GSM3406AS

30V N-Channel Enhancement Mode MOSFET

Product Description

GSM3406AS, 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, and low in-line power loss are needed in commercial industrial surface mount applications.

Features

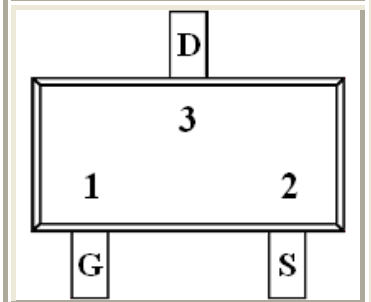
- 30V/2.8A,$R_{DS(ON)}$=45mΩ@V_{GS}=10V
- 30V/2.4A,$R_{DS(ON)}$=55mΩ@V_{GS}=4.5V
- Super high density cell design for extremely low $R_{DS\ (ON)}$
- SOT-23 package design

Applications

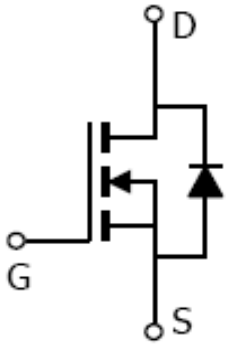
- Power Management in Note book
- LED Display
- DC-DC System
- LCD Panel

Packages & Pin Assignments

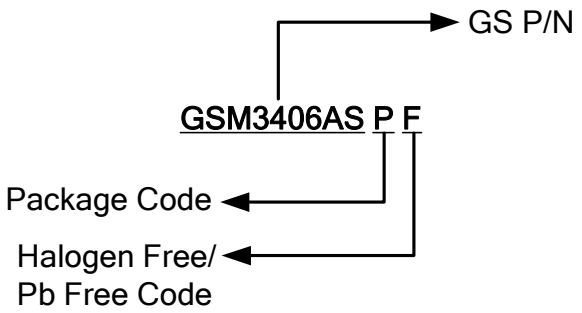
GSM3406ASJZF(SOT-23)



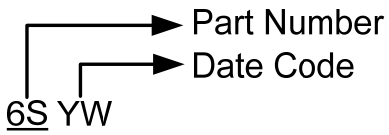
1	Gate
2	Source
3	Drain



Ordering Information



Marking Information



Part Number	Package	Part Marking
GSM3406ASJZF	SOT-23	6SYW

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		±20	V
I_D	Continuous Drain Current(T_J=150℃)	T_A=25ºC	2.8	A
		T_A=70ºC	2.4	
I_{DM}	Pulsed Drain Current		20	A
I_S	Continuous Source Current(Diode Conduction)		1.5	A
P_D	Power Dissipation	T_A=25ºC	1.25	W
		T_A=70ºC	0.8	
T_J	Operating Junction Temperature		150	ºC
T_{STG}	Storage Temperature Range		-55/150	ºC
$R_{\theta JA}$	Thermal Resistance-Junction to Ambient		120	ºC/ W

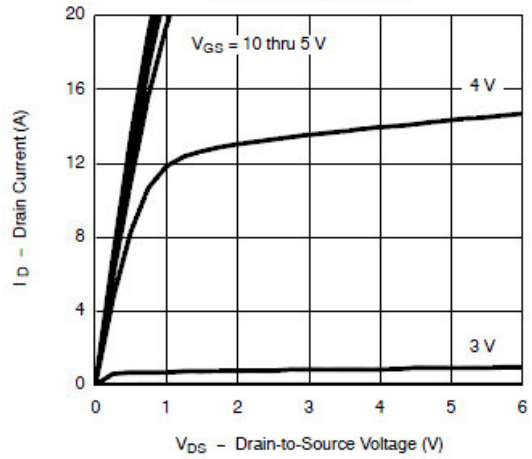
Electrical Characteristics

(T_A=25ºC unless otherwise noted)

