

GSM3925EX7F

30V P-Channel Enhancement Mode MOSFET

Product Description

GSM3925EX7F, 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.

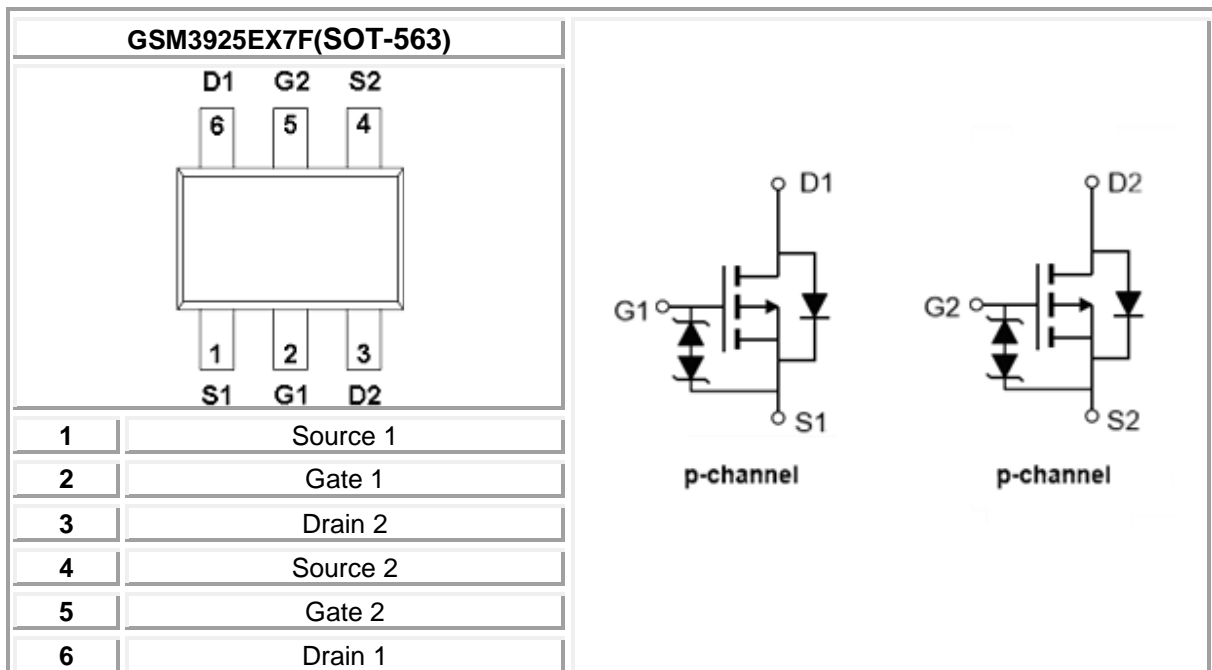
Features

- -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

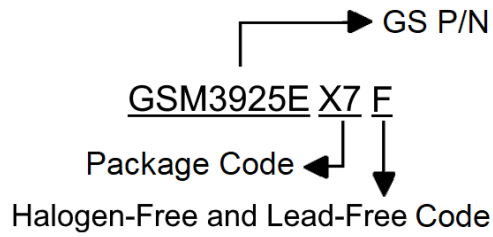
Applications

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

Packages & Pin Assignments

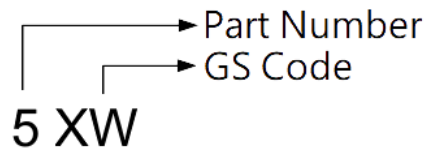


Ordering Information



Part Number	Package	Quantity Reel
GSM3925EX7F	SOT-563	3000 PCS

Marking Information



Absolute Maximum Ratings

(T_A=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	-0.27
		T _A =70°C	-0.22
I _{DM}	Pulsed Drain Current	-1.1	A
P _D	Power Dissipation	T _A =25°C	0.25
		T _A =70°C	0.16
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

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

Electrical Characteristics

(T_A=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	-30			V
V _{GS(th)}	Gate Threshold Voltage	V _{DS} =V _{GS} , I _D =-250uA	-0.4		-1.0	
I _{GSS}	Gate Leakage Current	V _{DS} =0V, V _{GS} =±8V			±10	uA
I _{DSS}	Zero Gate Voltage Drain Current	V _{DS} =-24V, V _{GS} =0V			-1	uA
R _{DS(on)}	Drain-Source On-Resistance	V _{GS} =-4.5V, I _D =-0.5A		1.6	2.5	Ω
		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
V _{SD}	Diode Forward Voltage	I _S =-0.5A, V _{GS} =0V			-1.3	V
Dynamic						
Q _g	Total Gate Charge	V _{DS} =-15V, V _{GS} =-4.5V, I _D =-1A		1.0		nC
Q _{gs}	Gate-Source Charge	V _{DS} =-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=1MHz		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, I _D =-0.2A V _{GEN} =-4.5V, R _G =10Ω		3.8		ns
t _r				11		
t _{d(off)}	Turn-Off Time			45		
t _f				20		

