

GSM4936WS

30V N-Channel Enhancement Mode MOSFET

Product Description

GSM4936WS, 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.

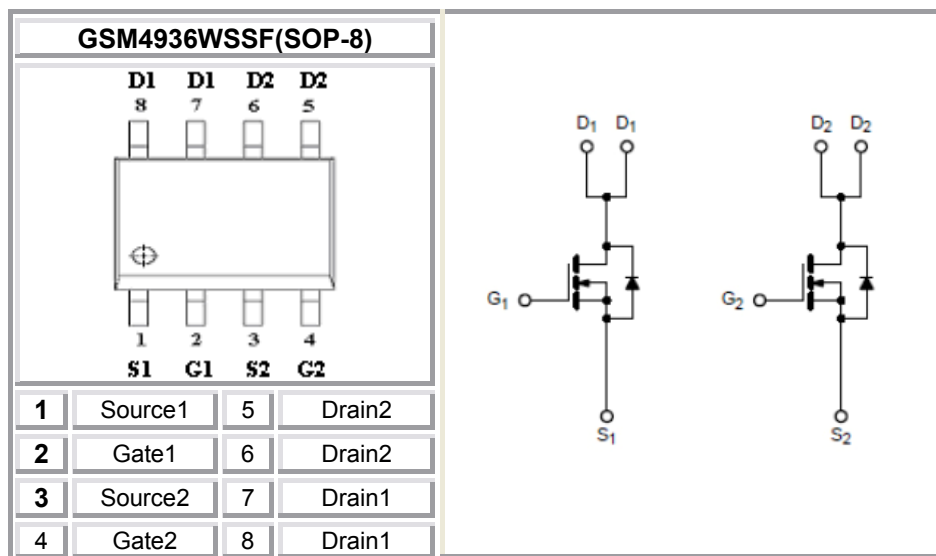
Features

- 30V/5.8A, $R_{DS(ON)}=36m\Omega@V_{GS}=10V$
- 30V/5.5A, $R_{DS(ON)}=46m\Omega@V_{GS}=4.5V$
- Super high density cell design for extremely low $R_{DS(ON)}$
- SOP-8P package design

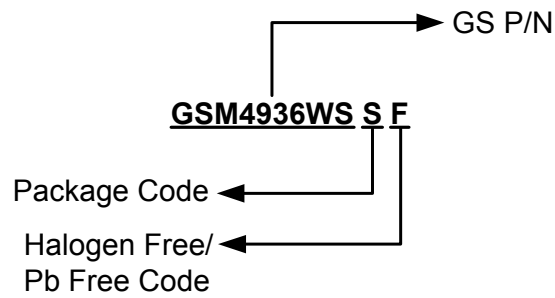
Applications

- Low Current DC/DC Conversion
- Load Switch
- CCFL Inverter
- Power Management in Notebook Computer

Packages & Pin Assignments

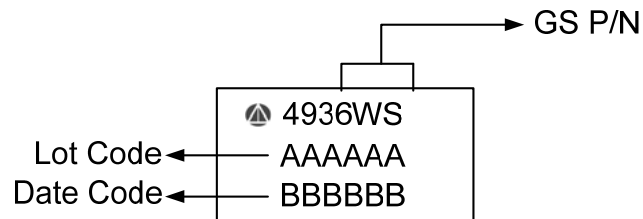


Ordering Information



Part Number	Package	Quantity Reel
GSM4936WSSF	SOP-8	2500 PCS

Marking Information



Absolute Maximum Ratings

(T_A=25°C unless otherwise noted)

