GSM3760EX6F

30V Dual N-Channel MOSFETs

Product Description

GSM3760E, 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 low in-line power loss are needed in commercial industrial surface mount applications.

Features

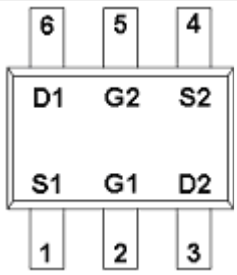
- Low Gate Charge
- ESD Protected
- SOT-363 package design

Applications

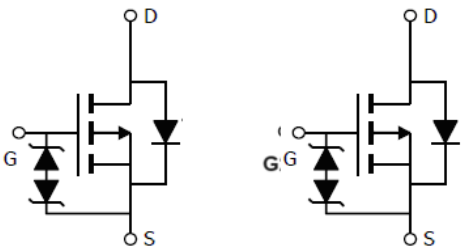
- Power Management in Note book
- Portable Equipment
- Load Switch

Packages & Pin Assignments

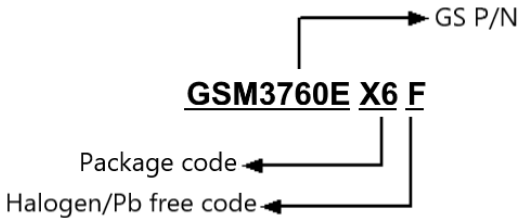
GSM3760EX6F (SOT-363)



Pin	Description
1	Source1
2	Gate1
3	Drain2
4	Source2
5	Gate2
6	Drain1

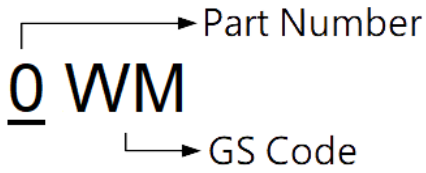


Ordering Information



Part Number	Package	Quantity Reel
GSM3760EX6F	SOT-363	3000 PCS

Marking Information



Absolute Maximum Ratings

(T_A=25ºC unless otherwise noted)

Symbol	Parameter	Typical	Unit
V_{DSS}	Drain-Source Voltage	30	V
V_{GSS}	Gate-Source Voltage	±12	V
I_D	Continuous Drain Current(T_A=25℃)[1]	0.59	A
I_{DM}	Pulsed Drain Current[3]	2.2	A
P_D	Power Dissipation	0.31	W
$R_{\theta JA}$	Thermal Resistance Junction to ambient[1]	400	ºC/W
T_J	Operating Junction Temperature Range	-55 to +150	ºC
T_{STG}	Storage Temperature Range	-55 to +150	ºC

Notes:
1. Surface mounted on a 1 inch2 FR-4 board with 2oz copper.
2. Pulse width limited by maximum junction temperature, Pulse Width≤300μs, Duty Cycle≤1%.

Electrical Characteristics

(T_A=25ºC 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	0.5		1.5	
I_{GSS}	Gate Leakage Current	V_{DS}=0V, V_{GS}=±12V			10	uA
I_{DSS}	Zero Gate Voltage Drain Current	V_{DS}=24V, V_{GS}=0V			100	nA
$R_{DS(on)}$	Drain-Source On-Resistance[3]	V_{GS}=10V, I_D=0.5A		325	600	mΩ
		V_{GS}=4.5V, I_D=0.4A		400	650	
		V_{GS}=2.5V, I_D=0.3A		610	1200	
g_{FS}	Forward Transconductance	V_{DS}=10V, I_D=0.5A		1.1		S
V_{SD}	Diode Forward Voltage	I_S=0.25A, V_{GS}=0V			1.1	V
Dynamic						
Q_g	Total Gate Charge	V_{DS}=15V, V_{GS}=10V, I_D=0.5A		1.5		nC
Q_{gs}	Gate-Source Charge			0.2		
Q_{gd}	Gate-Drain Charge			0.2		
C_{iss}	Input Capacitance	V_{DS}=15V, V_{GS}=0V f=1MHz		39		pF
C_{oss}	Output Capacitance			9		
C_{rss}	Reverse Transfer Capacitance			6		
$t_{d(on)}$	Turn-On Time	V_{DD}=15V, I_D=0.5A, V_{GS}=10V, R_G=2.5Ω		5.3		ns
t_r				16		
$t_{d(off)}$	Turn-Off Time			20		
t_f				18		

