GSM1026S

60V N-Channel Enhancement Mode MOSFET

Product Description

GSM1026S, 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

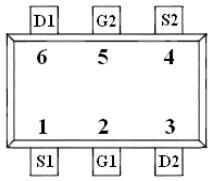
- 60V/0.5A,$R_{DS(ON)}$=2.4Ω@V_{GS}=10V
- 60V/0.2A,$R_{DS(ON)}$=3.0Ω@V_{GS}=4.5V
- Super high density cell design for extremely low $R_{DS(ON)}$
- Exceptional on-resistance and maximum DC current capability
- ESD Protection (>2KV) Diode design–in
- SOT-563 package design

Applications

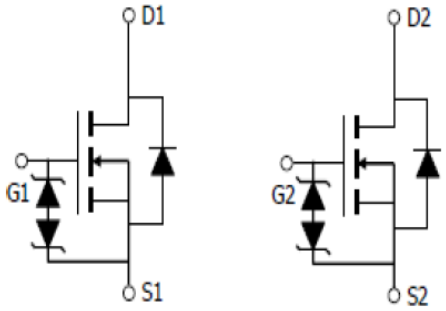
- Drivers: Relays, Solenoids, Lamps, Hammers, Displays, Memories
- Battery Operated Systems
- Power Supply Converter Circuits
- Load/Power Switching Smart Phones, Pagers

Packages & Pin Assignments

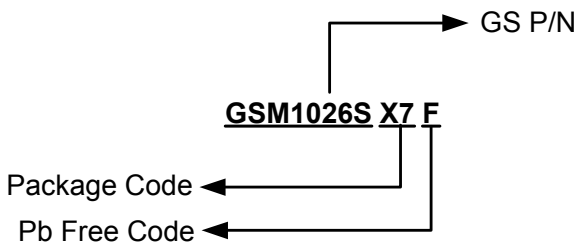
GSM1026SX7F (SOT-563)



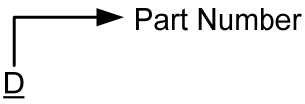
1	Source1	4	Source2
2	Gate1	5	Gate2
3	Drain2	6	Drain1



Ordering Information



Marking Information



Part Number	Package	Part Marking
GSM1026SX7F	SOT-563	D

Absolute Maximum Ratings

(T_A=25ºC unless otherwise noted)

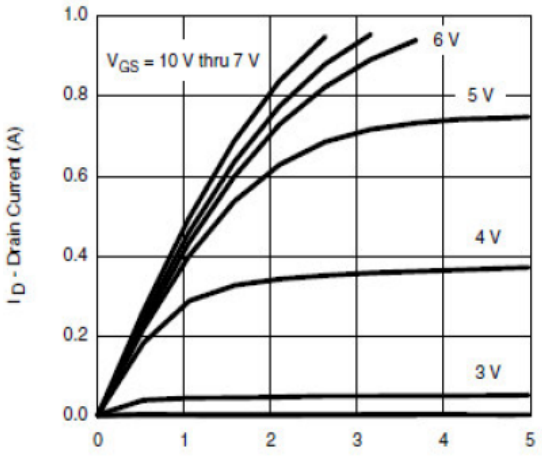
Symbol	Parameter		Typical	Unit
V_{DSS}	Drain-Source Voltage		60	V
V_{GSS}	Gate –Source Voltage		±20	V
I_D	Continuous Drain Current(T_J=150℃)	T_A=25ºC	0.35	A
		T_A=70ºC	0.23	
I_{DM}	Pulsed Drain Current		0.65	A
I_S	Continuous Source Current(Diode Conduction)		0.25	A
P_D	Power Dissipation	T_A=25ºC	0.25	W
		T_A=70ºC	0.15	
T_J	Operating Junction Temperature		-55/150	ºC
T_{STG}	Storage Temperature Range		-55/150	ºC

