

GSM2319AS

40V P-Channel Enhancement Mode MOSFET

Product Description

GSM2319AS, P-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.

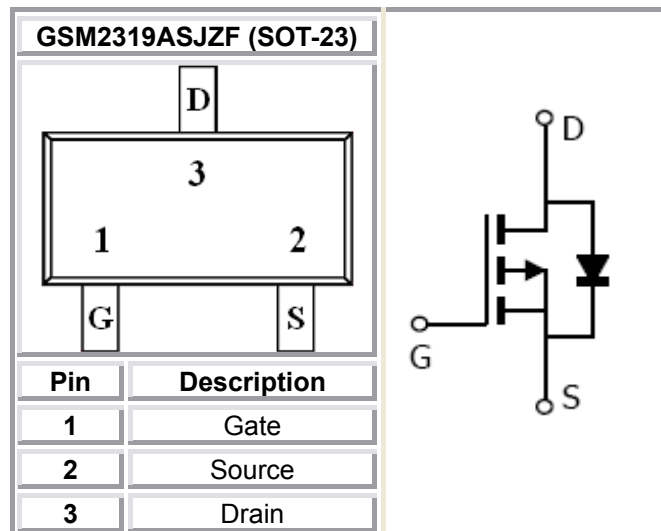
Features

- -40V/-3.0A, $R_{DS(ON)}=90m\Omega@V_{GS}=-10V$
- -40V/-2.4A, $R_{DS(ON)}=120m\Omega@V_{GS}=-4.5V$
- Super high density cell design for extremely low $R_{DS(ON)}$
- Exceptional on-resistance and maximum DC current capability
- SOT-23 package design

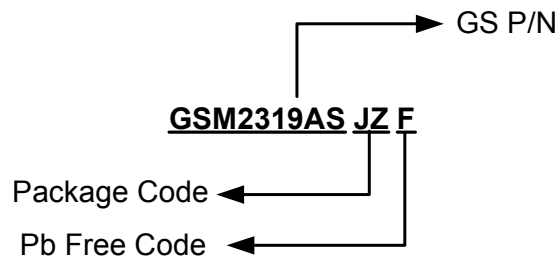
Applications

- Load Switch
- DC-DC System

Packages & Pin Assignments

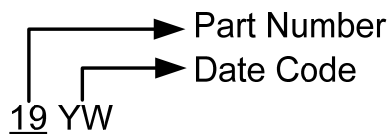


Ordering Information



Part Number	Package	Quantity Reel
GSM2319ASJZF	SOT-23	3000 PCS

Marking Information



Absolute Maximum Ratings

(T_A=25°C unless otherwise noted)

