

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.

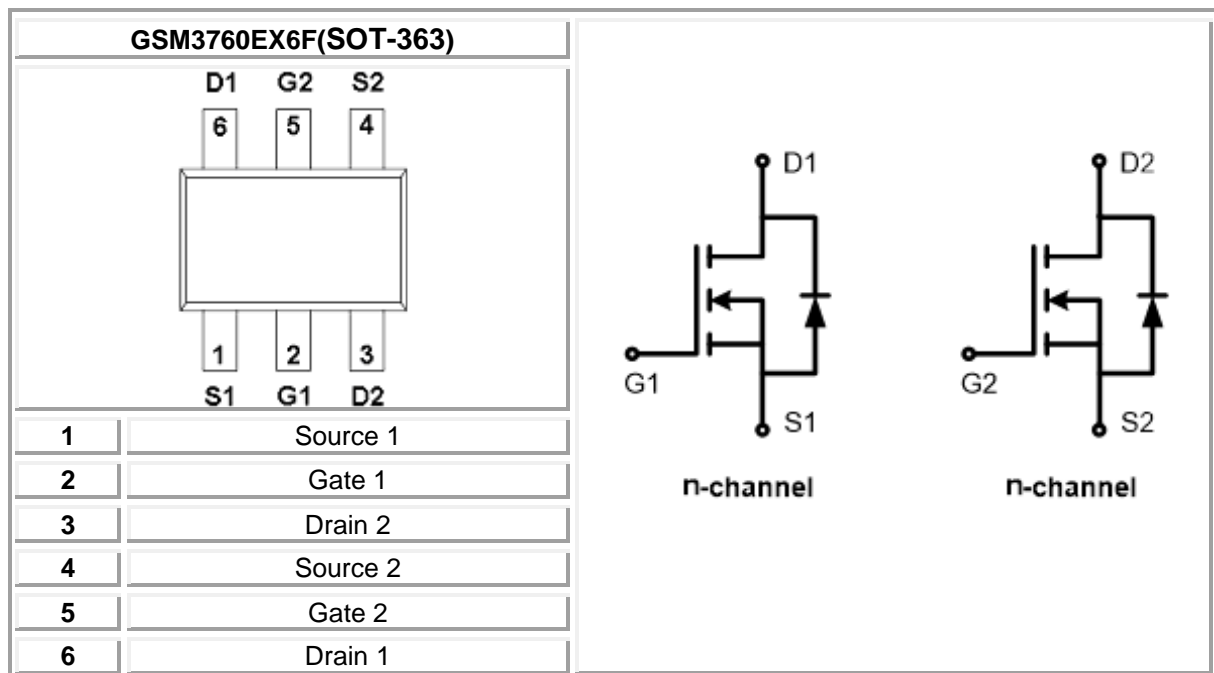
Features

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

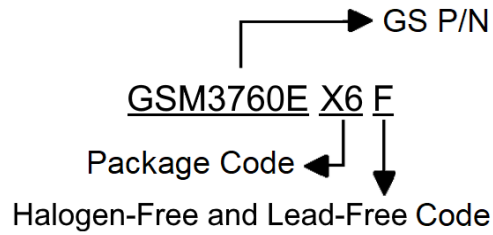
Applications

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

Packages & Pin Assignments

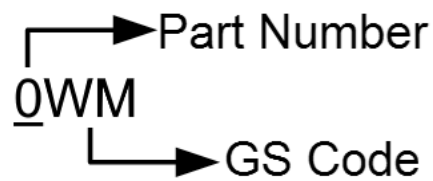


Ordering Information



Part Number	Package	Quantity Reel
GSM3760EX6F	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	30	V
V _{GSS}	Gate-Source Voltage	±12	V
I _D	Continuous Drain Current(T _A =25°C) ¹	0.59	A
I _{DM}	Pulsed Drain Current ³	2.2	A
P _D	Power Dissipation	0.31	W
R _{θJA}	Thermal Resistance Junction to ambient ¹	400	°C/W
T _J	Operating Junction Temperature Range	-55 to +150	°C
T _{STG}	Storage Temperature Range	-55 to +150	°C

Notes:

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

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	$V_{GS}=0V, I_D=250\mu A$	30			V
$V_{GS(th)}$	Gate Threshold Voltage	$V_{DS}=V_{GS}, I_D=250\mu A$	0.5		1.5	
I_{GSS}	Gate Leakage Current	$V_{DS}=0V, V_{GS}=\pm 12V$			10	μA
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	m Ω
		$V_{GS}=4.5V, I_D=0.4A$		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	$V_{DS}=15V, V_{GS}=0V, f=1\text{MHz}$		39		pF
C_{oss}	Output Capacitance			9		
C_{rss}	Reverse Transfer Capacitance			6		
$t_{d(on)}$	Turn-On Time	$V_{DD}=15V, I_D=0.5A, V_{GS}=10V, R_G=2.5\Omega$		5.3		ns
t_r				16		
$t_{d(off)}$	Turn-Off Time			20		
t_f				18		

