

GSM2730EX6F

20V N-Channel Enhancement Mode MOSFET

Product Description

GSM2730EX6F, N-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 other battery powered circuits, and low in-line power loss are needed in commercial industrial surface mount applications.

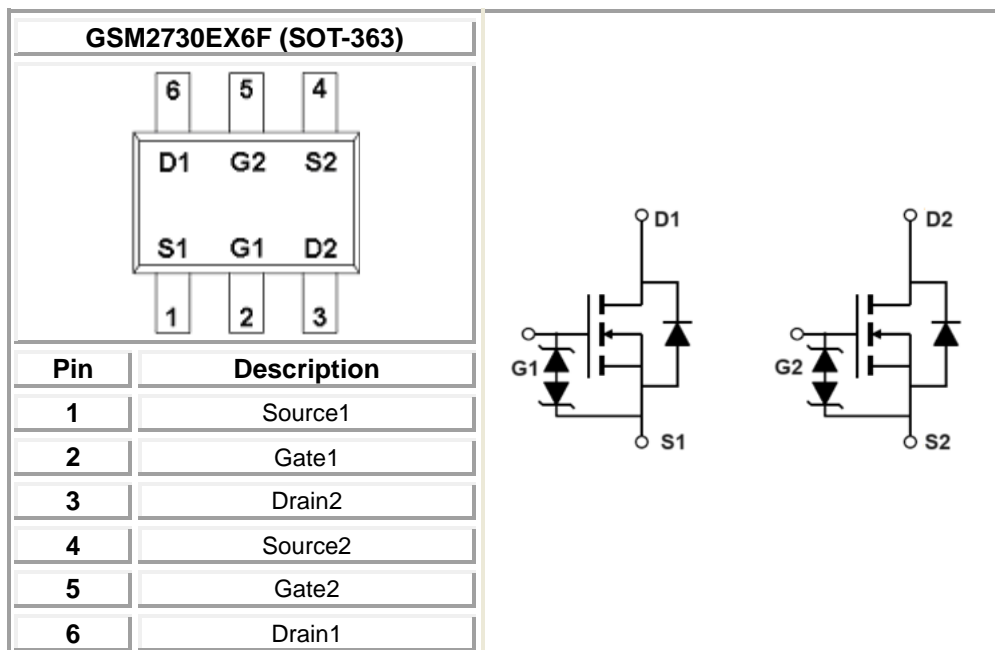
Features

- 20V/0.5A, $R_{DS(ON)}=300m\Omega@V_{GS}=4.5V$
- 20V/0.4A, $R_{DS(ON)}=450m\Omega@V_{GS}=2.5V$
- 20V/0.2A, $R_{DS(ON)}=800m\Omega@V_{GS}=1.8V$
- Low Offset (Error) Voltage
- Low-Voltage Operation
- High-Speed Circuits
- ESD Protected
- SOT-363 package design

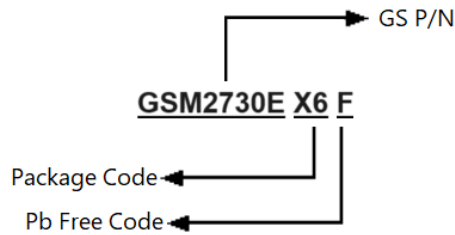
Applications

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

Packages & Pin Assignments

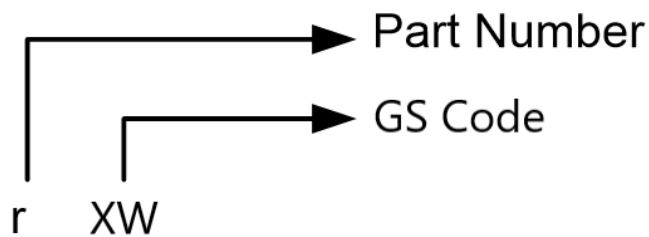


Ordering Information



Part Number	Package	Quantity Reel
GSM2730EX6F	SOT-363	3000 PCS

Marking Information



Absolute Maximum Ratings

(T_A=25°C unless otherwise noted)