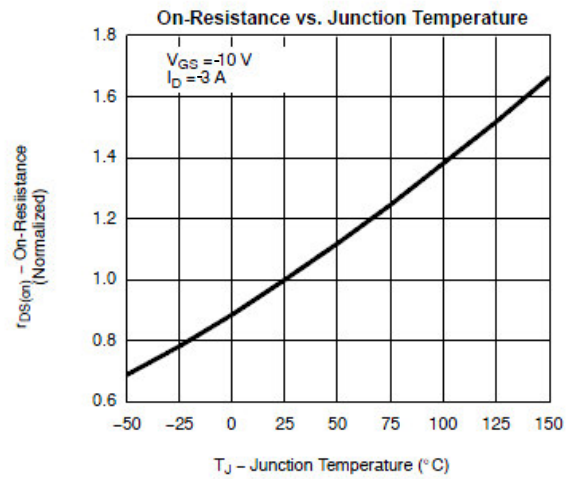
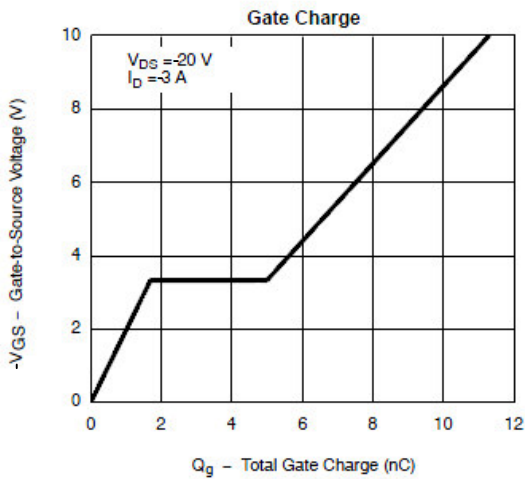
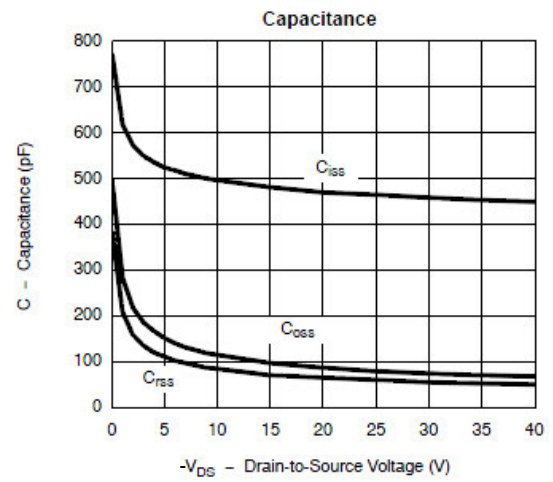
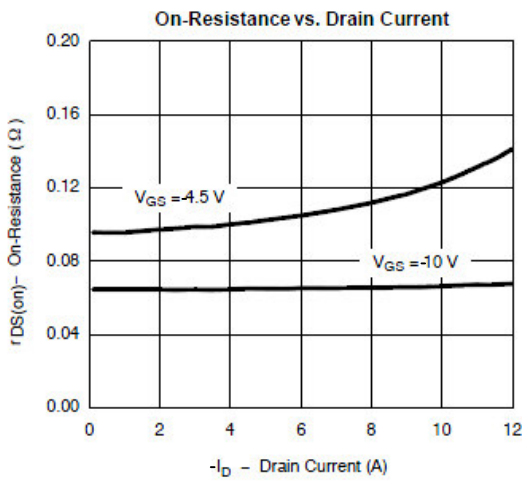
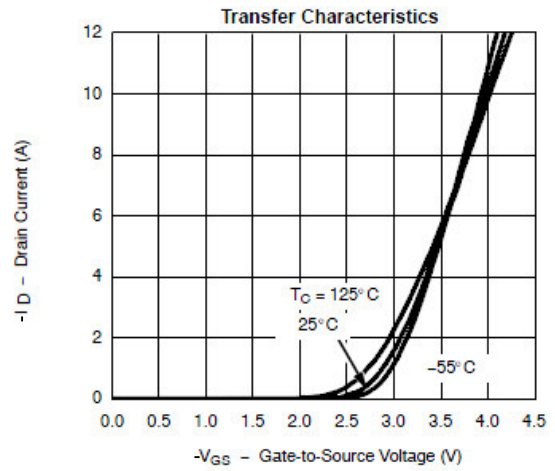
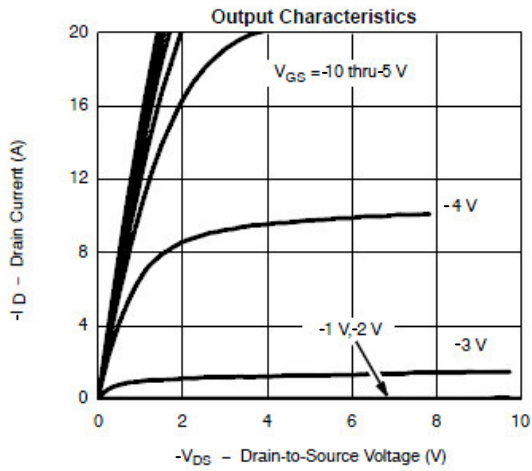
Symbol	Parameter	Typical	Unit
V _{DSS}	Drain-Source Voltage	-40	V
V _{GSS}	Gate -Source Voltage	±20	V
I _D	Continuous Drain Current(T _J =150°C)	T _A =25°C	-3.5
		T _A =70°C	-2.4
I _{DM}	Pulsed Drain Current	-12	A
I _S	Continuous Source Current(Diode Conduction)	-1.0	A
P _D	Power Dissipation	T _A =25°C	1.25
		T _A =70°C	0.8
T _J	Operating Junction Temperature	150	°C
T _{STG}	Storage Temperature Range	-55/150	°C
R _{θJA}	Thermal Resistance-Junction to Ambient	120	°C/W

