

GSM3406ASJZF

30V N-Channel 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.

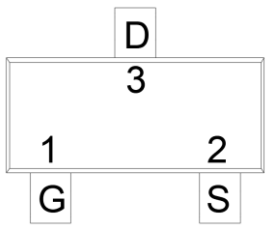
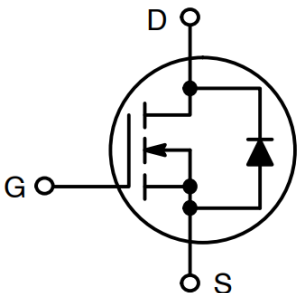
Features

- 30V/3.5A, $R_{DS(ON)}=30m\Omega@V_{GS}=10V$
- 30V/2.4A, $R_{DS(ON)}=45m\Omega@V_{GS}=4.5V$
- Super high-density cell design for extremely low $R_{DS(ON)}$
- SOT-23 package design

Applications

- Power Management in Notebook
- LED Display
- DC-DC System
- LCD Panel

Packages & Pin Assignments

SOT-23		Equivalent Circuit
 Top Views		
Pin	Description	
1	Gate	
2	Source	
3	Drain	

Ordering and Marking Information

Ordering Information			
Part Number	Package	Part Marking	Quantity / Reel
GSM3406ASJZF	SOT-23	6S□□	3,000 PCS
GSM3406AS 1 2 - Product Code: GSM3406AS - Package Code: 1 is JZ for SOT-23 - Green Level: 2 is F for RoHS Compliant and Halogen Free			
Marking Information			
6S□□ - Product Code: 6S - GS Code: □□			

Absolute Maximum Ratings (T_A=25°C unless otherwise noted)

Symbol	Parameter	Value	Unit
V _{DSS}	Drain-Source Voltage	30	V
V _{GSS}	Gate –Source Voltage	±20	V
I _D	Continuous Drain Current (T _J =150°C)	T _A =25°C	A
		T _A =70°C	
I _{DM}	Pulsed Drain Current	20	A
P _D	Power Dissipation	T _A =25°C	W
		T _A =70°C	
T _J	Operating Junction Temperature	150	°C
T _{STG}	Storage Temperature Range	-55 to 150	°C
R _{θJA}	Thermal Resistance-Junction to Ambient	100	°C/ W

Electrical Characteristics (T_A=25°C unless otherwise noted)

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	1.0		2.5	
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 =85°C			30	
R _{DS(on)}	Drain-Source On-Resistance	V _{GS} =10V, I _D =3.5A		21	30	mΩ
		V _{GS} =4.5V, I _D =2.4A		35	45	
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
I _S	Continuous Source Current (Diode Conduction)	V _G =V _D =0V , Force Current			3.5	A
Dynamic characteristics						
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 _b ≐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