Typical Performance Characteristics

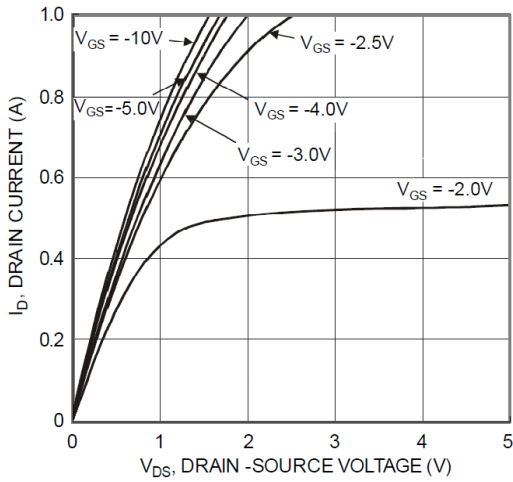


Fig. 1 Typical Output Characteristics

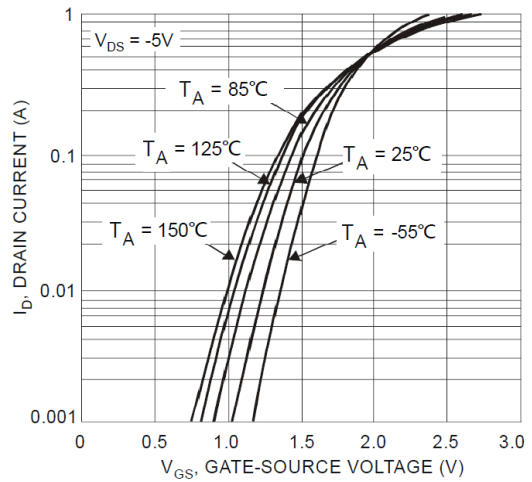


Fig. 2 Typical Transfer Characteristics

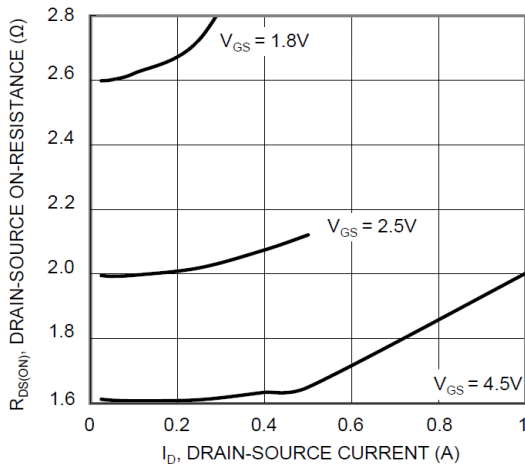


Fig. 3 Typical On-Resistance vs. I_D and V_{GS}

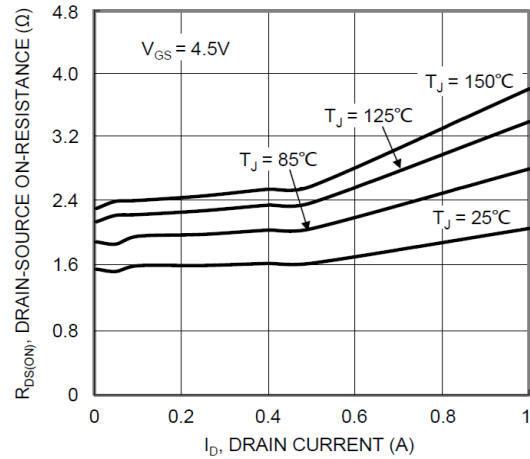


Fig. 4 Typical Drain-Source On-Resistance vs. I_D and T_J

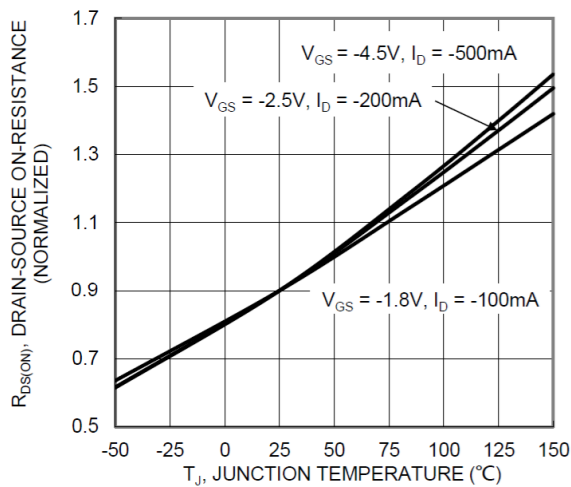


Fig. 5 On-Resistance Variation with T_J

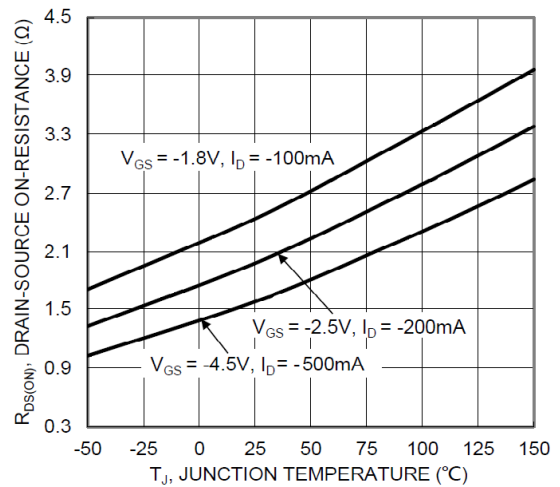


Fig. 6 On-Resistance Variation with T_J

Typical Performance Characteristics (continue)