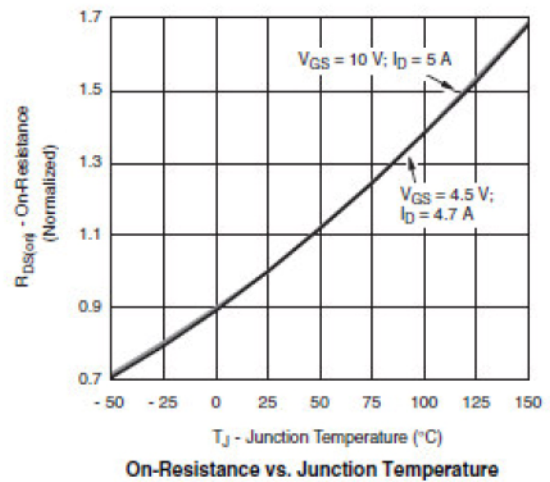
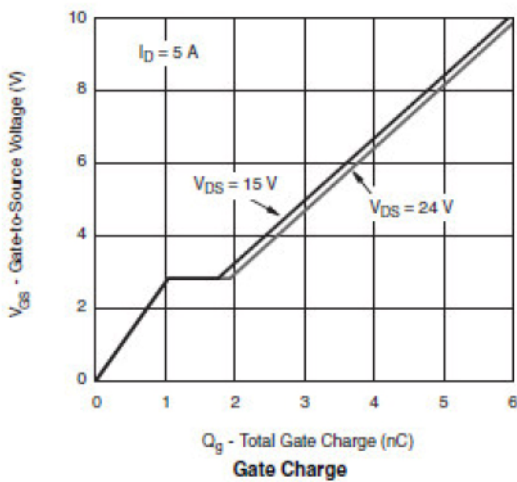
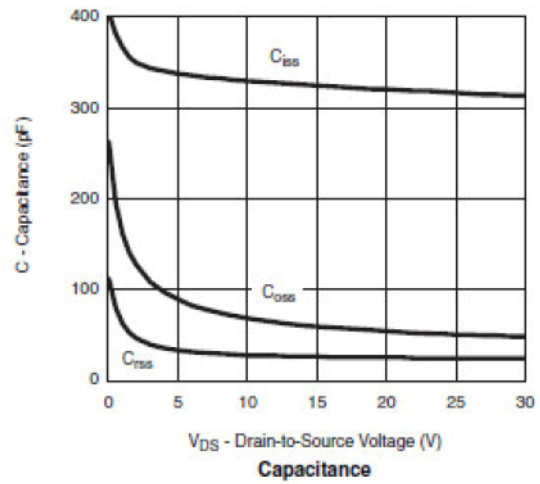
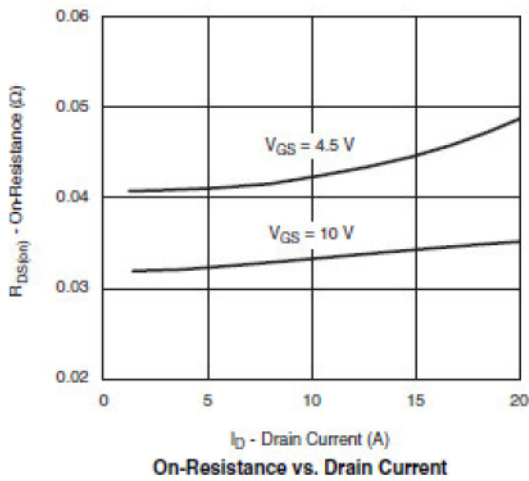
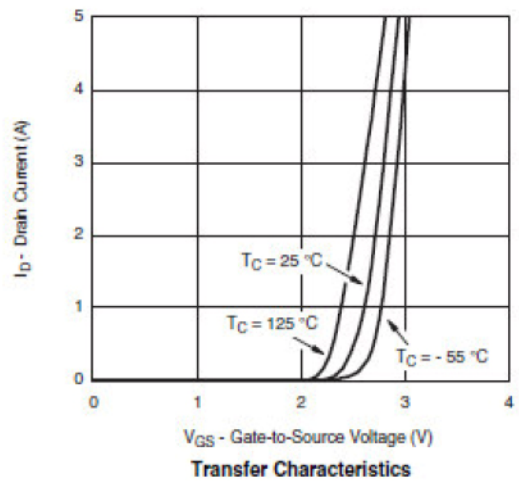
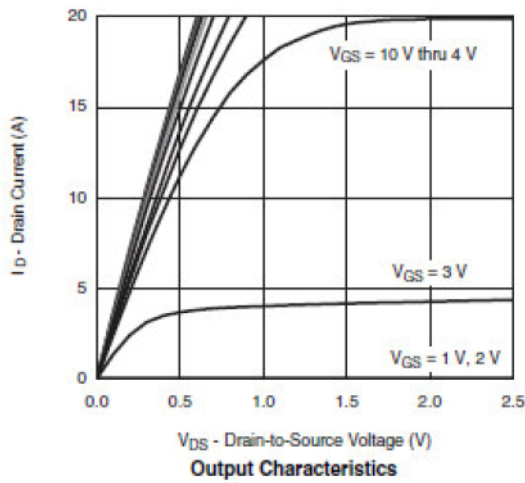
Symbol	Parameter	Typical	Unit
V _{DSS}	Drain-Source Voltage	30	V
V _{GSS}	Gate –Source Voltage	±20	V
I _D	Continuous Drain Current(T _J =150°C)	T _A =25°C	5.4
		T _A =70°C	4.0
I _{DM}	Pulsed Drain Current	20	A
I _S	Continuous Source Current(Diode Conduction)	1.5	A
P _D	Power Dissipation	T _A =25°C	2.8
		T _A =70°C	1.8
T _J	Operating Junction Temperature	150	°C
T _{STG}	Storage Temperature Range	-55/150	°C
R _{θJA}	Thermal Resistance-Junction to Ambient	62.5	°C/ W

