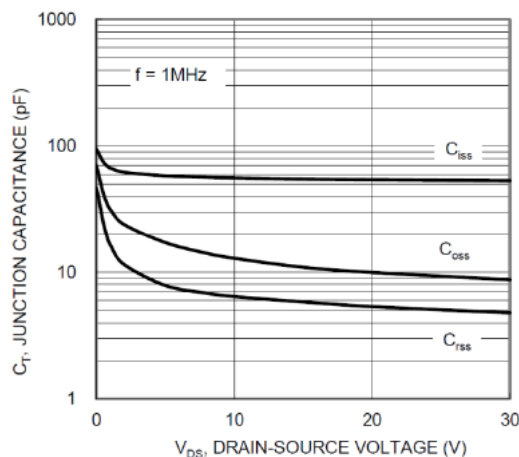
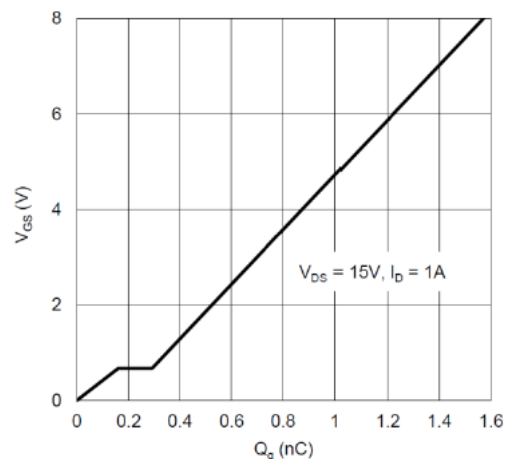
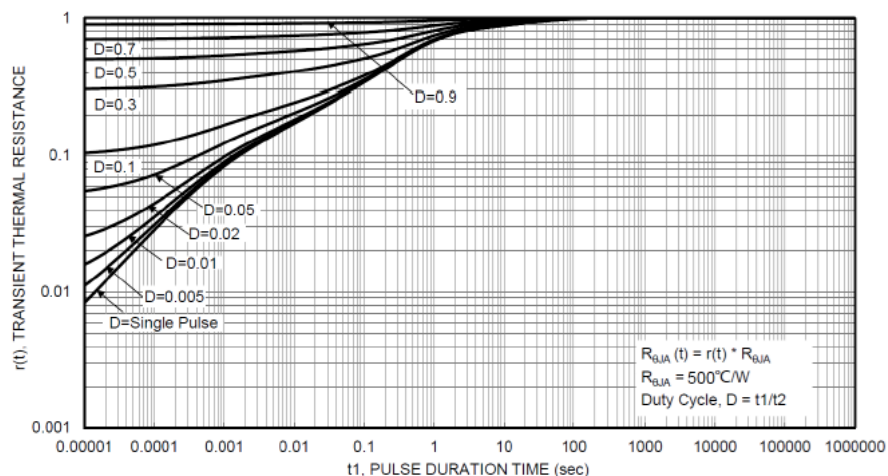
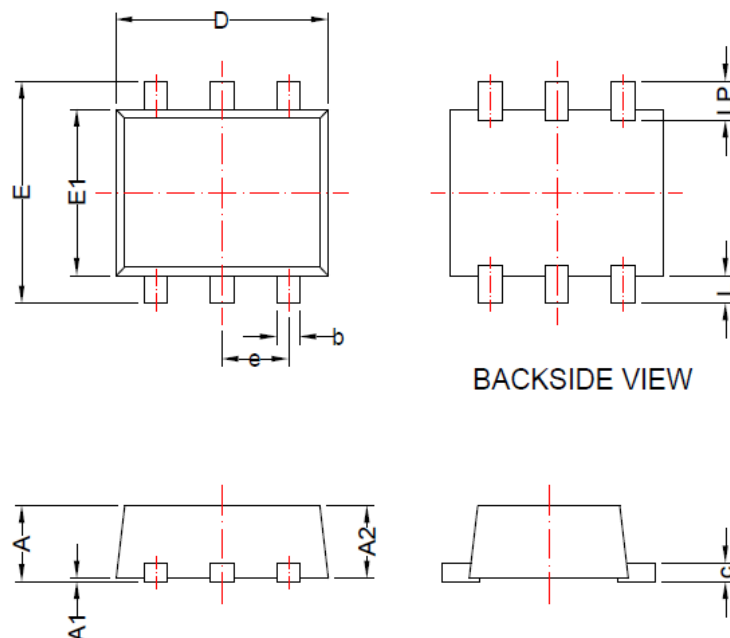


Fig. 6 On-Resistance Variation with T_J

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

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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