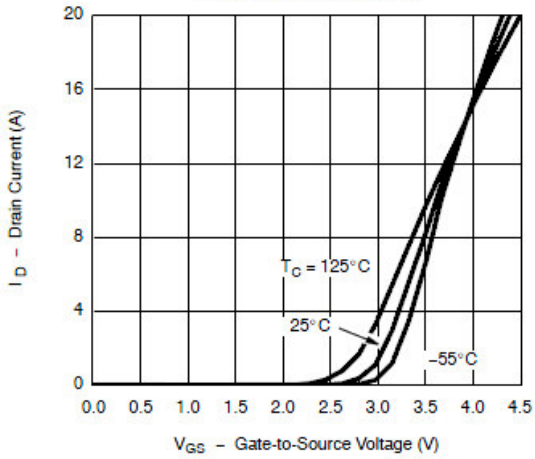
Symbol	Parameter	Conditions	Min.	Typ	Max.	Unit
Static						
$V_{(BR)DSS}$	Drain-Source Breakdown Voltage	V_{GS}=0V,I_D=250uA	30			V
$V_{GS(th)}$	Gate Threshold Voltage	V_{DS}=V_{GS},I_D=250uA	1.3		2.1	
I_{GSS}	Gate Leakage Current	V_{DS}=0V,V_{GS}=±20V			±100	nA
I_{DSS}	Zero Gate Voltage Drain Current	V_{DS}=24V,V_{GS}=0V			1	uA
		V_{DS}=24V, V_{GS}=0V,T_J=85ºC			30	
$I_{D(on)}$	On-State Drain Current	V_{DS}≥4.5V,V_{GS}=10V	6			A
$R_{DS(on)}$	Drain-Source On-Resistance	V_{GS}=10V,I_D=2.8A		32	45	mΩ
		V_{GS}=4.5V,I_D=2.4A		42	55	
g_{fs}	Forward Transconductance	V_{DS}=4.5V,I_D=2.5A		8		S
V_{SD}	Diode Forward Voltage	I_S=1.6A,V_{GS}=0V		0.8	1.2	V
Dynamic						
C_{iss}	Input Capacitance	V_{DS}=15V, V_{GS}=0V,f=1MHz		320		pF
C_{oss}	Output Capacitance			70		
C_{rss}	Reverse Transfer Capacitance			30		
Q_g	Total Gate Charge	V_{DS}=15V, V_{GS}=10V, I_D≡2.6A		3.0	4.5	nC
Q_{gs}	Gate-Source Charge			1.6		
Q_{gd}	Gate-Drain Charge			0.6		
$t_{d(on)}$	Turn-On Time	V_{DD}=15V, R_L=15Ω ,I_D≡1.0A V_{GEN}=10V,R_G=6Ω		8	12	ns
T_r				12	18	
$t_{d(off)}$	Turn-Off Time			15	30	
T_f				8	15	