Typical Performance Characteristics

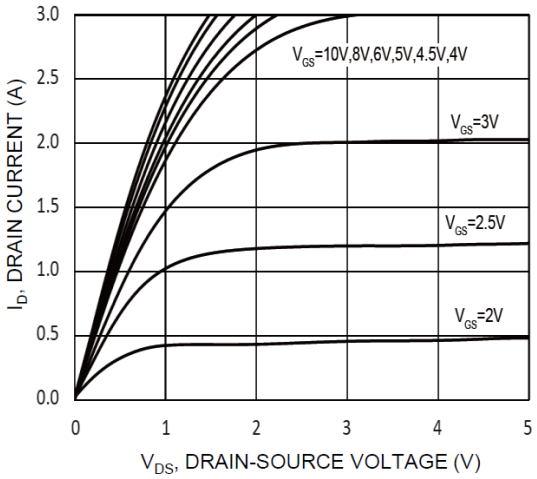


Fig. 1 Typical Output Characteristics

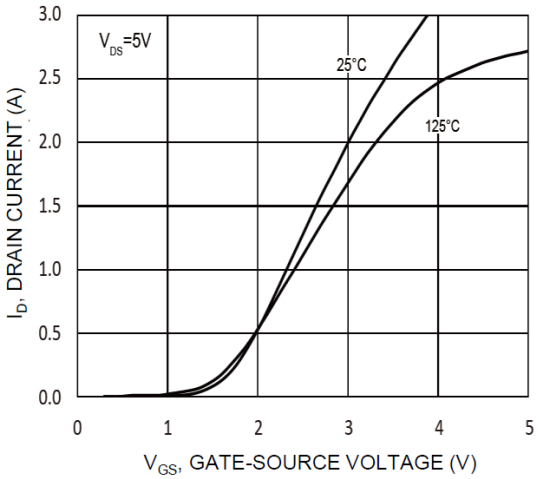


Fig. 2 Typical Transfer Characteristics

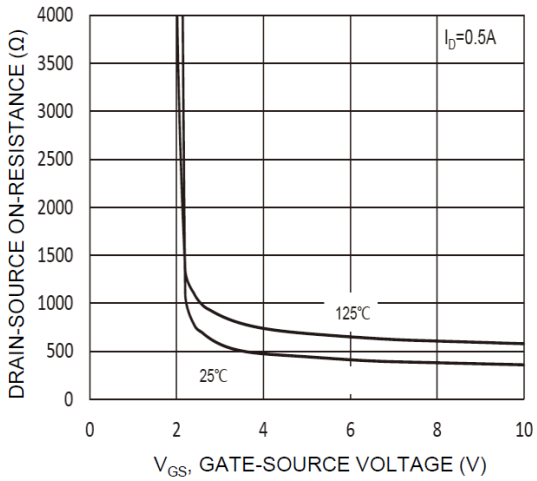


Fig. 3 Typical On-Resistance vs. V_{GS}

