

GSM2730EX7F

20V Dual N-Channel MOSFETs

Product Description

These Dual N-Channel enhancement mode power field effect transistors are using trench DMOS technology. This advanced technology has been especially tailored to minimize on-state resistance, provide superior switching performance, and withstand high energy pulse in the avalanche and commutation mode.

These devices are well suited for high efficiency fast switching applications.

Features

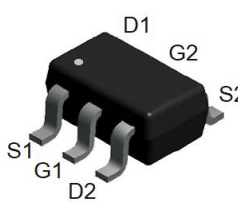
- 20V, 700mA, $R_{DS(ON)}=400m\Omega@V_{GS}=4.5V$
- Fast switching
- Suit for 1.5V Gate Drive Applications
- Green Device Available
- SOT-563 package design

Applications

- Notebook
- Load Switch
- Networking
- Hand-Held Instruments

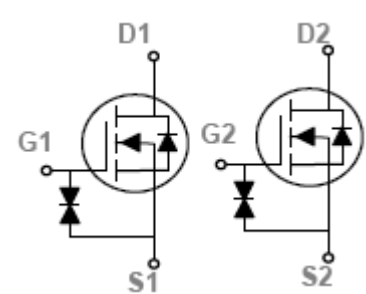
Packages & Pin Assignments

GSM2730EX7F (SOT-563)

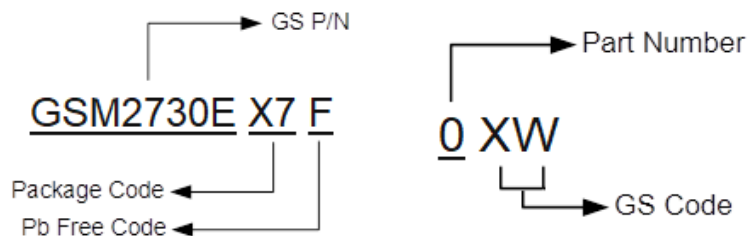


Top Views

Pin	Description	Pin	Description
1	Source 1	4	Source 2
2	Gate 1	5	Gate 2
3	Drain 2	6	Drain 1



Ordering & Marking Information



Part Number	Package	Part Marking	Quantity
GSM2730EX7F	SOT-563	0XW	3000pcs

Absolute Maximum Ratings

T_C=25°C Unless otherwise noted

Symbol	Parameter	Typical	Unit
V _{DS}	Drain-Source Voltage	20	V
V _{GS}	Gate-Source Voltage	±10	V
I _D	Continuous Drain Current	T _A =25°C	700
		T _A =100°C	450
I _{DM}	Pulsed Drain Current	3	A
P _D	Power Dissipation (T _A =25°C)	320	mW
T _J	Operating Junction Temperature Range	-55 to +150	°C
T _{STG}	Storage Temperature Range	-55 to +150	°C
R _{θJA}	Thermal Resistance-Junction to Ambient	400	°C/W

Electrical Characteristics

T_J=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	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} =±10V			±10	uA
I _{DSS}	Drain Current Leakage Current	V _{DS} =20V, V _{GS} =0V			1	uA
I _S	Continuous Source Current	V _G =V _D =0V, Force Current			0.7	A
I _{SM}	Pulsed Source Current				1.4	
R _{DS(on)}	Drain-Source On-Resistance	V _{GS} =4.5V, I _D =0.5A		220	300	mΩ
		V _{GS} =2.5V, I _D =0.4A		280	450	
		V _{GS} =1.8V, I _D =0.2A		390	800	
		V _{GS} =1.5V, I _D =0.1A		540	1200	
V _{SD}	Diode Forward Voltage	V _{GS} =0V, I _S =0.5A		0.85	1	V
Dynamic						
Q _g	Total Gate Charge	V _{DS} =10V, V _{GS} =4.5V, I _D =0.25A		0.73		nC
Q _{gs}	Gate-Source Charge			0.93		
Q _{gd}	Gate-Drain Charge			0.12		
C _{iss}	Input Capacitance	V _{DS} =16V, V _{GS} =0V, F=1MHz		60.7		pF
C _{oss}	Output Capacitance			9.7		
C _{rss}	Reverse Transfer Capacitance			5.4		
t _{d(on)}	Turn-On Delay Time	V _{DD} =10V, I _D =0.2A, V _{GS} =4.5V, R _G =10Ω		5.1		ns
t _r	Rise Time			7.4		
t _{d(off)}	Turn-Off Delay Time			26.7		
t _f	Fall Time			12.3		