Electrical Characteristics

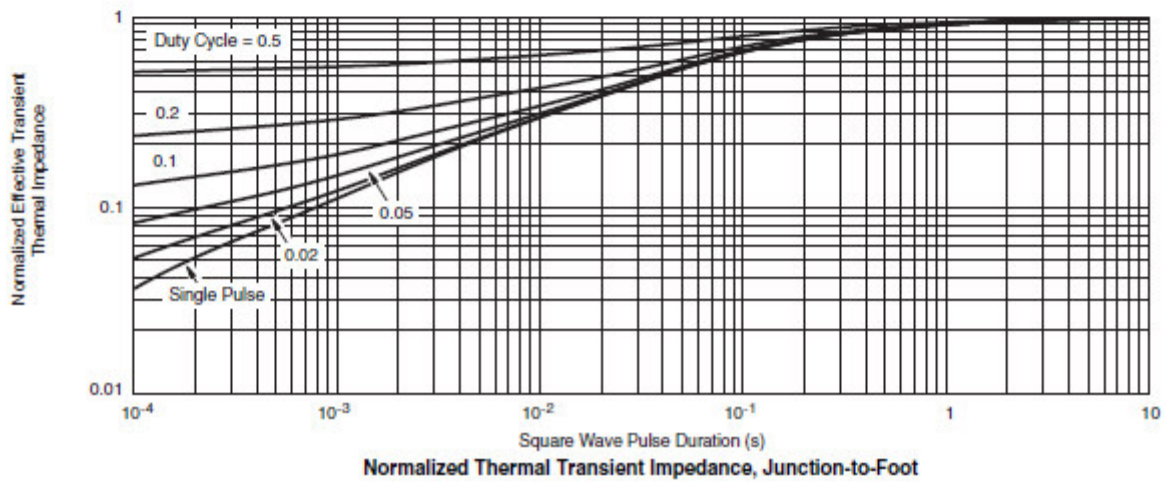
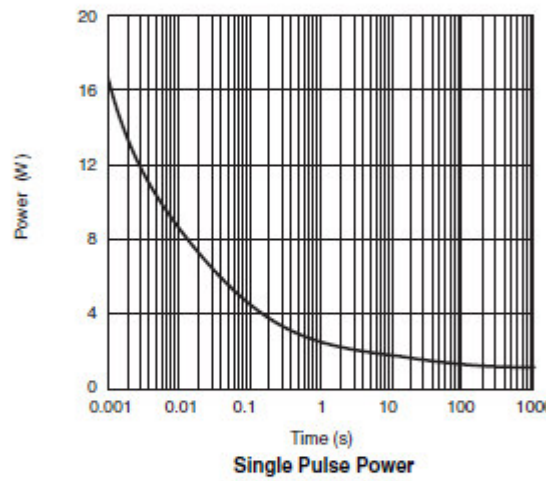
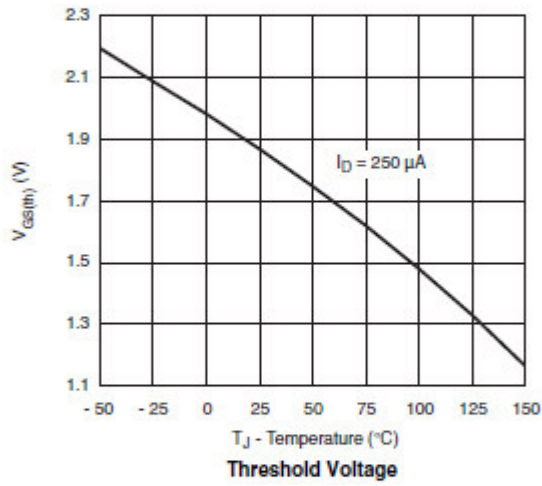
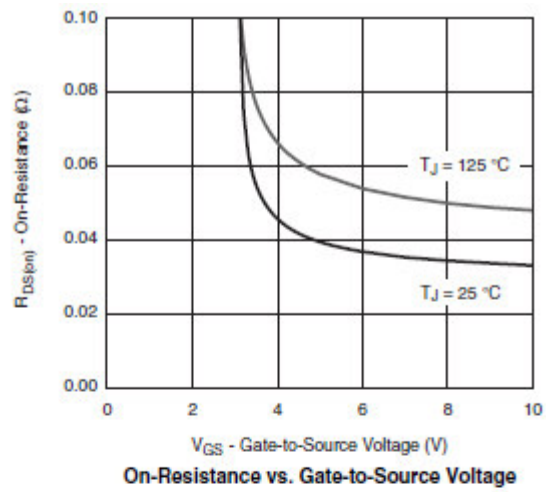
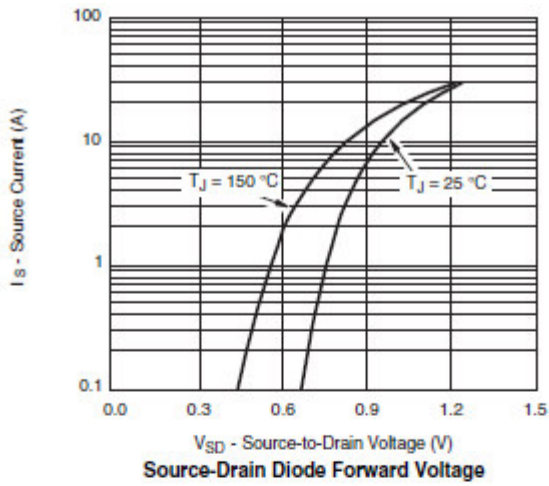
(T_A=25°C unless otherwise noted)