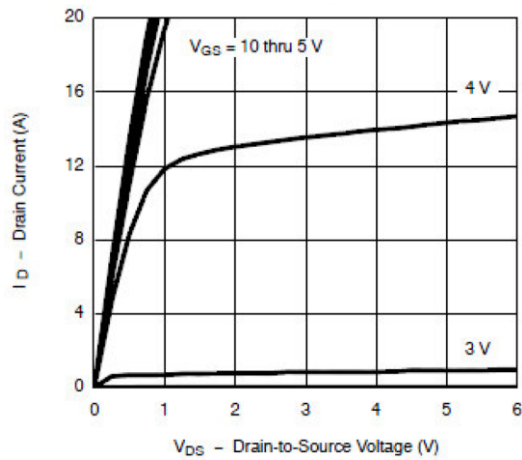


Fig. 1 Output Characteristics

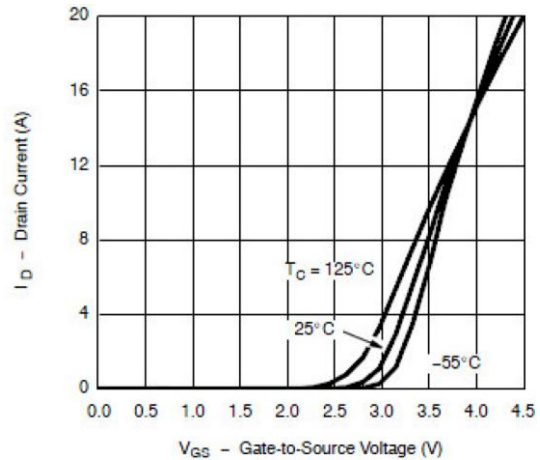


Fig. 2 Transfer Characteristics

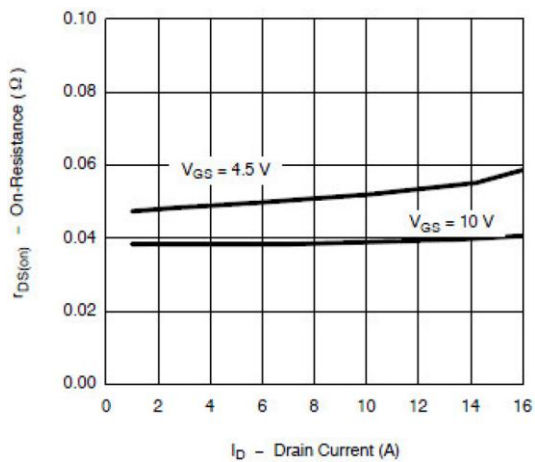


Fig. 3 On-Resistance vs. Drain Current

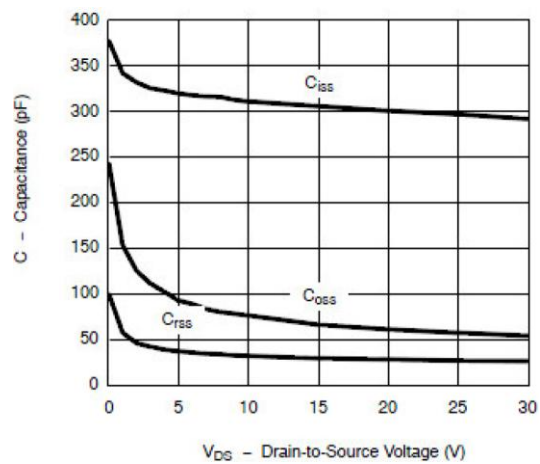


Fig. 4 Capacitance

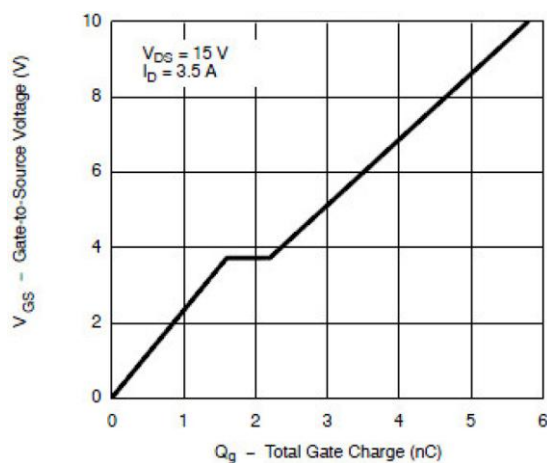


Fig. 5 On-Resistance vs. Drain Current

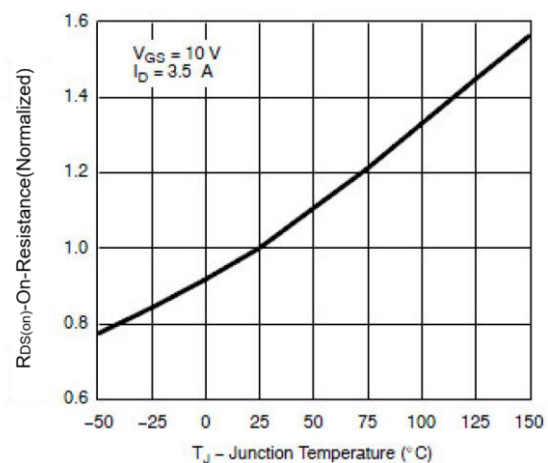


Fig. 6 On-Resistance vs. Junction Temperature

Typical Performance Characteristics (continue)