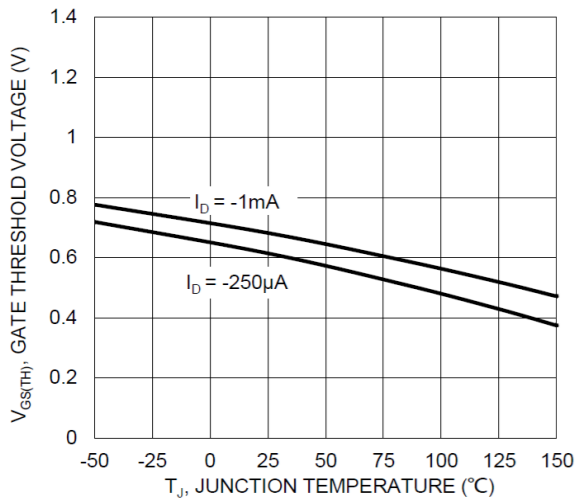


Fig. 7 Gate Threshold Variation vs. T_A

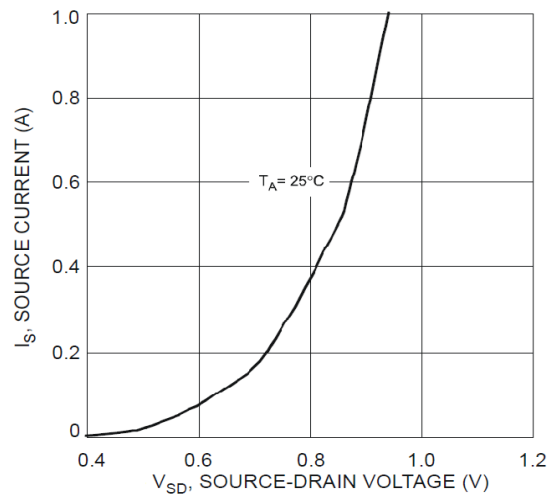


Fig. 8 Diode Forward Voltage vs. Current

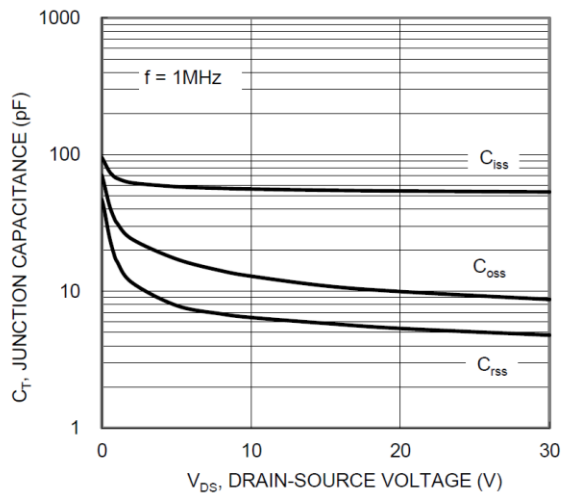


Fig. 9 Typical Capacitance

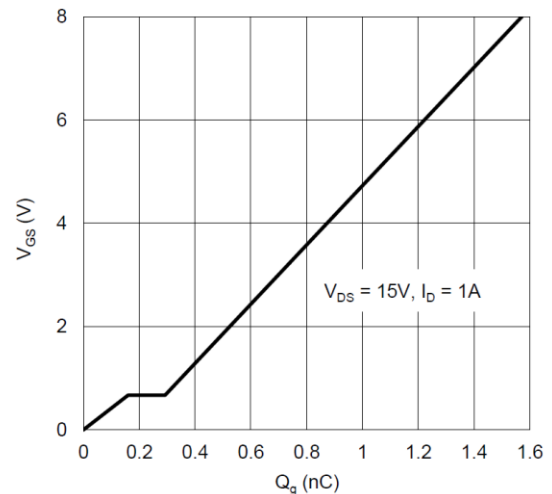