Electrical Characteristics

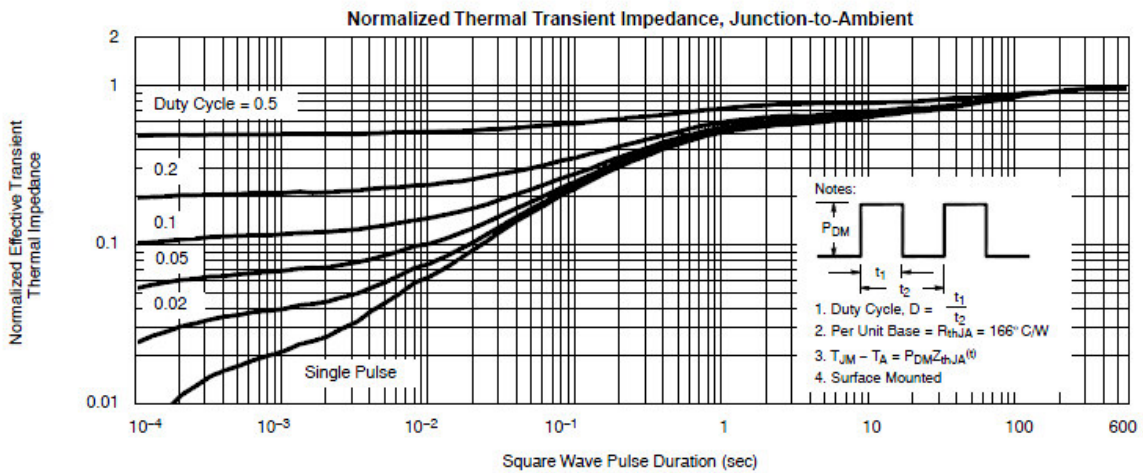
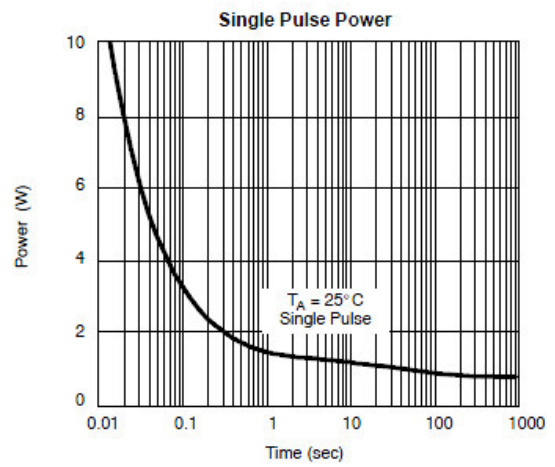
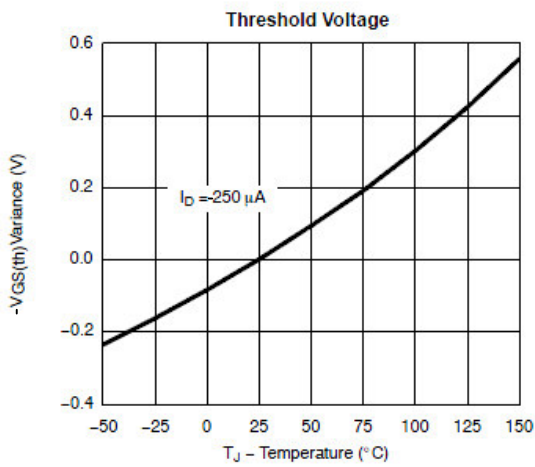
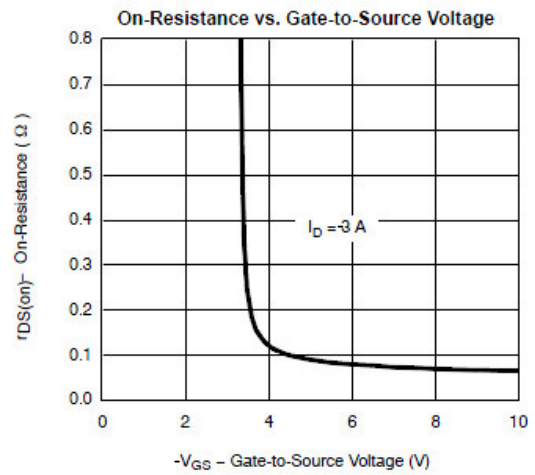
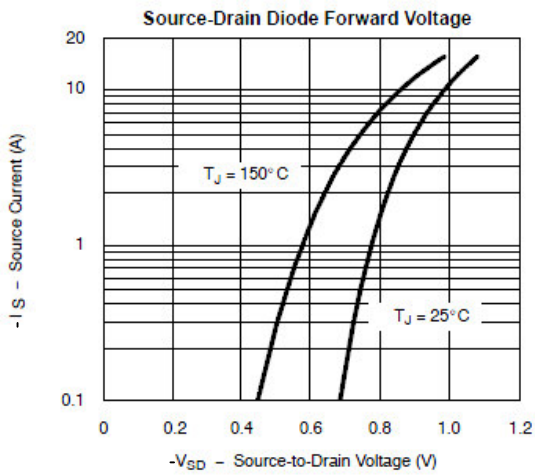
($T_A=25^\circ\text{C}$ unless otherwise noted)