Typical Performance Characteristics

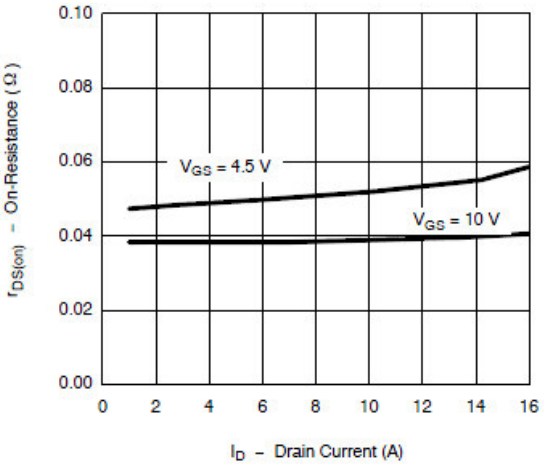
Output Characteristics



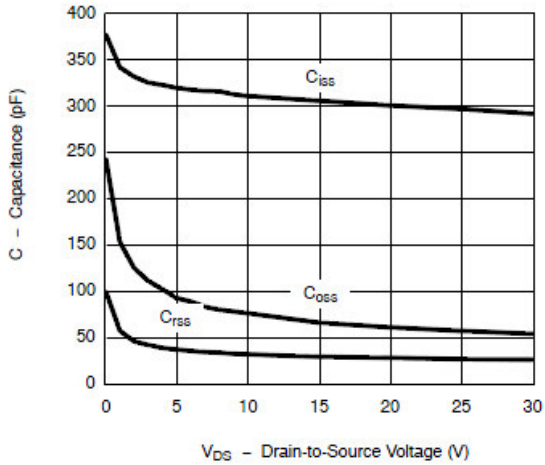
Transfer Characteristics



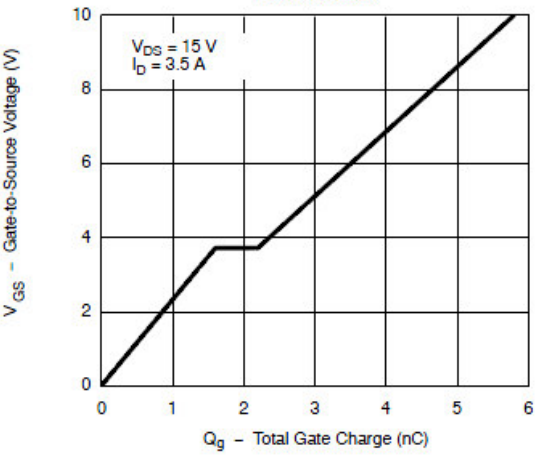
On-Resistance vs. Drain Current



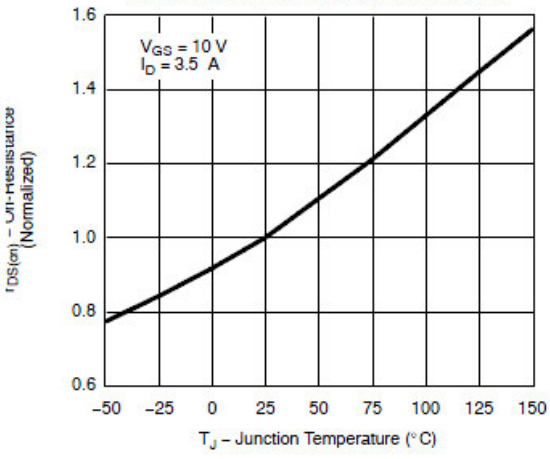
Capacitance



Gate Charge

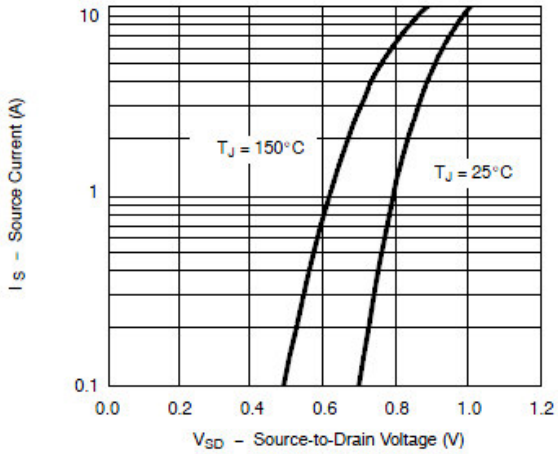


On-Resistance vs. Junction Temperature

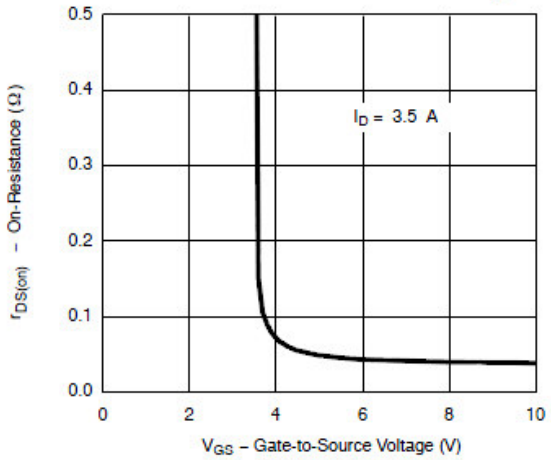


Typical Performance Characteristics (continue)

