GSM3660EX7F

30V N-Channel MOSFET

Product Description

GSM3660E, 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

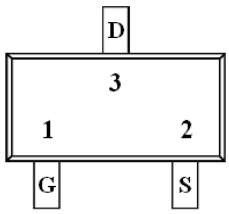
- Low Gate Charge
- ESD Protected
- SOT-523 Package
- RoHS Compliant and Halogen Free

Applications

- MB / VGA / Vcore
- POL Applications
- Load Switch
- LED Application

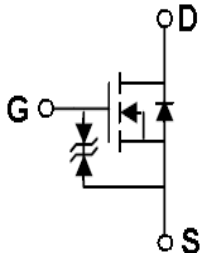
Package & Pin Assignment

GSM3660EX7F (SOT-523)



Pin	Symbol	Description
1	G	Gate
2	S	Source
3	D	Drian

Equivalent Circuit



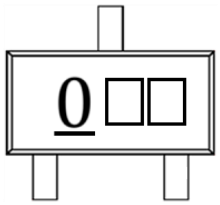
Ordering and Marking Information

Ordering Information			
Part Number	**Package**	**Part Marking**	**Quantity / Reel**
GSM3660EX7F	SOT-523	0 □□	3,000 PCS

GSM3660E 1 2

- **Product Code:** GSM3660E
- **Package Code:** 1 is X7 for SOT-523
- **Green Level:** 2 is **F** for RoHS Compliant and Halogen Free

Marking Information



- **Product Code:** 0
- **GS Code:** □□

Absolute Maximum Ratings (T_A = 25ºC unless otherwise specified)

Symbol	Parameter		Value	Unit
V_{DS}	Drain-Source Voltage		30	V
V_{GS}	Gate-Source Voltage		±12	V
I_D	Continuous Drain Current	T_A=25℃	0.51	A
I_{DM}	Pulsed Drain Current [1,2]		2	A
P_D	Power Dissipation	T_A=25℃	0.3	W
$R_{\theta JA}$	Thermal Resistance - Junction to Ambient		450	℃/W
T_J	Operating Junction Temperature Range		-55 to +150	℃
T_{STG}	Storage Temperature Range		-55 to +150	℃

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 specified)

Symbol	Parameter	Conditions	Min	Typ	Max	Unit
Static characteristics						
$V_{(BR)DSS}$	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	V
I_{GSS}	Gate Leakage Current	V_{DS}=0V, V_{GS}=±12V			10	nA
I_{DSS}	Drain-Source Leakage Current	V_{DS}=24V, V_{GS}=0V			100	uA
$R_{DS(on)}$	Drain-Source On-Resistance	V_{GS}=10V, I_D=0.5A		355	600	mΩ
		V_{GS}=4.5V, I_D=0.4A		435	650	
		V_{GS}=2.5V, I_D=0.3A		665	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			1.35	V
Gate charge characteristics						
Q_g	Total Gate Charge[3,4]	V_{DS}=15V, V_{GS}=10V, I_D=0.5A		1.5		nC
Q_{gs}	Gate-Source Charge[3,4]			0.2		
Q_{gd}	Gate-Drain Charge[3,4]			0.2		
Dynamic characteristics						
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	Rise Time			16		
$t_{d(off)}$	Turn-Off Time			20		
t_f	Fall Time			18		

Typical Performance Characteristics (T_A = 25ºC unless otherwise specified)