Electrical Characteristics

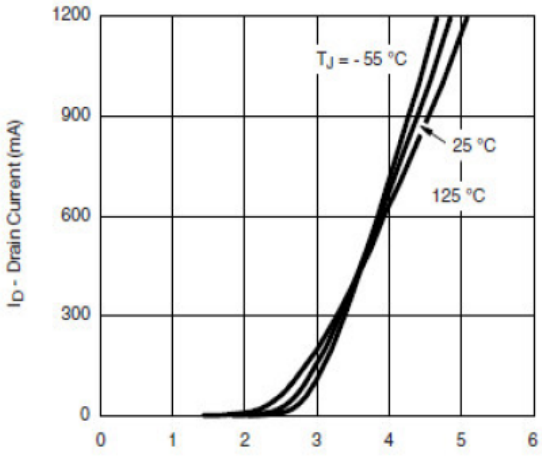
(T_A=25ºC unless otherwise noted)

Symbol	Parameter	Conditions	Min	TYP	Max	Unit
Static						
$V_{(BR)DSS}$	Drain-Source Breakdown Voltage	V_{GS}=0V,I_D=250uA	60			V
$V_{GS(th)}$	Gate Threshold Voltage	V_{DS}=V_{GS},I_D=250uA	1.0		2.0	
I_{GSS}	Gate Leakage Current	V_{DS}=0V,V_{GS}=±20V			3	uA
I_{DSS}	Zero Gate Voltage Drain Current	V_{DS}=60V,V_{GS}=0V			1	uA
		V_{DS}=60V, V_{GS}=0V,T_J=85ºC			10	
$R_{DS(on)}$	Drain-Source On-Resistance	V_{GS}=10V,I_D=0.5A		1.2	2.4	Ω
		V_{GS}=4.5V,I_D=0.2A		1.7	3.0	
g_{FS}	Forward Transconductance	V_{DS}=10V,I_D=0.2A		0.2		S
V_{SD}	Diode Forward Voltage	I_S=0.2A,V_{GS}=0V		0.75	1.4	V
Dynamic						
C_{iss}	Input Capacitance	V_{DS}=25V,V_{GS}=0V f=1MHz		30		pF
C_{oss}	Output Capacitance			8		
C_{rss}	Reverse Transfer Capacitance			5		
Q_g	Total Gate Charge	V_{DS}=10V, V_{GS}=4.5V,I_D=0.25A		450		pC
Q_{gs}	Gate-Source Charge			110		
Q_{gd}	Gate-Drain Charge			150		
$t_{d(on)}$	Turn-On Time	V_{DD}=30V, R_L=150Ω,I_D=0.2A V_{GEN}=10V,R_G=10Ω		4	10	ns
t_r				5	15	
$t_{d(off)}$	Turn-Off Time			12	20	
t_f				10	20	