Symbol	Parameter	Conditions	Min	Typ	Max	Unit
Static						
$V_{(BR)DSS}$	Drain-Source Breakdown Voltage	$V_{GS}=0V, I_D=-250\mu A$	-40			V
$V_{GS(th)}$	Gate Threshold Voltage	$V_{DS}=V_{GS}, I_D=-250\mu A$	-1.0		-2.0	
I_{GSS}	Gate Leakage Current	$V_{DS}=0V, V_{GS}=\pm 12V$			± 100	nA
I_{DSS}	Zero Gate Voltage Drain Current	$V_{DS}=-32V, V_{GS}=0V$			-1	μA
		$V_{DS}=-32V, V_{GS}=0V, T_J=85^\circ\text{C}$			-30	
$I_{D(on)}$	On-State Drain Current	$V_{DS}\leq -5V, V_{GS}=-10V$	-6			A
$R_{DS(on)}$	Drain-Source On-Resistance	$V_{GS}=-10V, I_D=-3.0A$		75	90	m Ω
		$V_{GS}=-4.5V, I_D=-2.4A$		90	120	
g_{fs}	Forward Transconductance	$V_{DS}=-5V, I_D=-3.0A$		8		S
V_{SD}	Diode Forward Voltage	$I_S=-1.25A, V_{GS}=0V$		-0.75	-1.3	V
Dynamic						
C_{iss}	Input Capacitance	$V_{DS}=-20V, V_{GS}=0V, I_D=1\text{MHz}$		480		pF
C_{oss}	Output Capacitance			90		
C_{rss}	Reverse Transfer Capacitance			70		
Q_g	Total Gate Charge	$V_{DS}=-20V, V_{GS}=-10V, I_D=-3.0A$		10	15	nC
Q_{gs}	Gate-Source Charge			2.0		
Q_{gd}	Gate-Drain Charge			3.0		
$t_{d(on)}$	Turn-On Time	$V_{DD}=-20V, R_L=20\Omega, I_D=-1.0A, V_{GEN}=-4.5V, R_G=6.0\Omega$		8	15	ns
t_r				15	25	
$t_{d(off)}$				25	40	
t_f				25	40	

Typical Performance Characteristics

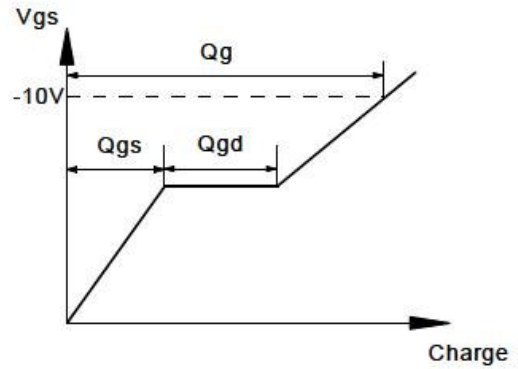
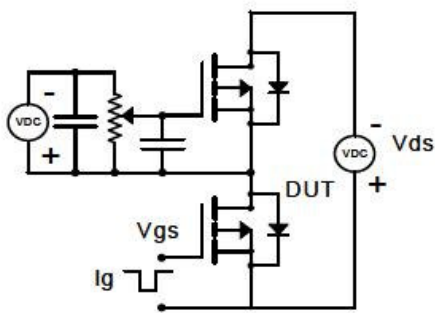


Typical Performance Characteristics (continue)