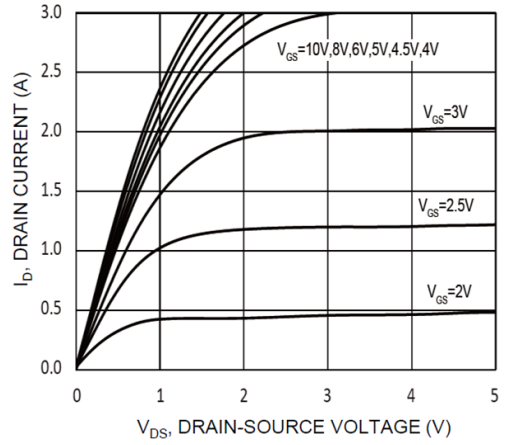


Fig.1 Output Characteristics

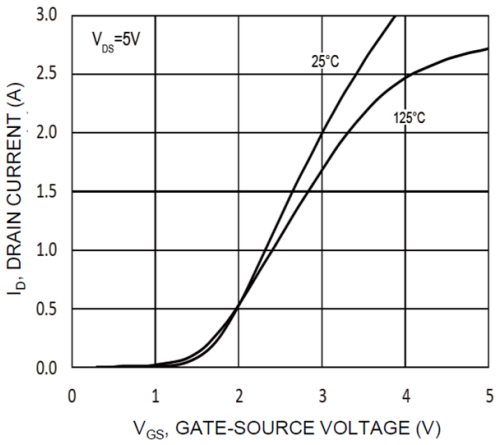


Fig.2 Transfer Characteristics

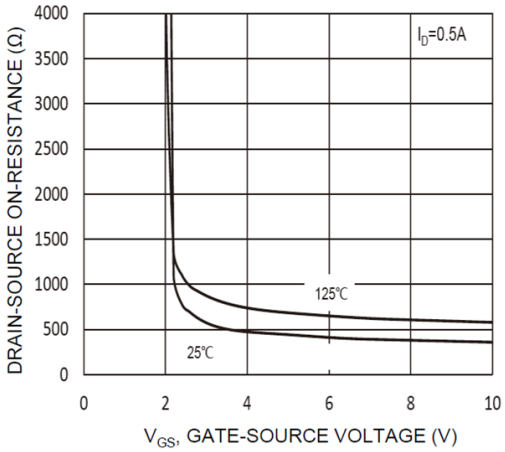


Fig.3 On-Resistance vs. V_{GS}

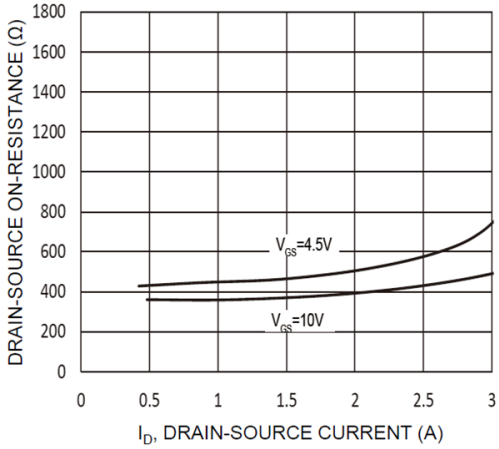


Fig.4 On-Resistance vs. I_D

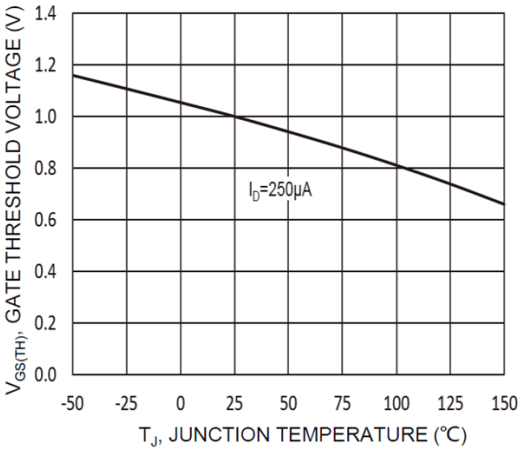


Fig.5 Normalized Threshold Voltage

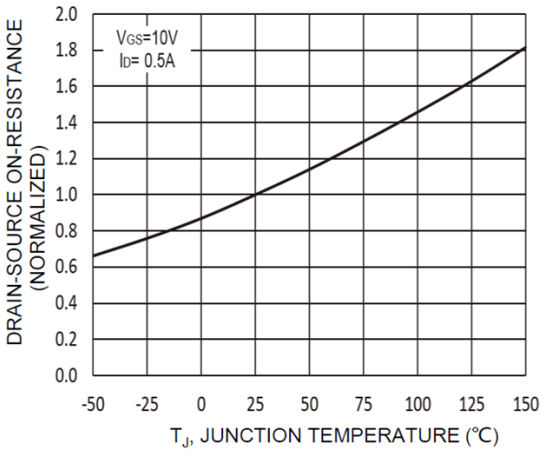


Fig.6 On-Resistance vs. T_J

Typical Performance Characteristics (Continued)