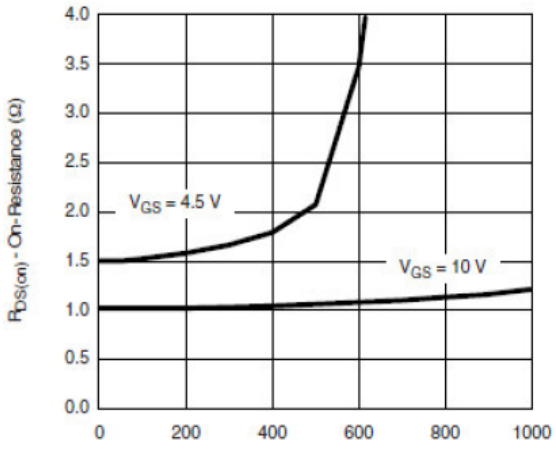
Typical Performance Characteristics



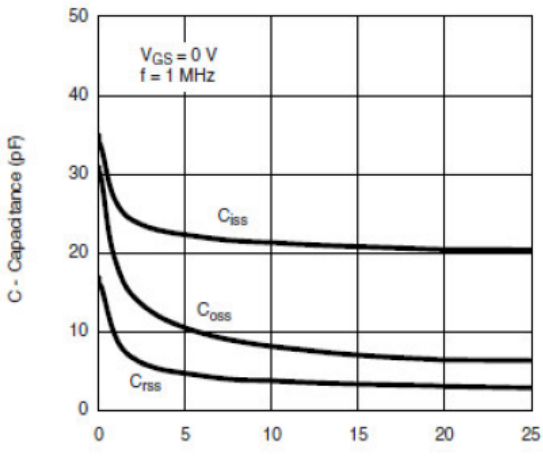
Output Characteristics



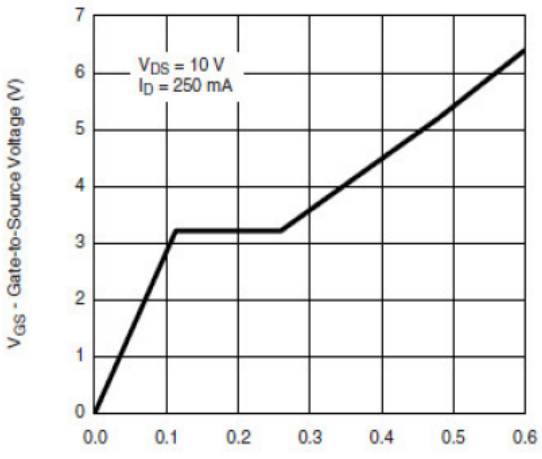
Transfer Characteristics



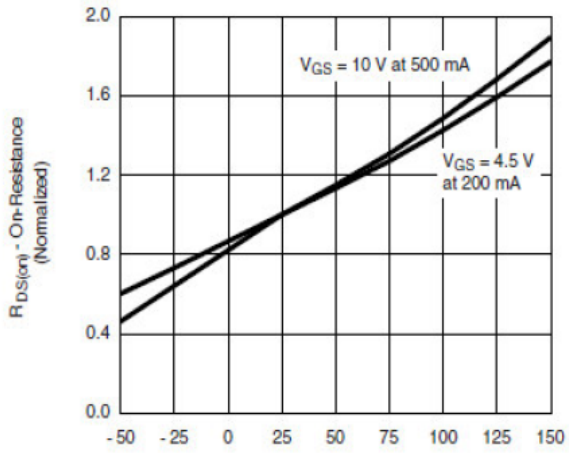
On-Resistance vs. Drain Current



Capacitance

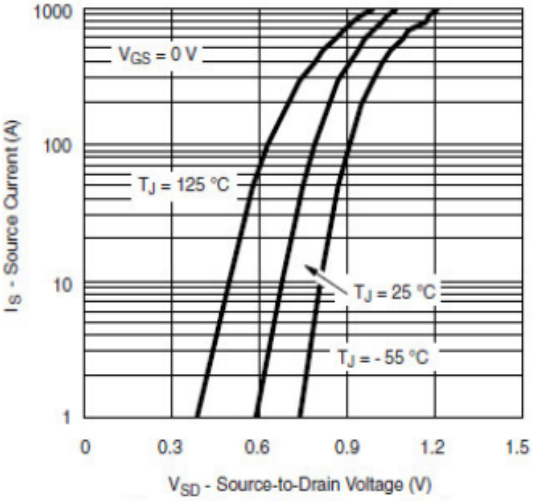


Gate Charge