Typical Performance Characteristics

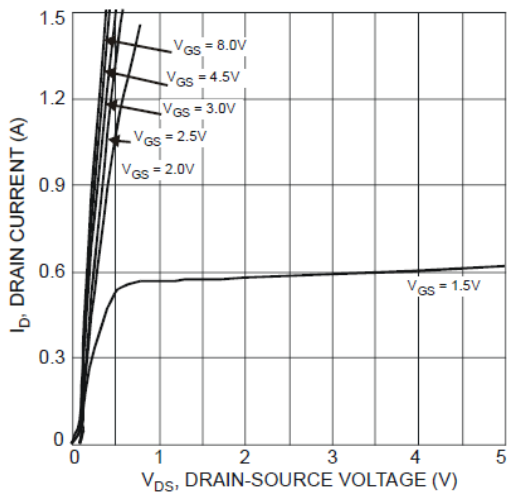


Fig. 1 Typical Output Characteristics

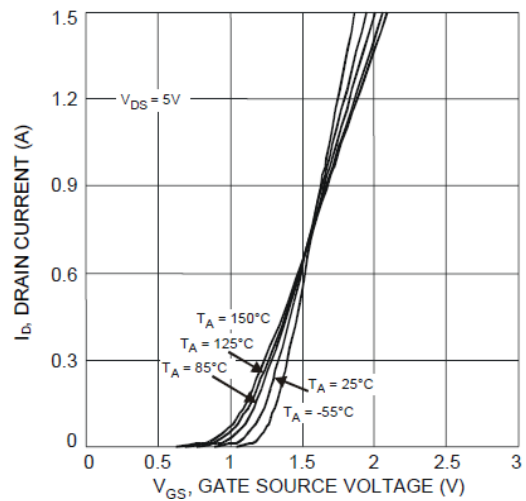


Fig. 2 Typical Transfer Characteristics

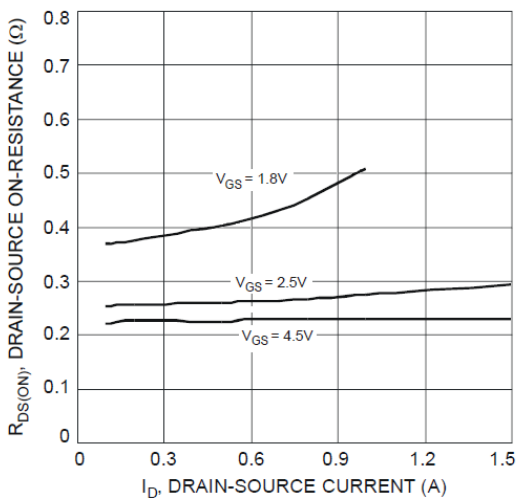


Fig. 3 Typical On-Resistance vs. I_D and V_{GS}

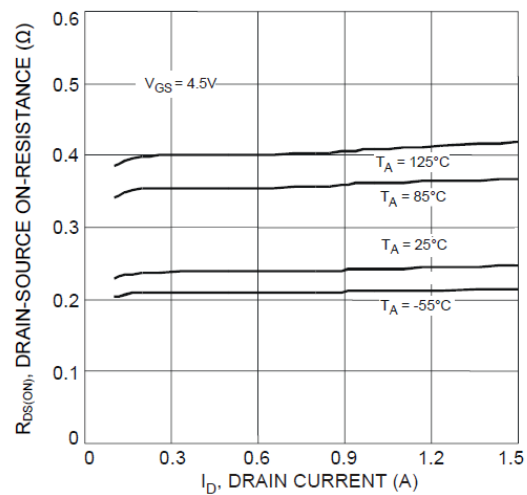


Fig. 4 Typical Drain-Source On-Resistance vs. I_D and T_J

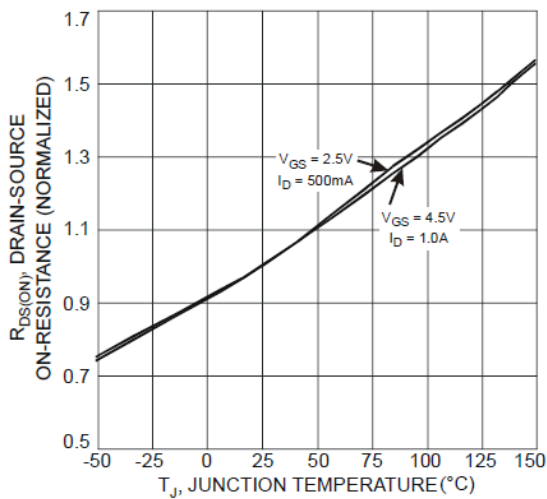


Fig. 5 On-Resistance Variation with T_J

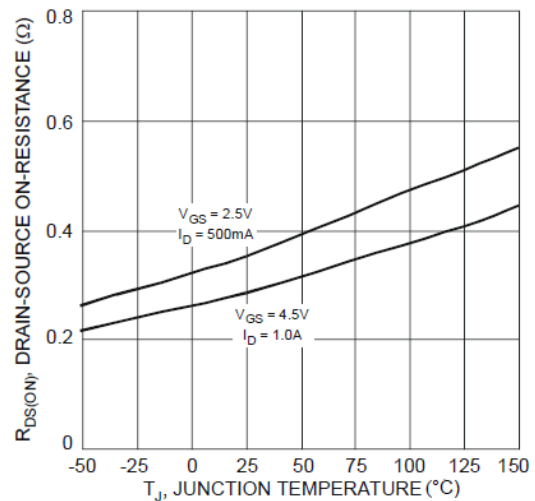


Fig. 6 On-Resistance Variation with T_J

Typical Performance Characteristics (Continue)