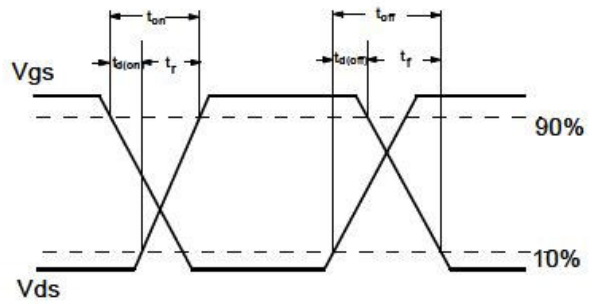
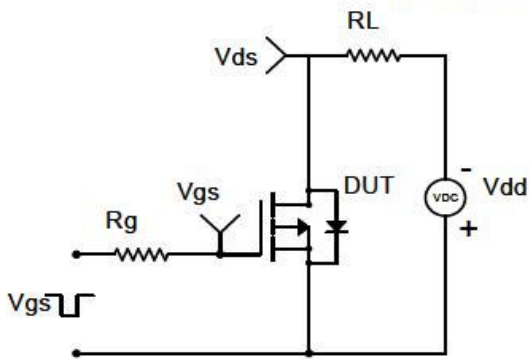


Typical Characteristics

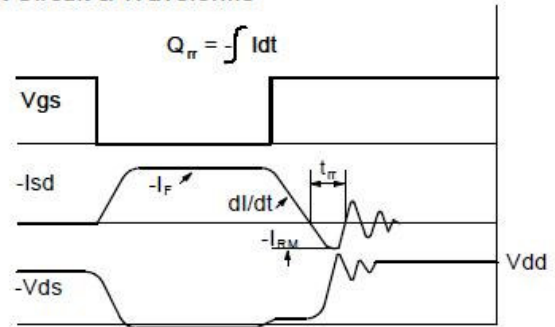
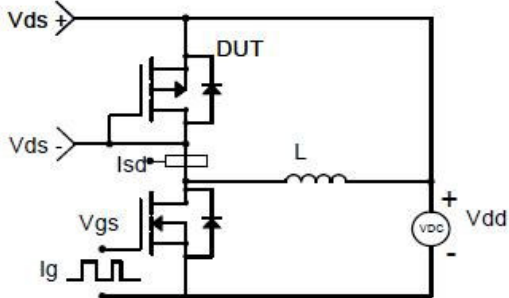
Gate Charge Test Circuit & Waveform



Resistive Switching Test Circuit & Waveforms

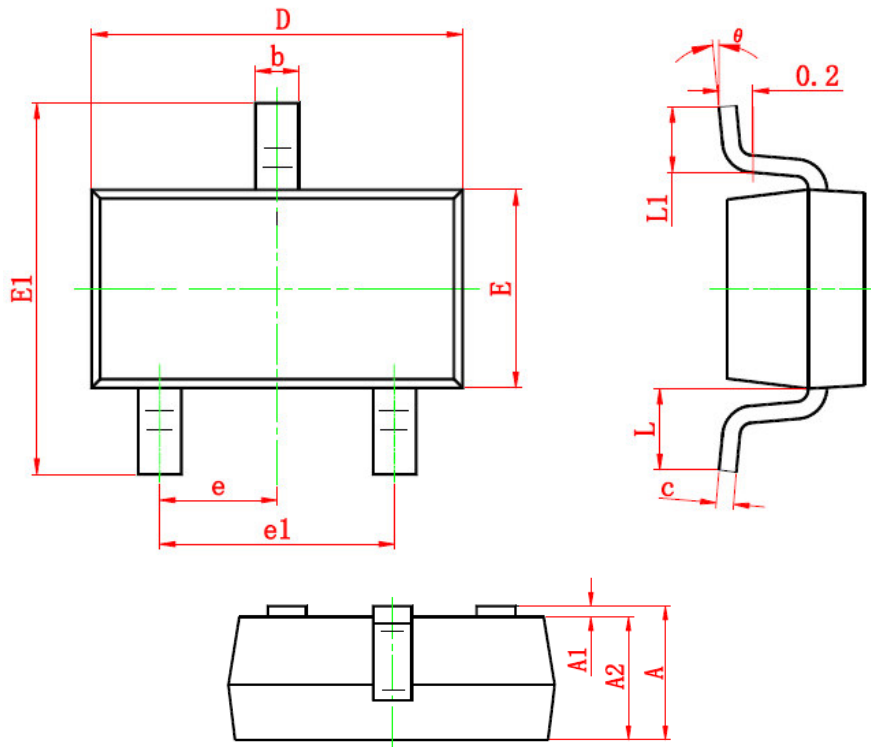


Diode Recovery Test Circuit & Waveforms



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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