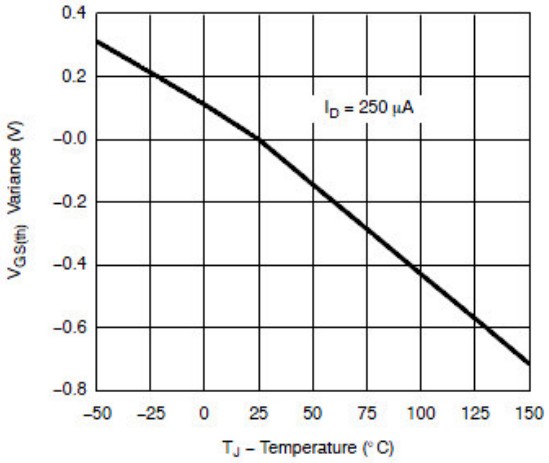
Source-Drain Diode Forward Voltage



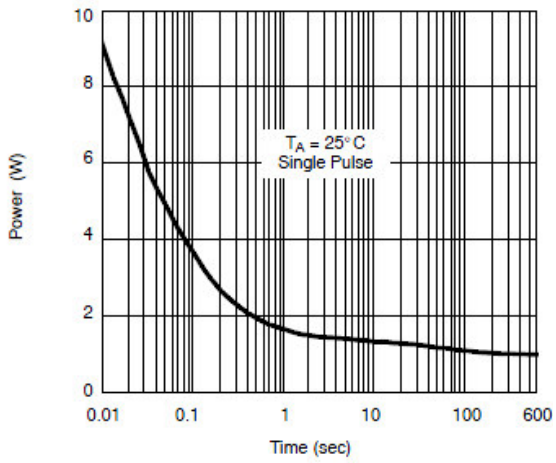
On-Resistance vs. Gate-to-Source Voltage