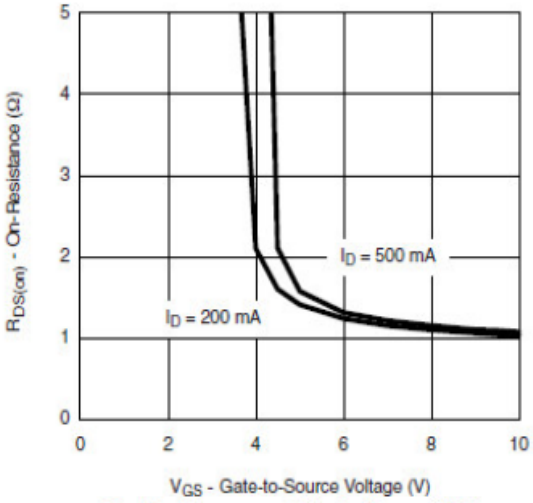


On-Resistance vs. Junction Temperature

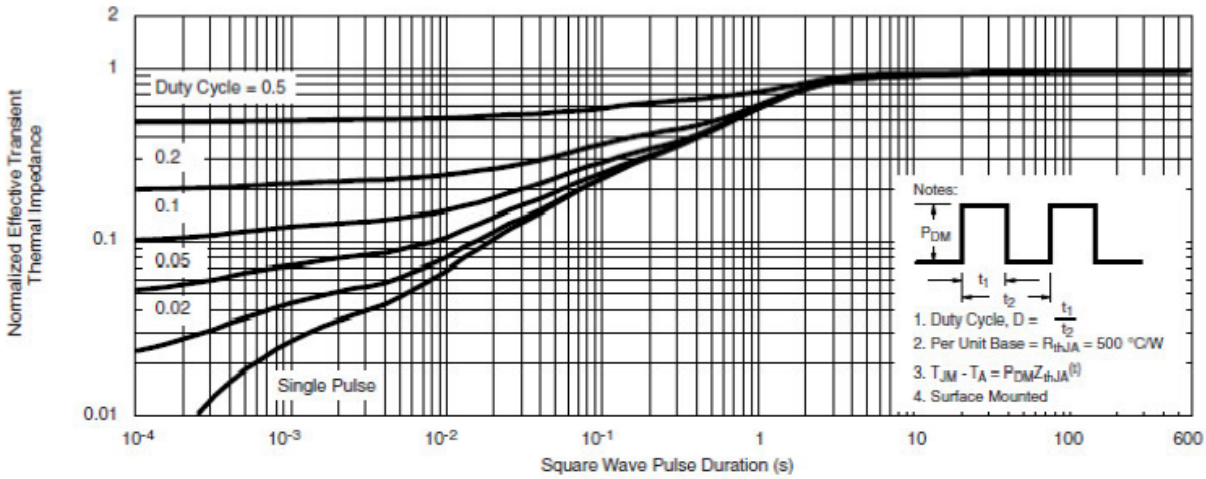
Typical Performance Characteristics (continue)



Source-Drain Diode Forward Voltage



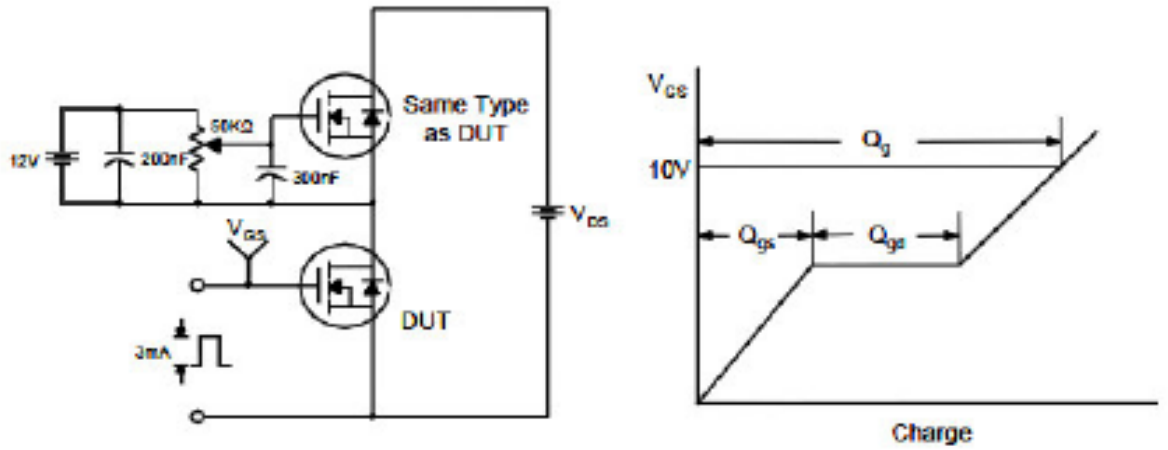
On-Resistance vs. Gate-to-Source Voltage



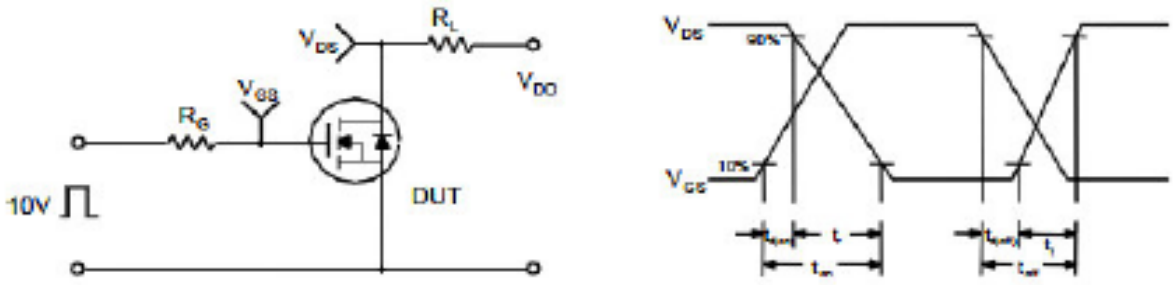
Normalized Thermal Transient Impedance, Junction-to-Ambient