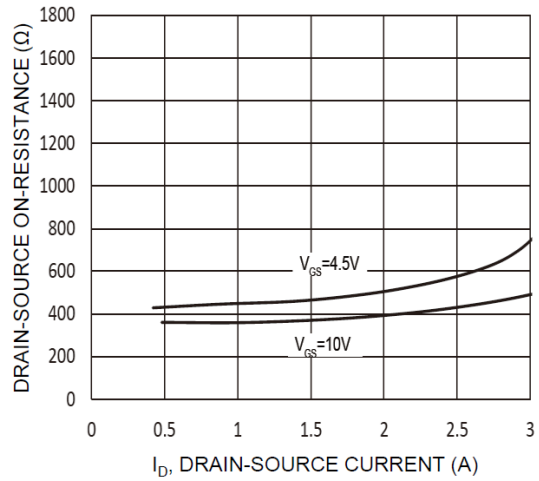


Fig. 4 Typical On-Resistance vs. I_D

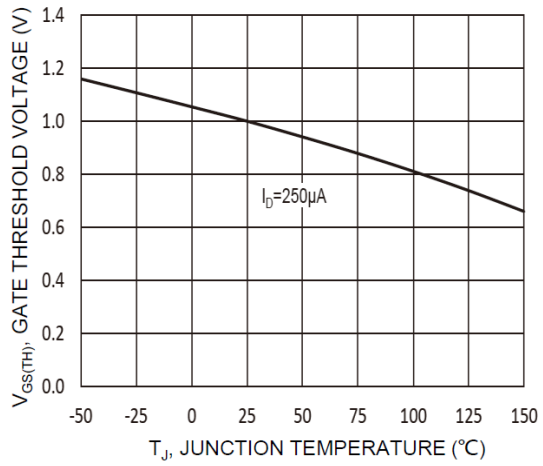


Fig. 5 Normalized Threshold Voltage

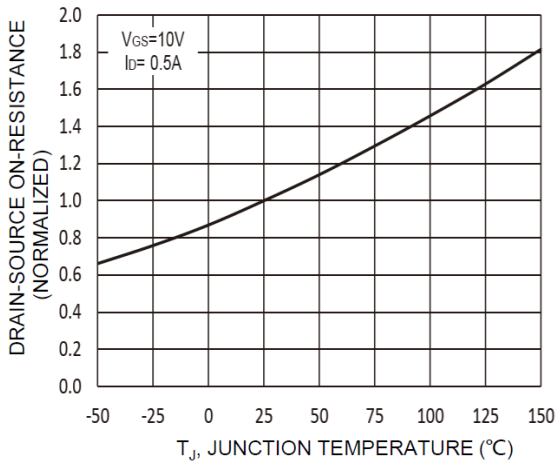


Fig 6. On-Resistance Variation with T_J

Typical Performance Characteristics (Continue)