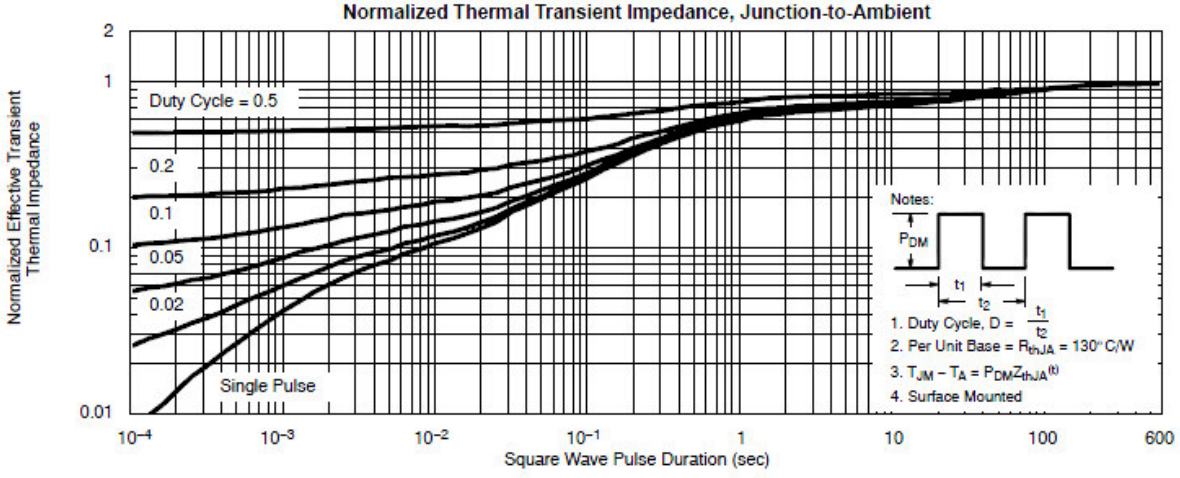
Threshold Voltage



Single Pulse Power

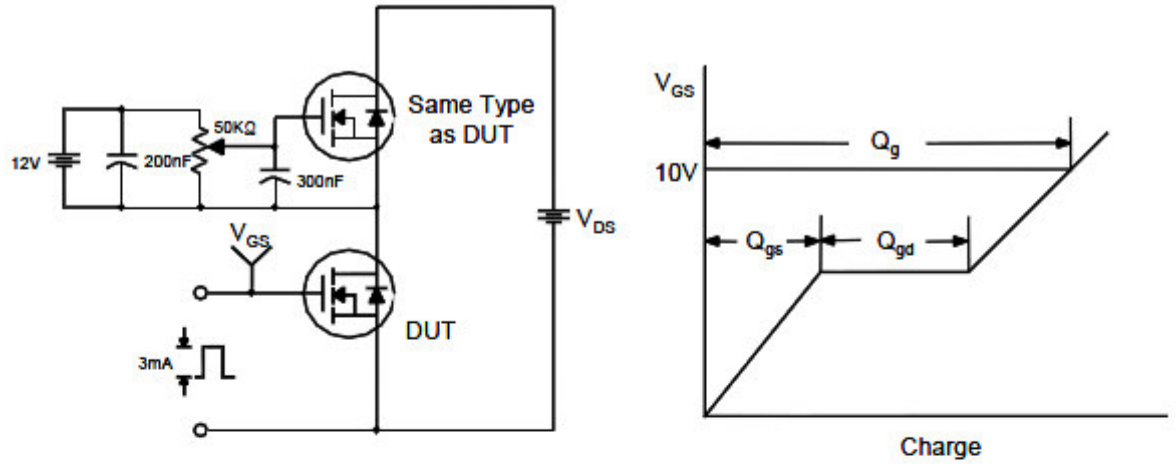


Normalized Thermal Transient Impedance, Junction-to-Ambient

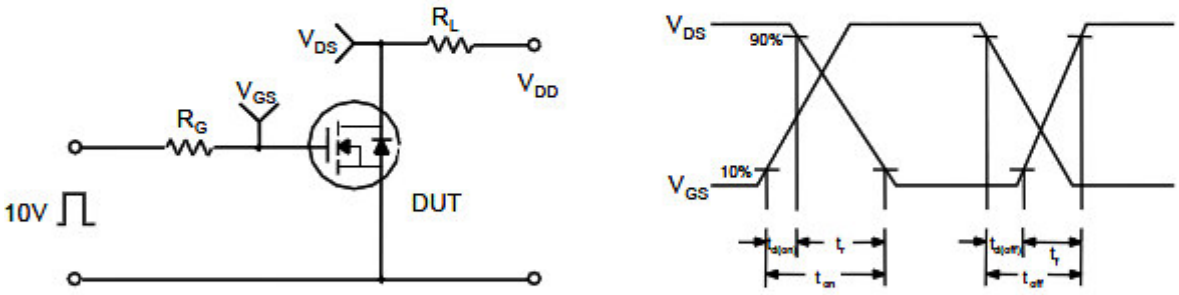


Typical Characteristics

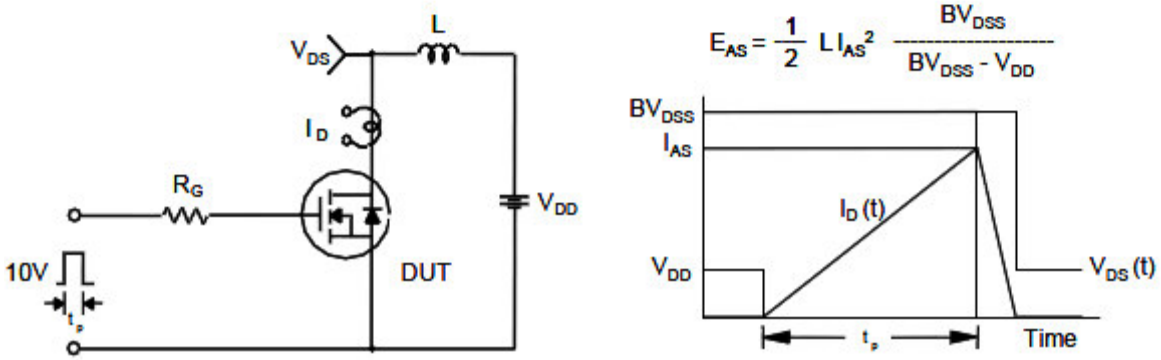
Gate Charge Test Circuit & Waveform



Resistive Switching Test Circuit & Waveforms

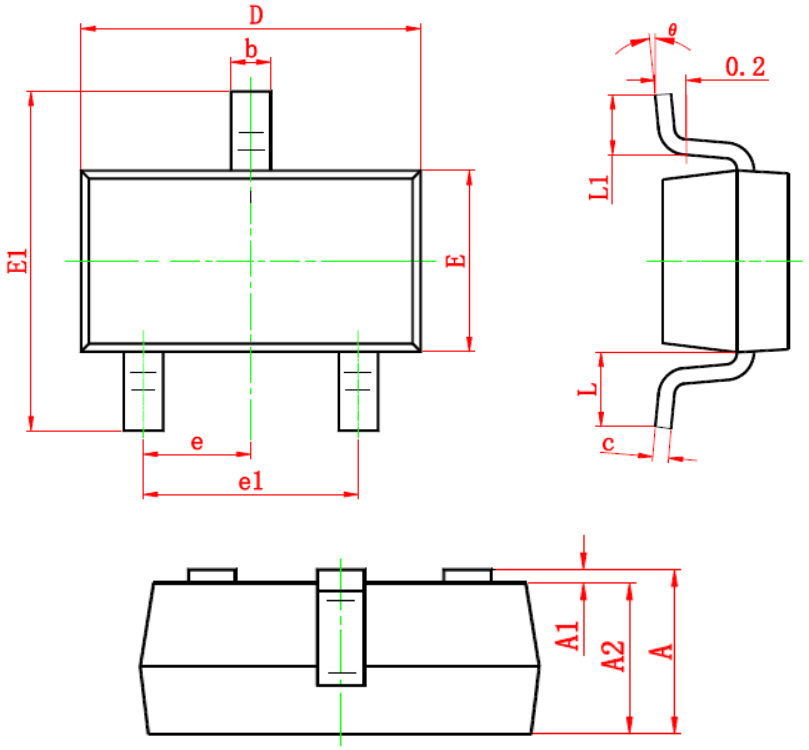


Unclamped Inductive Switching Test Circuit & Waveforms



Package Dimension

SOT-23



Dimensions				
Symbol	Millimeters		Inches	
	Min	Max	Min	Max
A	0.900	1.200	0.035	0.043
A1	0.000	0.100	0.000	0.004
A2	0.900	1.100	0.035	0.039
b	0.300	0.500	0.012	0.020
c	0.080	0.150	0.003	0.006
D	2.800	3.000	0.110	0.118
E	1.200	1.400	0.047	0.055
E1	2.250	2.550	0.089	0.100
e	0.950 TYP		0.037 TYP	
e1	1.800	2.000	0.071	0.079
L	0.550 REF		0.022 REF	
L1	0.300	0.500	0.012	0.020
θ	0°	8°	0°	6°

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