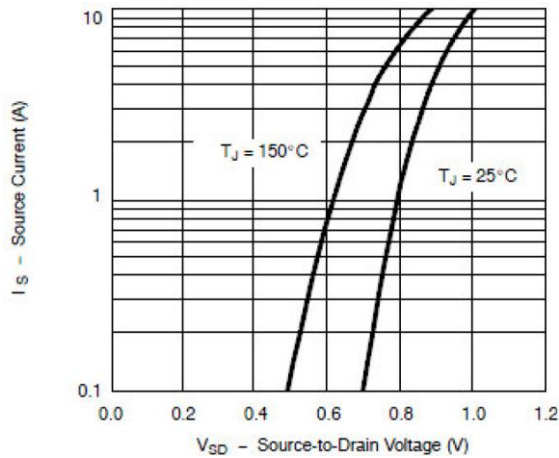


Fig. 7 Source-Drain Diode Forward Voltage

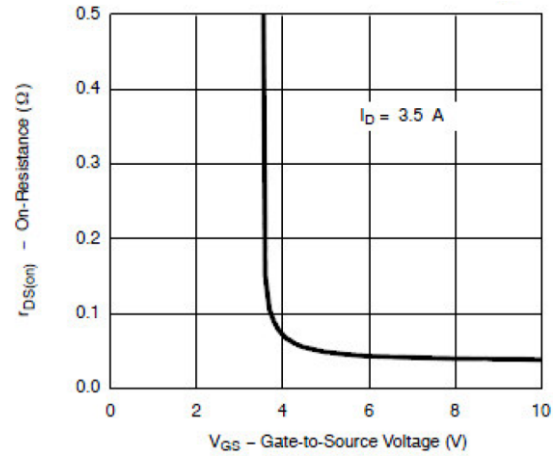


Fig. 8 On-Resistance vs. Gate-to-Source Voltage

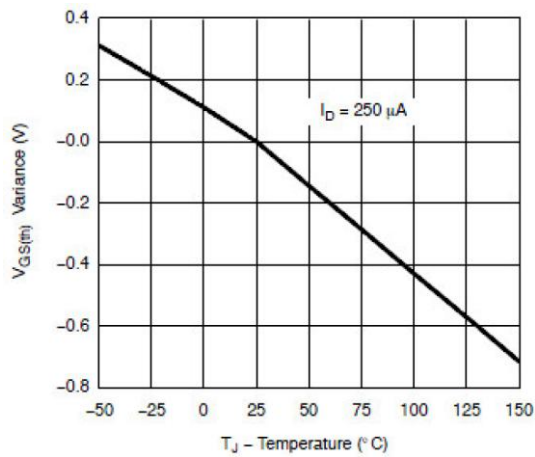


Fig. 9 Threshold Voltage

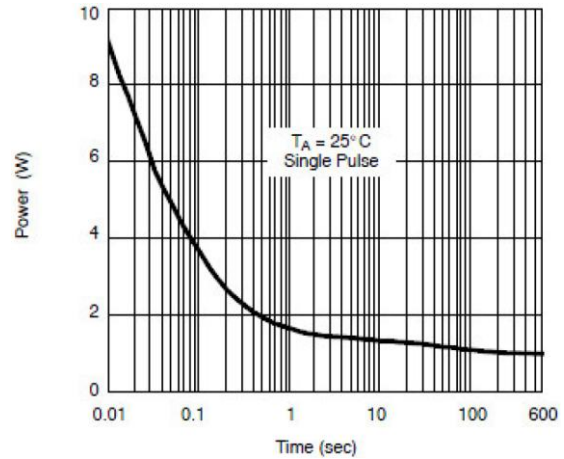


Fig. 10 Single Pulse Power

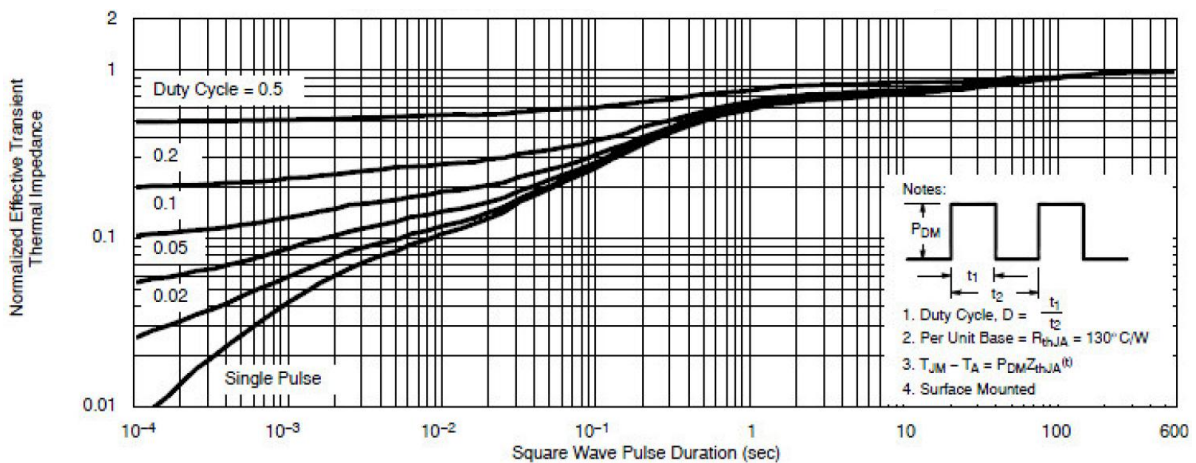
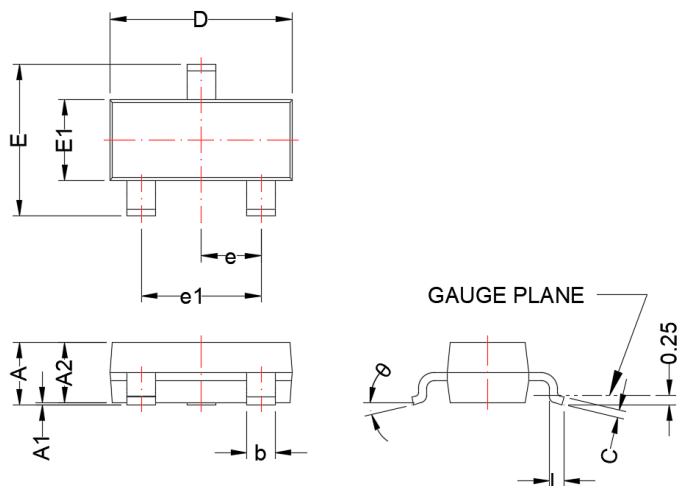


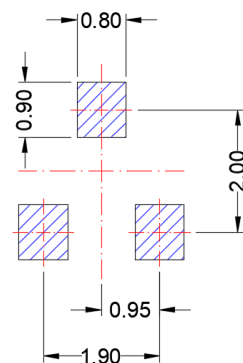
Fig. 11 Normalized Thermal Transient Impedance, Junction-To Ambient

SOT-23

Package Dimension



Recommended Land Pattern



Unit:mm

Dimensions				
Symbol	Millimeters		Inches	
	MIN	MAX	MIN	MAX
A	0.75	1.17	0.030	0.046
A1	0.01	0.15	0.000	0.006
A2	0.70	1.02	0.028	0.040
b	0.30	0.50	0.012	0.020
c	0.08	0.20	0.003	0.008
D	2.80	3.04	0.110	0.120
E	2.10	2.64	0.083	0.104
E1	1.20	1.40	0.047	0.055
e	0.95 BSC		0.037 BSC	
e1	1.90 BSC		0.075 BSC	
L	0.30	0.60	0.012	0.024
θ	0°	8°	0°	8°

NOTE:

Dimensions are exclusive of Burrs, Mold Flash & Tie Bar extrusions

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