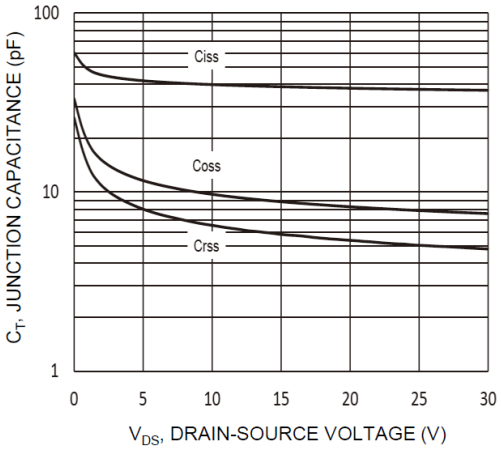


Fig.7 Capacitance

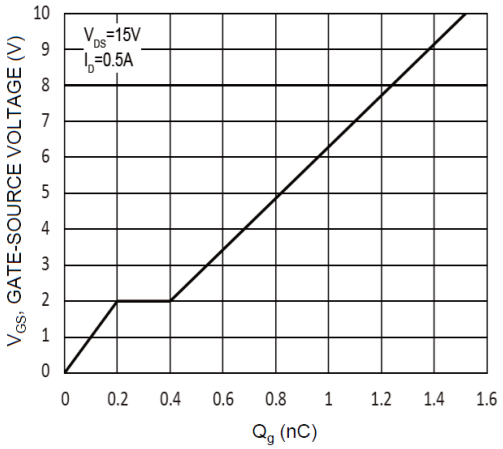


Fig.8 Gate Charge

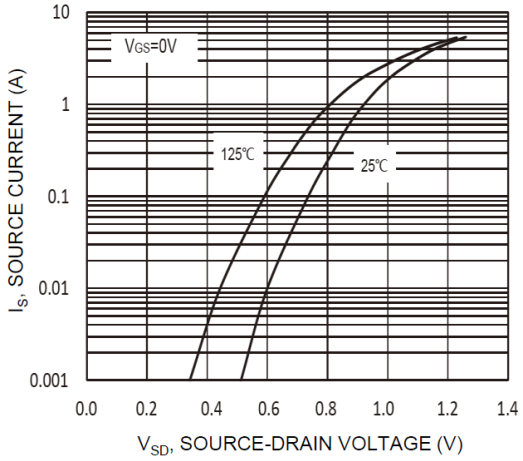


Fig.9 Diode Forward Voltage vs. Current

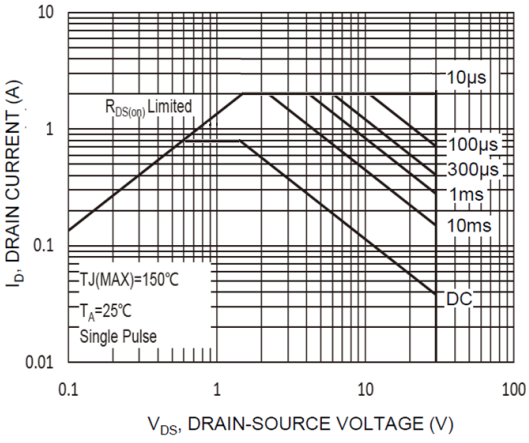


Fig.10 Safe Operation Area

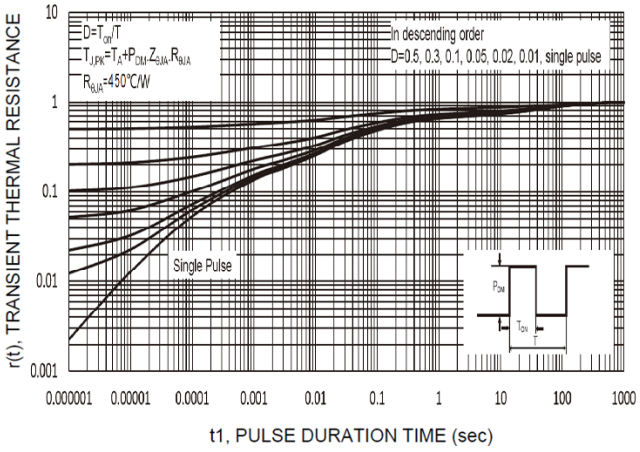
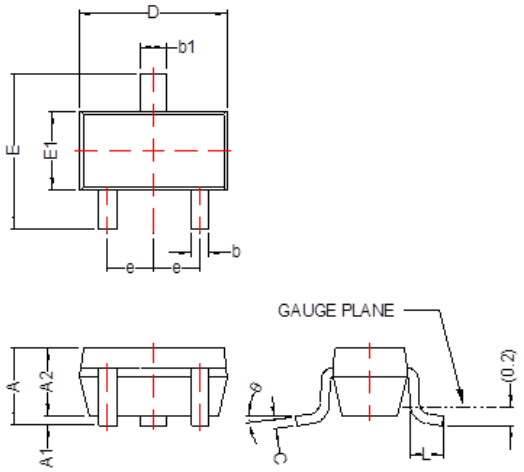


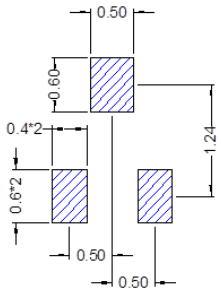
Fig.11 Normalized Transient Impedance

SOT-523

Package Dimension



Recommended Land Pattern



Unit: mm

Dimensions				
Symbol	**Millimeters**		**Inches**	
	Min	**Max**	**Min**	**Max**
A	0.60	0.95	0.024	0.037
A1	0.00	0.10	0.000	0.004
A2	0.60	0.85	0.024	0.033
b	0.15	0.30	0.006	0.012
b1	0.25	0.40	0.010	0.016
c	0.08	0.25	0.003	0.010
D	1.40	1.80	0.055	0.071
E	1.40	1.80	0.055	0.071
E1	0.70	0.90	0.028	0.035
e	0.50 BSC		0.020 BSC	
L	0.26	0.46	0.010	0.018
θ	0°	8°	0°	8°

NOTE:
Dimensions are exclusive of Burrs, Mold Flash and Tie Bar extrusions.

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