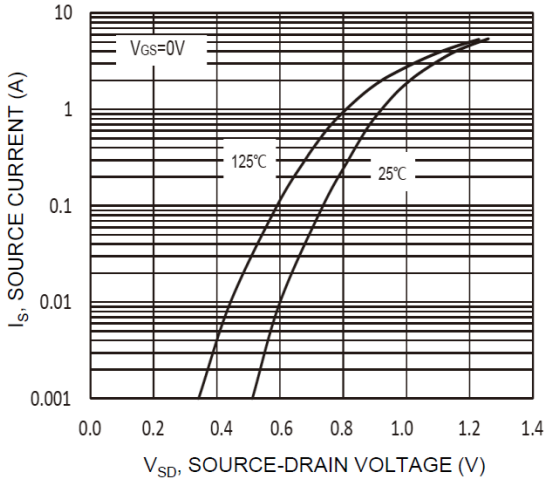


Fig. 7 Diode Forward Voltage vs. Current

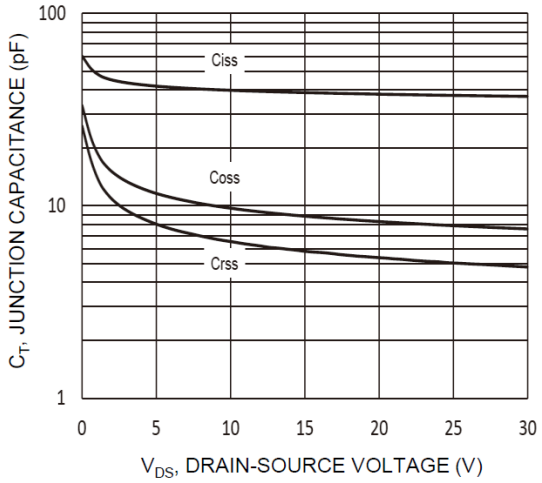


Fig. 8 Typical Capacitance

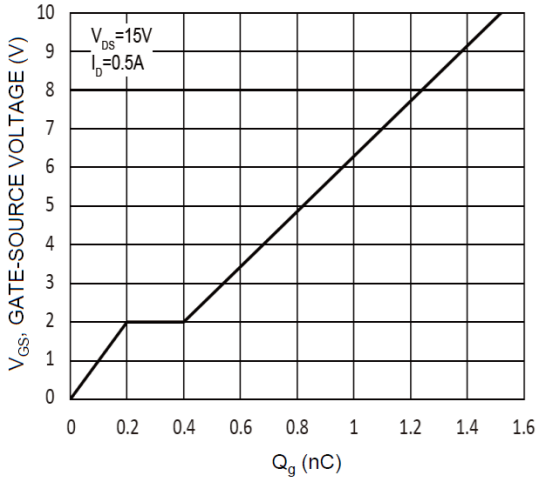


Fig. 9 Gate Charge

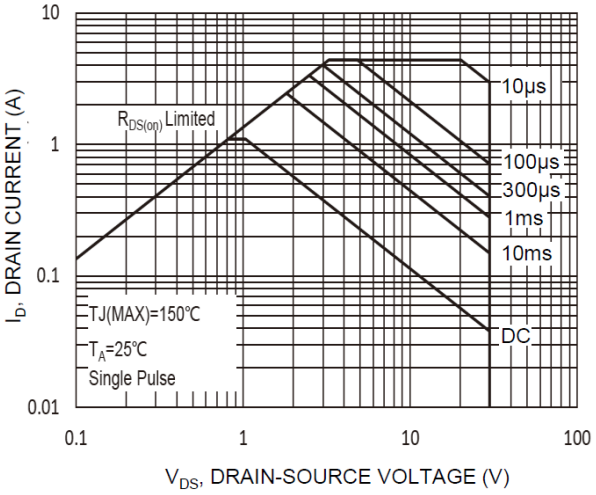


Fig. 10 Safe Operation Area

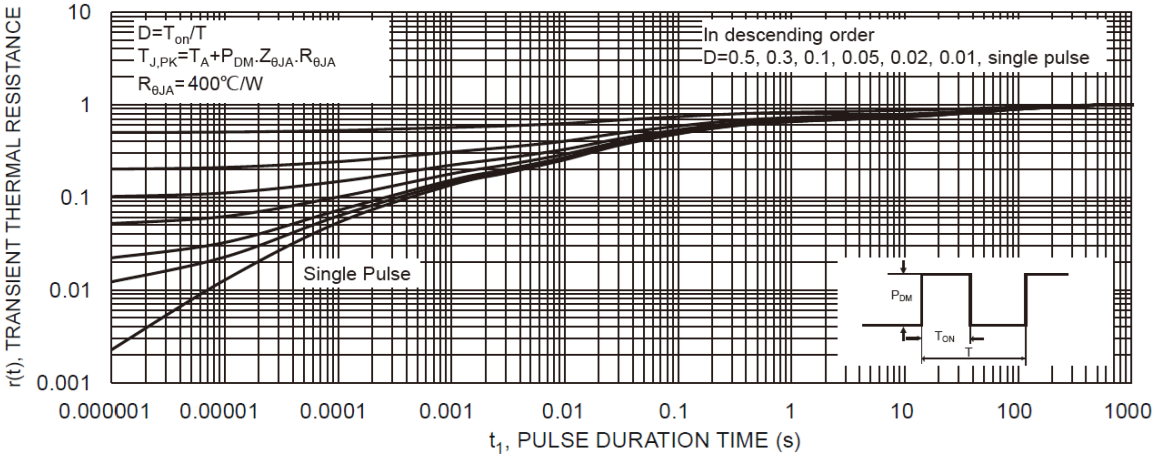
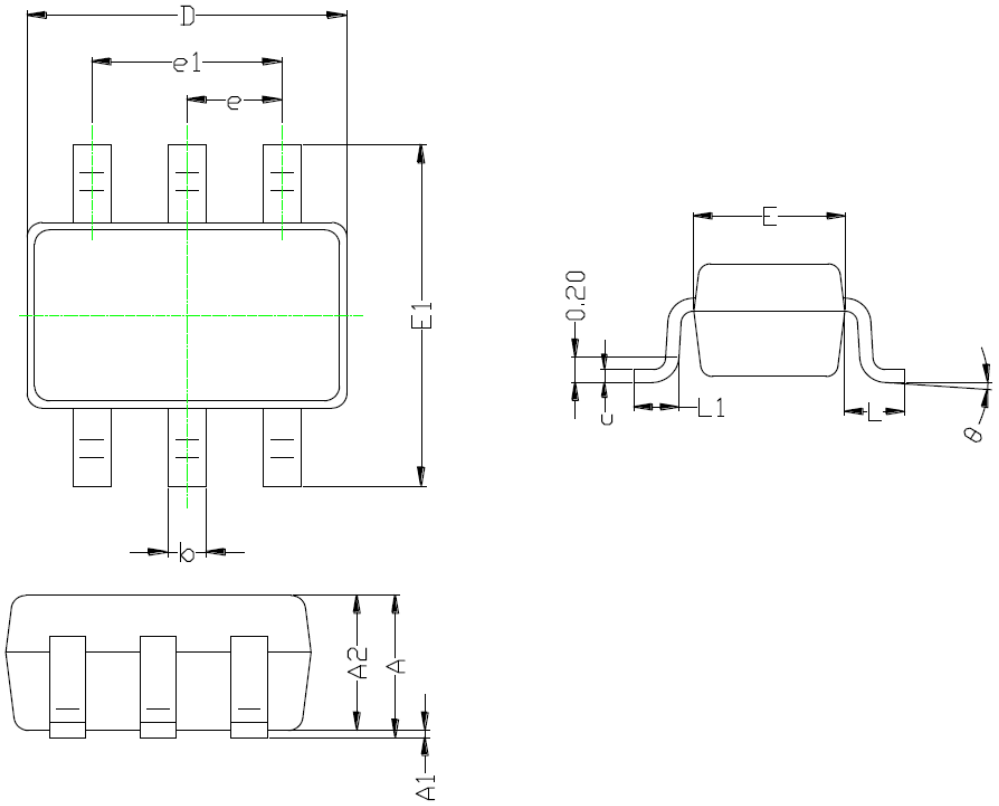


Fig. 11 Transient Thermal Response

Package Dimension

SOT-363



Dimensions				
SYMBOL	Millimeters		Inches	
	MIN	MAX	MIN	MAX
A	0.90	1.00	0.035	0.039
A1	0.00	0.10	0.000	0.004
A2	0.90	1.00	0.035	0.039
b	0.15	0.30	0.006	0.012
c	0.10	0.15	0.004	0.006
D	2.00	2.20	0.079	0.087
E	1.15	1.35	0.045	0.053
E1	2.15	2.40	0.085	0.094
e	0.650 BSC		0.026 BSC	
e1	1.20	1.40	0.047	0.055
L	0.525 BSC		0.021 BSC	
L1	0.26	0.45	0.010	0.018
θ	0°	8°	0°	8°

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CONTACT US

GS Headquarter	
	4F.,No.43-1,Lane11,Sec.6,Minquan E.Rd Neihu District Taipei City 114, Taiwan (R.O.C)
	886-2-2657-9980
	886-2-2657-3630
	sales_twn@gs-power.com

RD Division	
	824 Bolton Drive Milpitas. CA. 95035
	1-408-457-0587