Typical Performance Characteristics

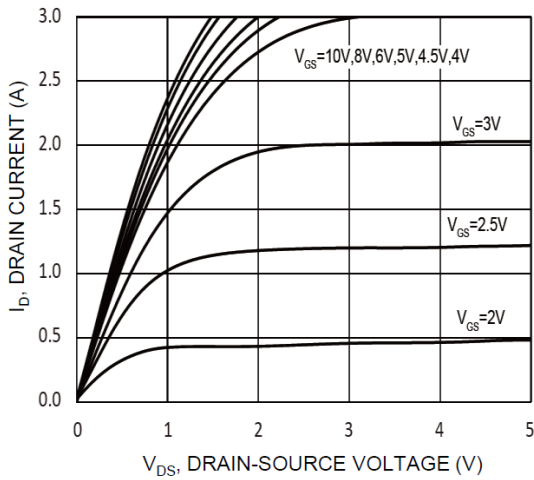


Fig. 1 Typical Output Characteristics

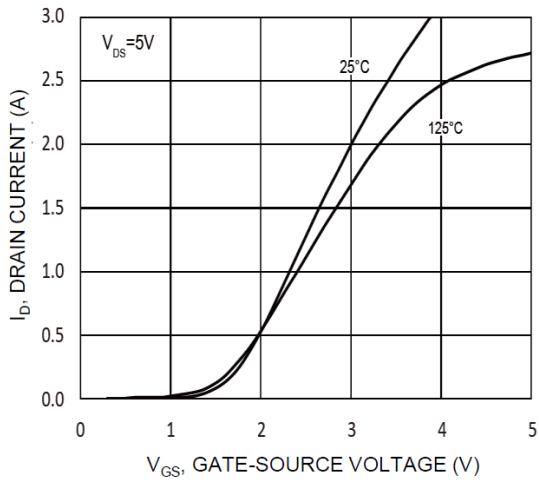


Fig. 2 Typical Transfer Characteristics

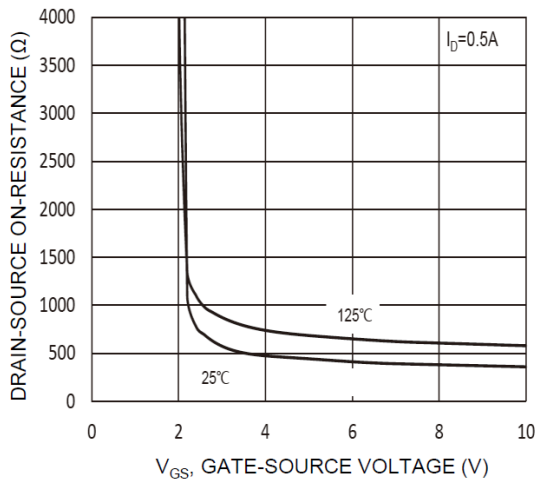


Fig. 3 Typical On-Resistance vs. V_{GS}

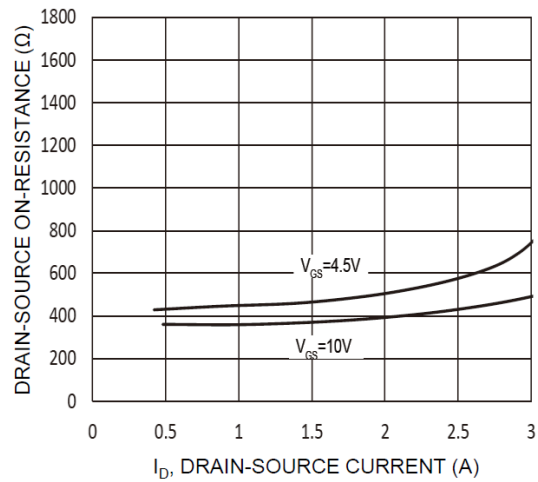


Fig. 4 Typical On-Resistance vs. I_D

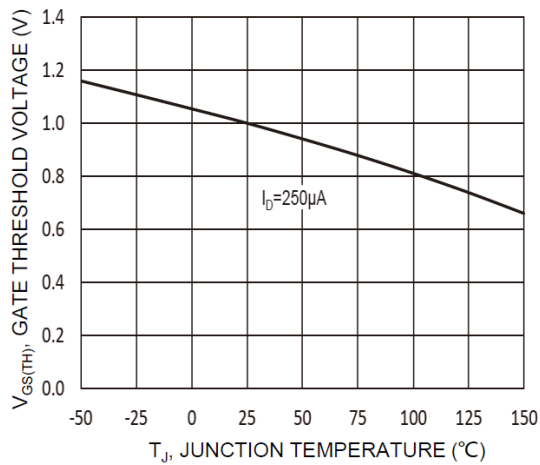


Fig. 5 Normalized Threshold Voltage

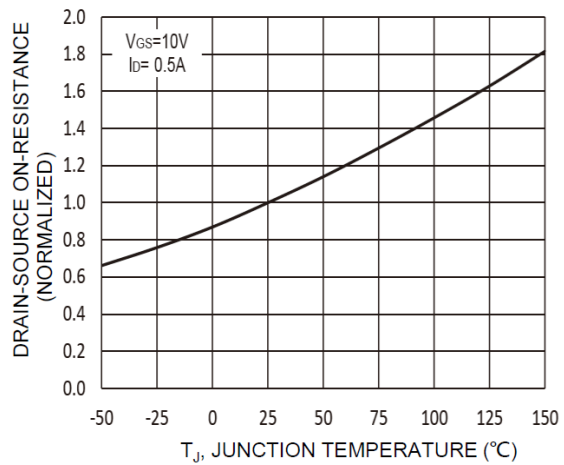


Fig. 6. On-Resistance Variation with T_J

Typical Performance Characteristics (Continue)