Typical Characteristics

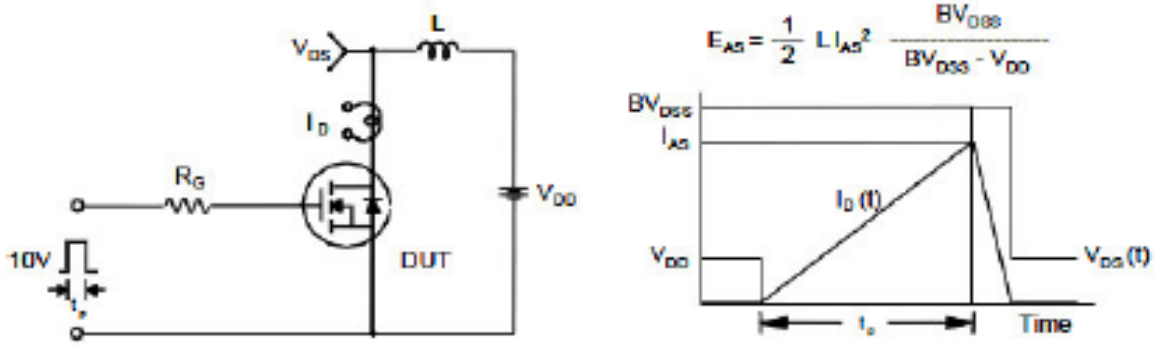
Gate Charge Test Circuit & Waveform



Resistive Switching Test Circuit & Waveforms

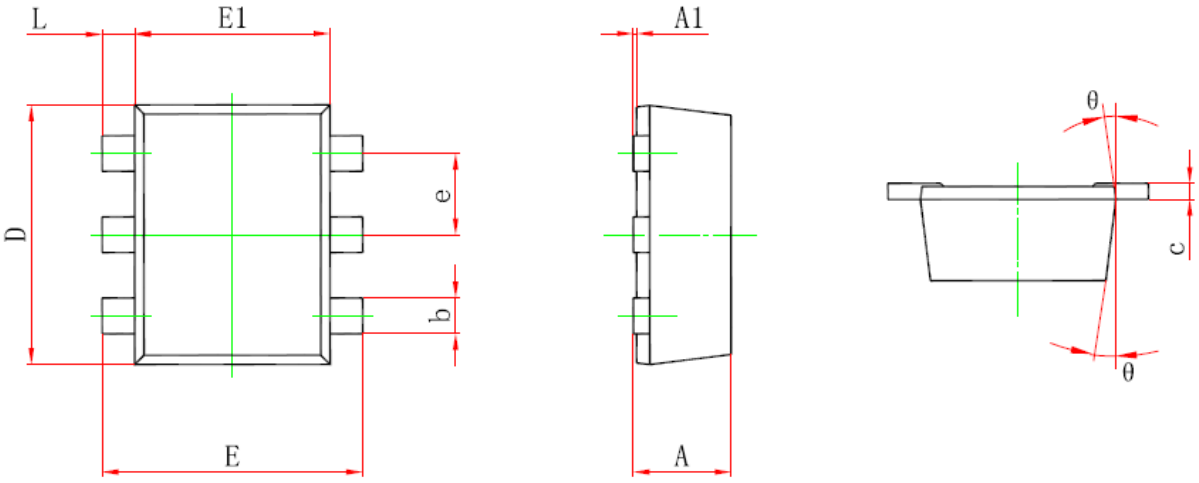


Unclamped Inductive Switching Test Circuit & Waveforms



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	0.450	0.550	0.018	0.022
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
E1	1.100	1.300	0.043	0.051
E	1.500	1.700	0.059	0.067
L	0.100	0.300	0.004	0.012
θ	7° REF		7° REF	

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