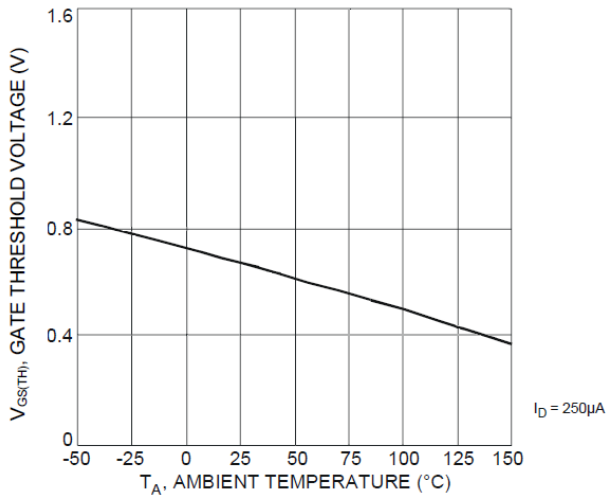


Fig. 7 Gate Threshold Variation vs. T_A

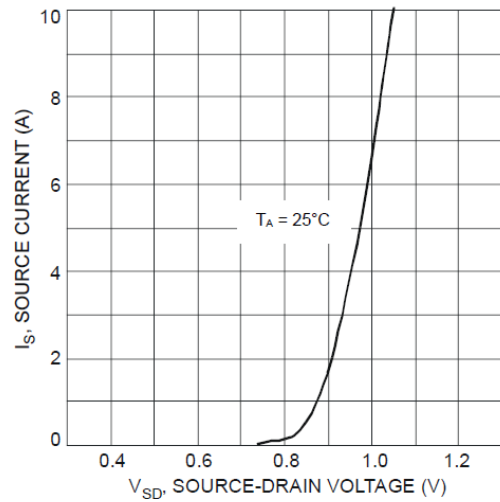


Fig. 8 Diode Forward Voltage vs. Current

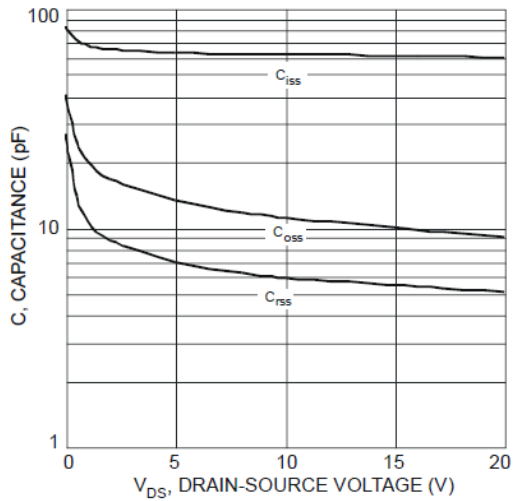


Fig. 9 Typical Capacitance

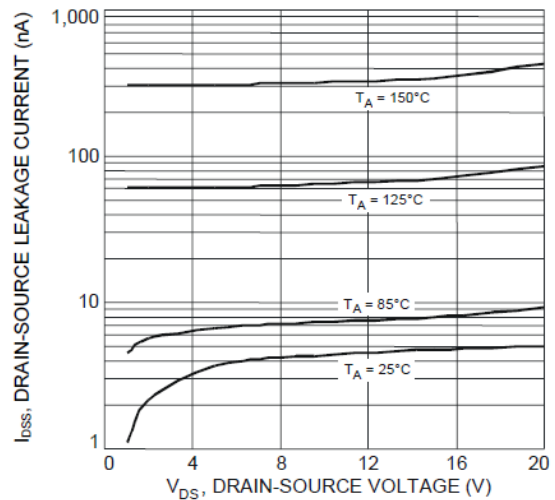


Fig. 10 Typical Drain-Source Leakage Current vs. Drain-Source Voltage

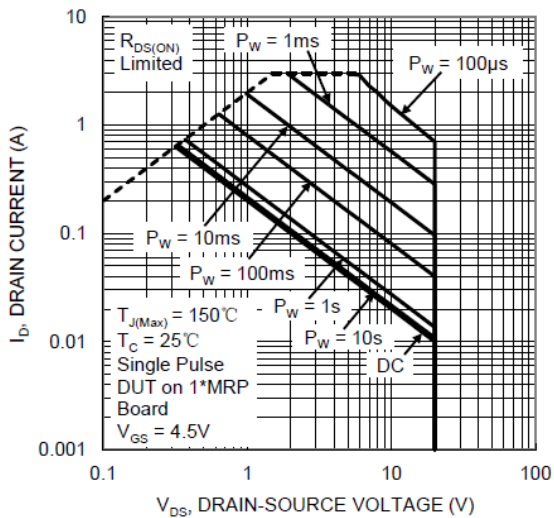
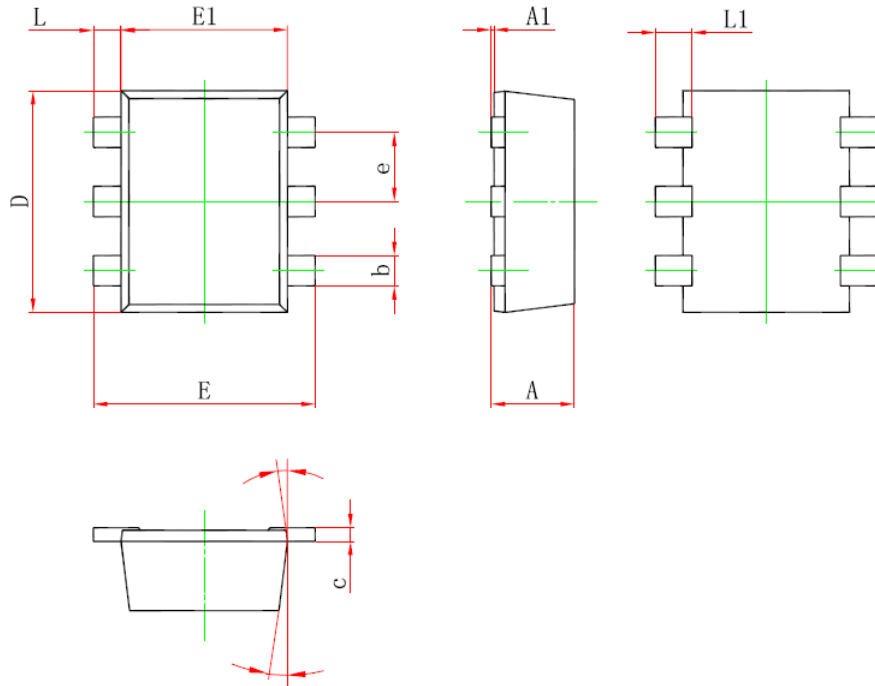


Fig. 11 Safe Operation Area

Package Dimension

SOT-563









Dimensions				
Symbol	Millimeters		Inches	
	Min	Max	Min	Max
A	0.525	0.600	0.021	0.024
A1	0.000	0.050	0.000	0.002
e	0.500(BSC)		0.020(BSC)	
c	0.090	0.160	0.004	0.006
D	1.500	1.700	0.059	0.067
b	0.170	0.270	0.007	0.011
E	1.500	1.700	0.059	0.067
E1	1.100	1.300	0.043	0.051
L	0.100	0.300	0.004	0.012
L1	0.200	0.400	0.008	0.016

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