Symbol	Parameter	Typical	Unit
V _{DSS}	Drain-Source Voltage	20	V
V _{GSS}	Gate -Source Voltage	±10	V
I _D	Continuous Drain Current(T _J =150°C)	T _A =25°C	0.79
		T _A =70°C	0.63
I _{DM}	Pulsed Drain Current	1.8	A
P _D	Power Dissipation	T _A =25°C	0.3
		T _A =70°C	0.2
T _J	Operating Junction Temperature	-55/150	°C
T _{STG}	Storage Temperature Range	-55/150	°C

Electrical Characteristics

($T_A=25^\circ\text{C}$ unless otherwise noted)

Symbol	Parameter	Conditions	Min	Typ	Max	Unit
Static						
$V_{(BR)DSS}$	Drain-Source Breakdown Voltage	$V_{GS}=0V, I_D=250\mu A$	20			V
$V_{GS(th)}$	Gate Threshold Voltage	$V_{DS}=V_{GS}, I_D=250\mu A$	0.3		1.0	
I_{GSS}	Gate Leakage Current	$V_{DS}=0V, V_{GS}=\pm 10V$			± 10	μA
I_{DSS}	Zero Gate Voltage Drain Current	$V_{DS}=16V, V_{GS}=0V$			1	μA
		$V_{DS}=16V, V_{GS}=0V, T_J=85^\circ C$			30	
$R_{DS(on)}$	Drain-Source On-Resistance	$V_{GS}=4.5V, I_D=0.5A$		215	300	m Ω
		$V_{GS}=2.5V, I_D=0.4A$		270	450	
		$V_{GS}=1.8V, I_D=0.2A$		365	800	
g_{FS}	Forward Transconductance	$V_{DS}=10V, I_D=1.0A$		1		S
V_{SD}	Diode Forward Voltage	$I_S=1.0A, V_{GS}=0V$		0.8	1.2	V
Dynamic						
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		
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		
$t_{d(on)}$	Turn-On Time	$V_{DD}=10V, R_L=47\Omega, I_D=0.2A, V_{GEN}=4.5V, R_G=10\Omega$		5.1		ns
t_r				7.4		
$t_{d(off)}$	Turn-Off Time			26.7		
t_f				12.3		