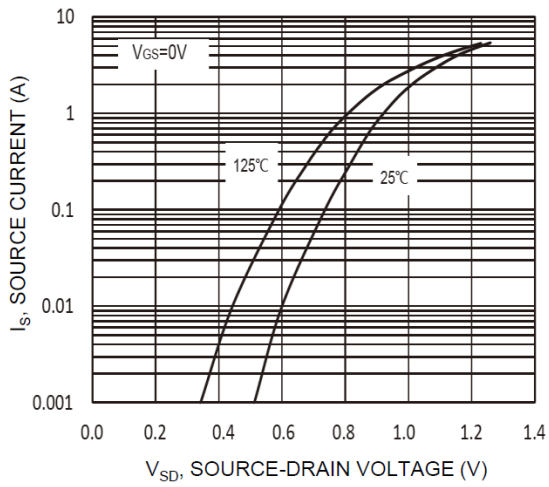


Fig. 7 Diode Forward Voltage vs. Current

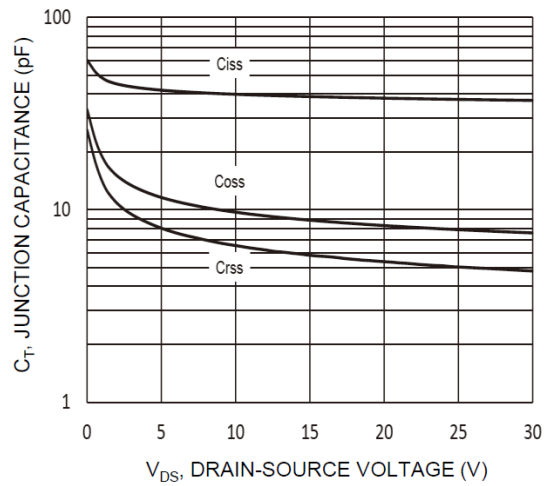


Fig. 8 Typical Capacitance

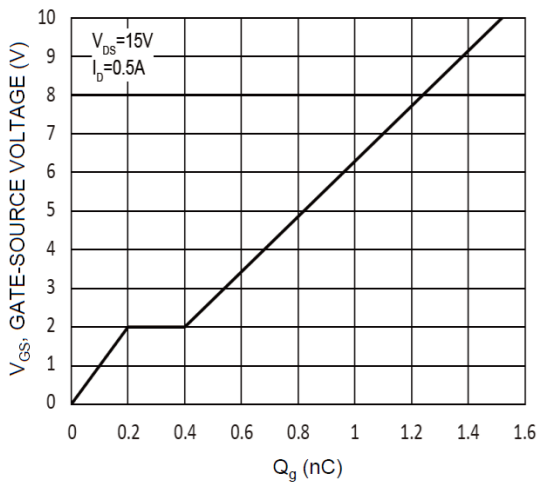


Fig. 9 Gate Charge

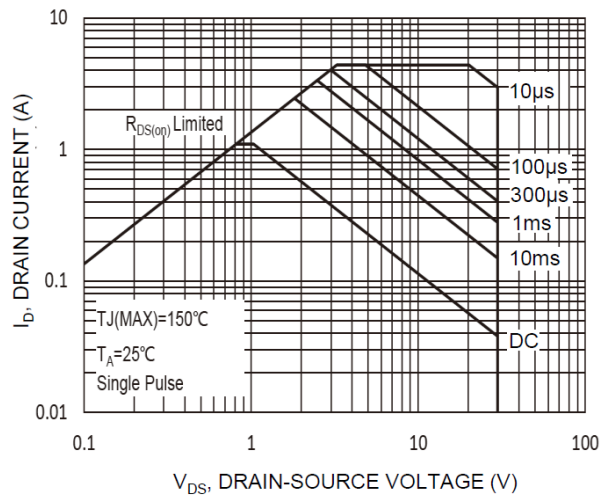


Fig. 10 Safe Operation Area

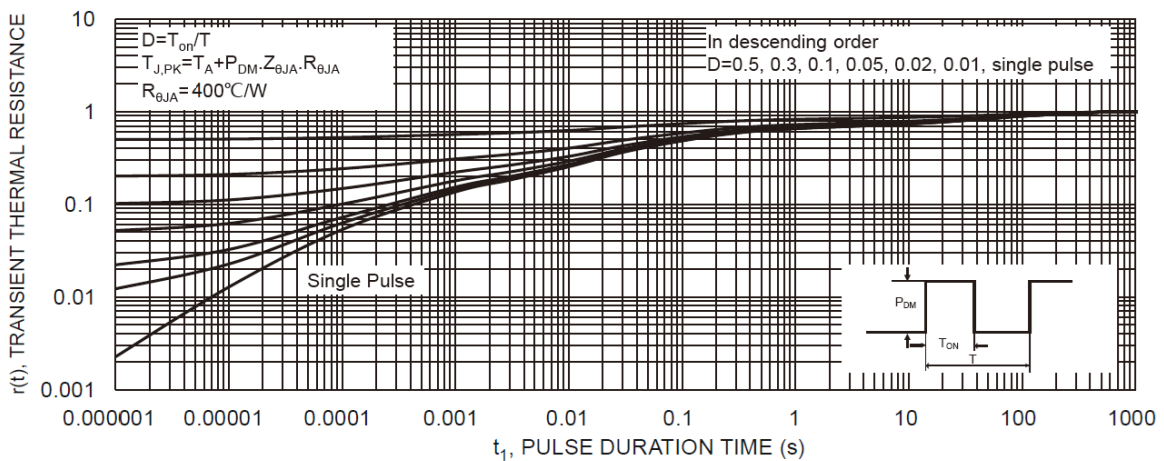
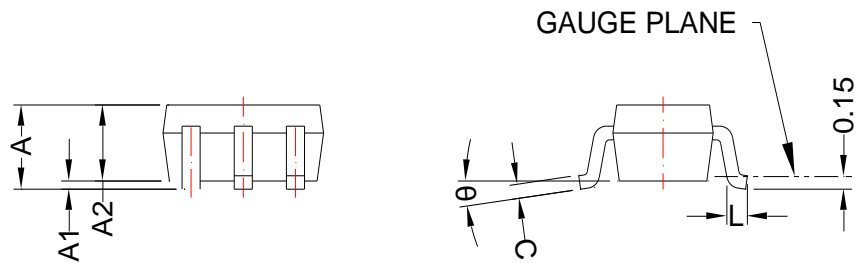
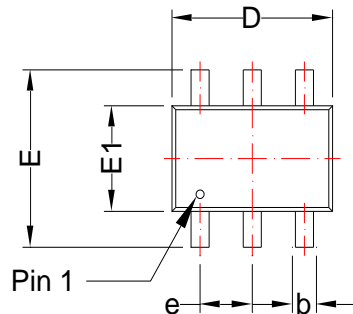


Fig. 11 Transient Thermal Response

Package Dimension

SOT-363



THE D DIMENSION DOES NOT INCLUDE MOLD FLASH, PROTRUSIONS OR GATE BURRS, MOLD FLASH, PROTRUSIONS OR GATE BURRS SHALL NOT EXCEED 0.2mm END. THE E1 DIMENSION DOES NOT INCLUDE INTERLEAD FLASH OR PROTRUSION, INTERLEAD FLASH OR PROTRUSION SHALL NOT 0.20mm PER SIDE.

Dimensions				
Symbol	Millimeters		Inches	
	Min	Max	Min	Max
A	0.80	1.10	0.031	0.043
A1	0.00	0.10	0.000	0.004
A2	0.70	1.00	0.028	0.039
b	0.15	0.30	0.006	0.012
c	0.08	0.25	0.003	0.010
D	1.80	2.20	0.071	0.087
E	1.80	2.40	0.071	0.094
E1	1.15	1.35	0.045	0.053
e	0.65 BSC		0.026 BSC	
L	0.26	0.45	0.010	0.018
θ	0°	8°	0°	8°





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