Fig. 10 Gate Charge

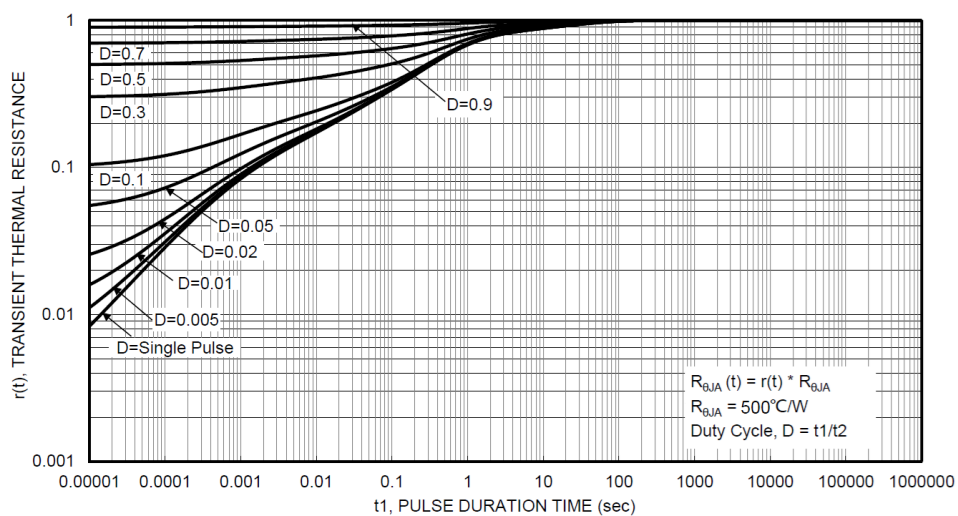
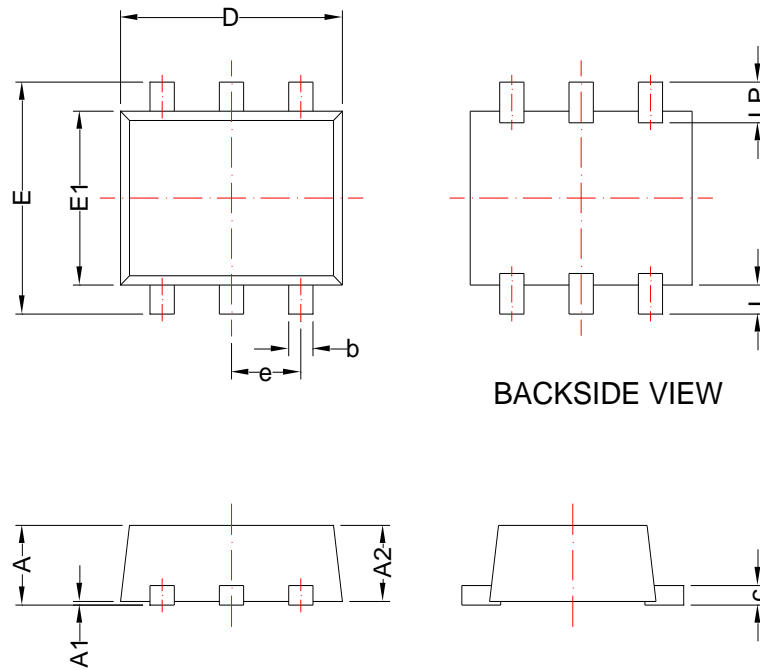


Fig. 11 Transient Thermal Response

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	0.4	0.006	0.016





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