Typical Performance Characteristics

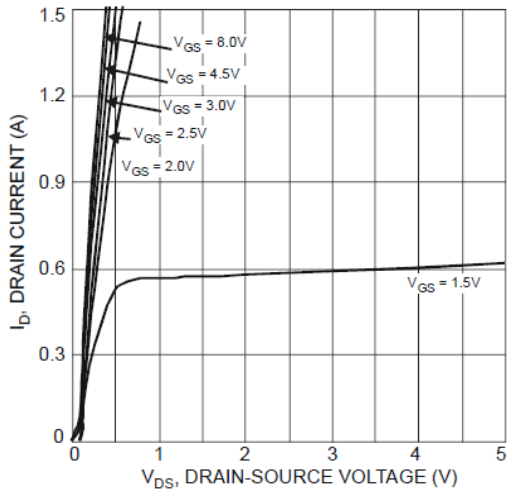


Fig. 1 Typical Output Characteristics

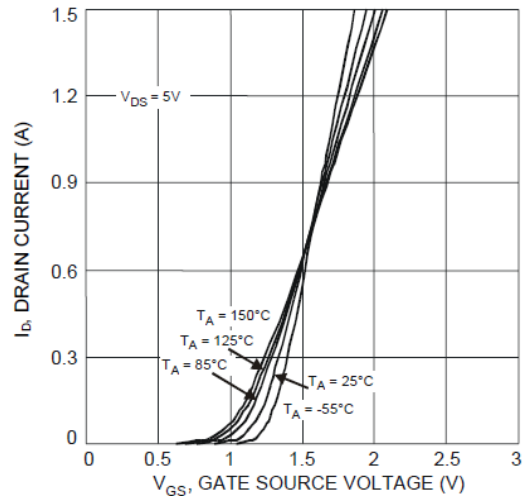


Fig. 2 Typical Transfer Characteristics

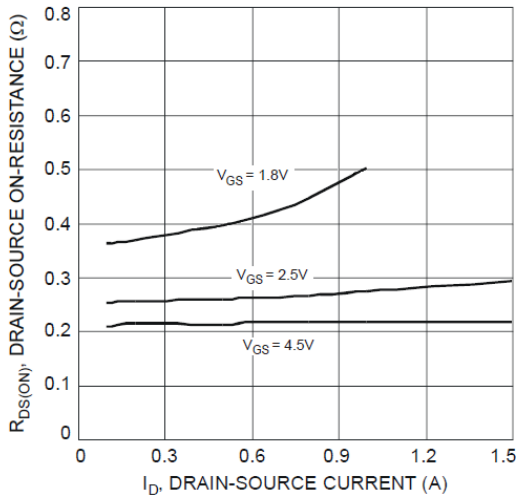


Fig. 3 Typical On-Resistance vs. I_D and V_{GS}

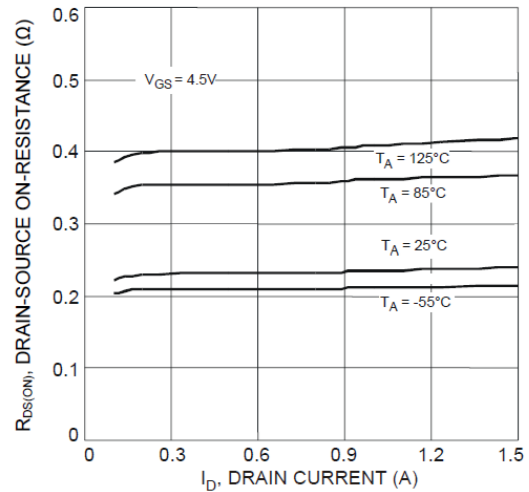


Fig. 4 Typical Drain-Source On-Resistance vs. I_D and T_J

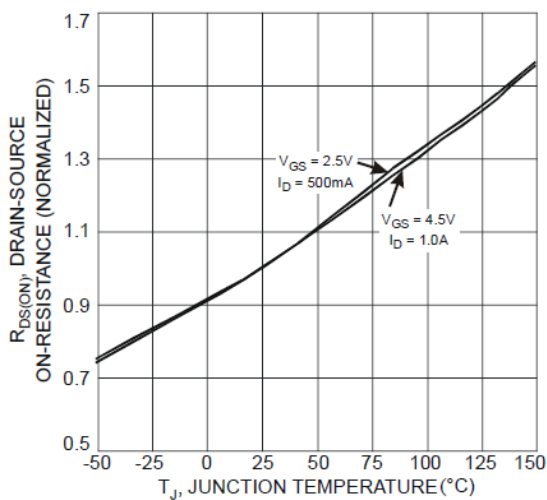


Fig. 5 On-Resistance Variation with T_J

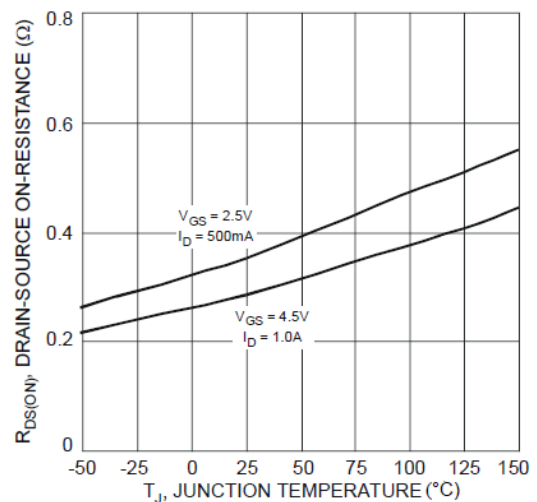


Fig. 6 On-Resistance Variation with T_J

Typical Performance Characteristics (Continue)

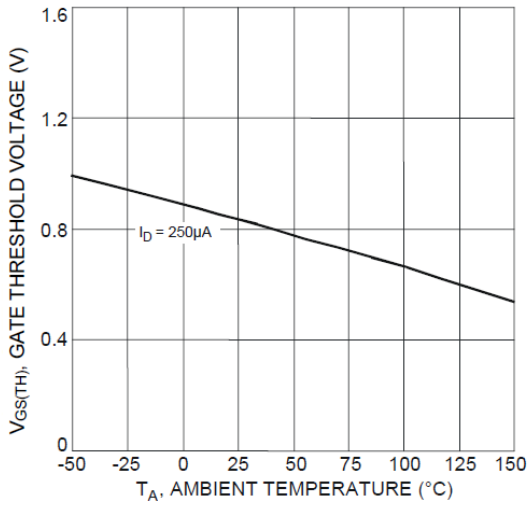


Fig. 7 Gate Threshold Variation vs. T_A

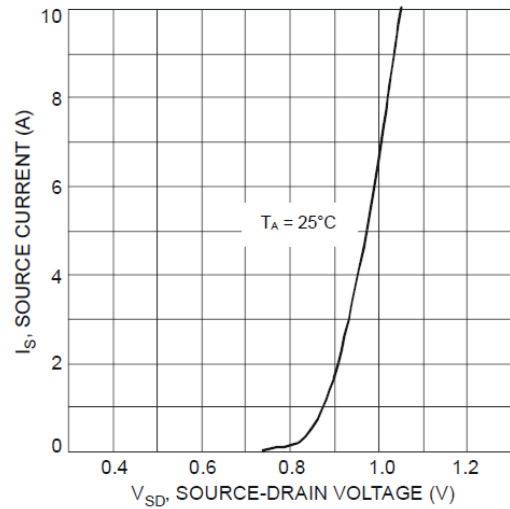


Fig. 8 Diode Forward Voltage vs. Current

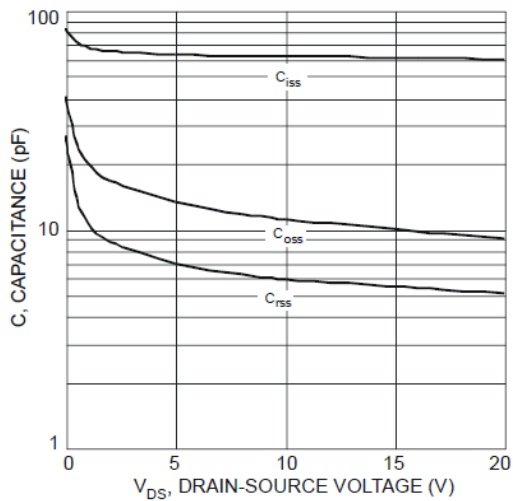


Fig. 9 Typical Capacitance

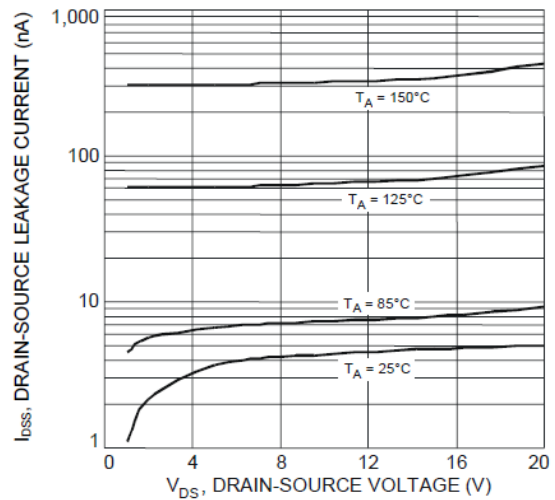


Fig. 10 Typical Drain-Source Leakage Current vs. Drain-Source Voltage

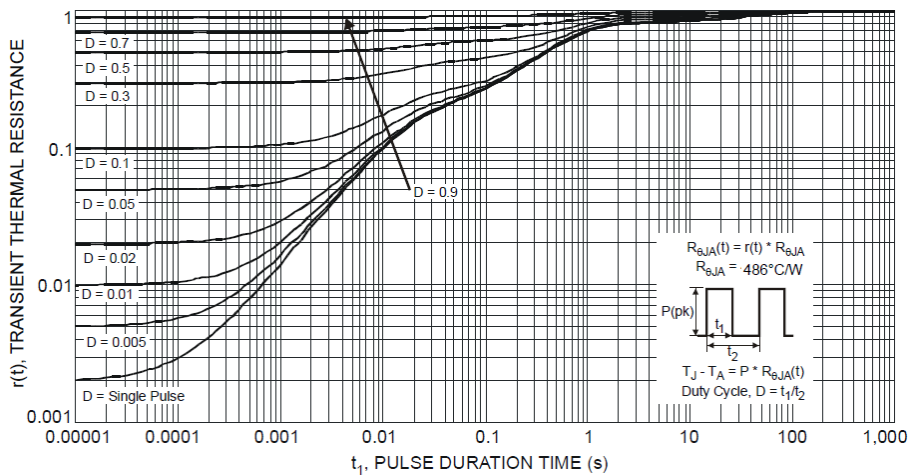
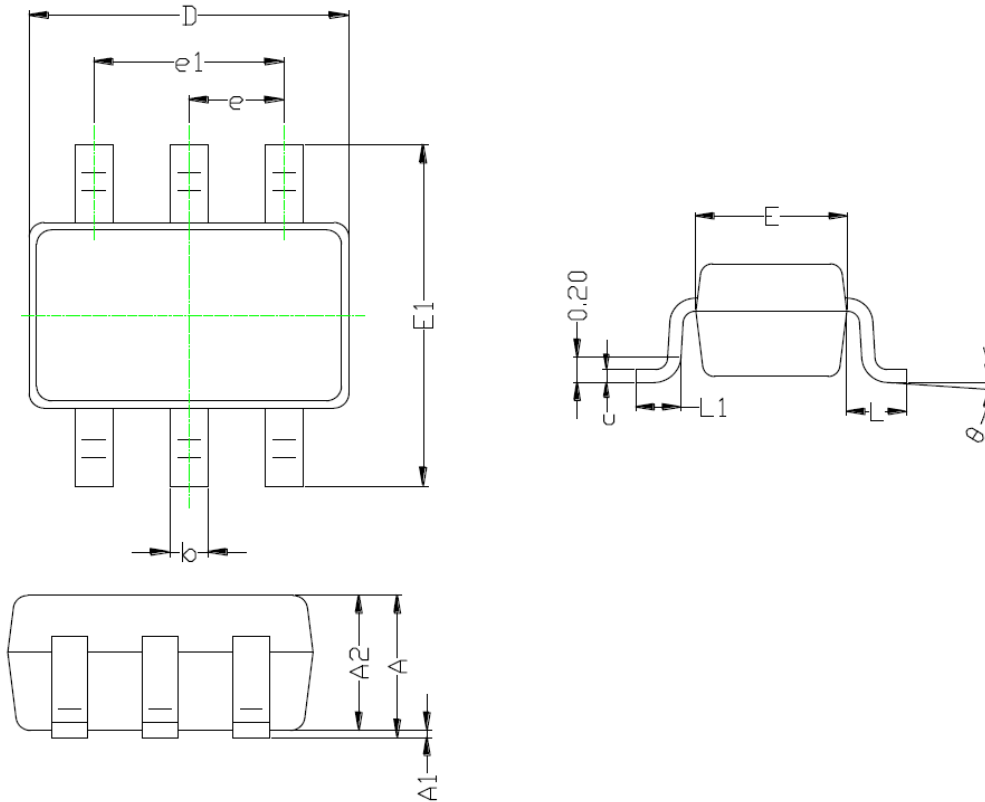


Fig. 11 Transient Thermal Response

Package Dimension

SOT-363









Dimensions				
SYMBOL	Millimeters		Inches	
	MIN	MAX	MIN	MAX
A	0.90	1.10	0.035	0.043
A1	0.00	0.10	0.000	0.004
A2	0.90	1.00	0.035	0.039
b	0.15	0.35	0.006	0.014
c	0.08	0.15	0.003	0.006
D	2.00	2.20	0.079	0.087
E	1.15	1.35	0.045	0.053
E1	2.15	2.45	0.085	0.096
e	0.650 (TYP)		0.026 (TYP)	
e1	1.20	1.40	0.047	0.055
L	0.525 (REF)		0.021 (REF)	
L1	0.26	0.46	0.010	0.018
Q	0°	8°	0°	8°

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