Symbol	Parameter	Conditions	Min.	Typ	Max.	Unit
Static						
V _{(BR)DSS}	Drain-Source Breakdown Voltage	V _{GS} =0V, I _D =250μA	30			V
V _{GS(th)}	Gate Threshold Voltage	V _{DS} =V _{GS} , I _D =250μA	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	μA
		V _{DS} =24V, V _{GS} =0V, T _J =85°C			30	
I _{D(on)}	On-State Drain Current	V _{DS} ≥5V, V _{GS} =4.5V	10			A
R _{DS(on)}	Drain-Source On-Resistance	V _{GS} =10V, I _D =5.0A		30	36	mΩ
		V _{GS} =4.5V, I _D =4.7A		40	46	
g _{fs}	Forward Transconductance	V _{DS} =15V, I _D =5.2A		13		S
V _{SD}	Diode Forward Voltage	I _S =1.6A, V _{GS} =0V		0.8	1.3	V
Dynamic						
C _{iss}	Input Capacitance	V _{DS} =20V, V _{GS} =0V, f=1MHz		700		pF
C _{oss}	Output Capacitance			75		
C _{rss}	Reverse Transfer Capacitance			45		
Q _g	Total Gate Charge	V _{DS} =20V, V _{GS} =4.5V, I _D =5.2A		8	12	nC
Q _{gs}	Gate-Source Charge			1.6		
Q _{gd}	Gate-Drain Charge			2.4		
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			28	40	
T _f				10	18	

Typical Performance Characteristics

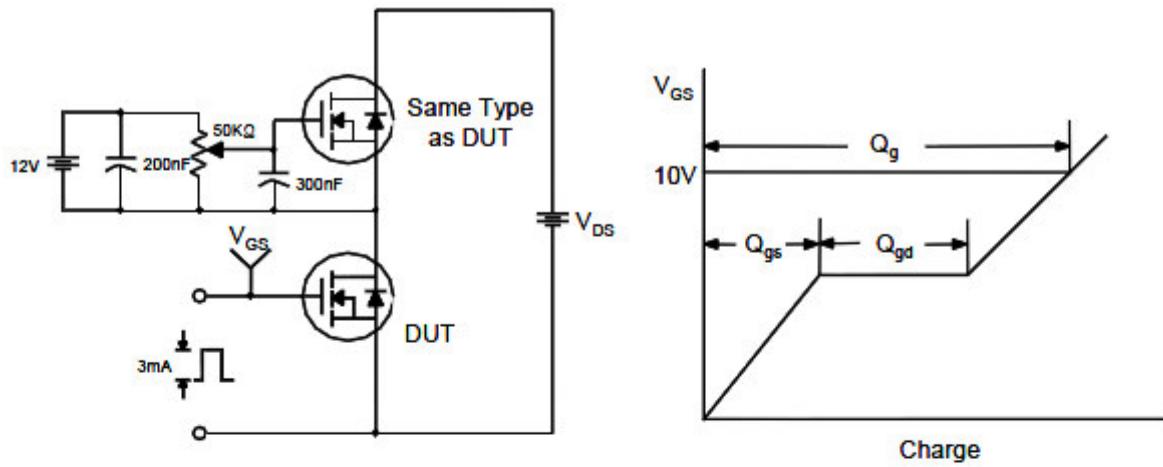


Typical Performance Characteristics (continue)

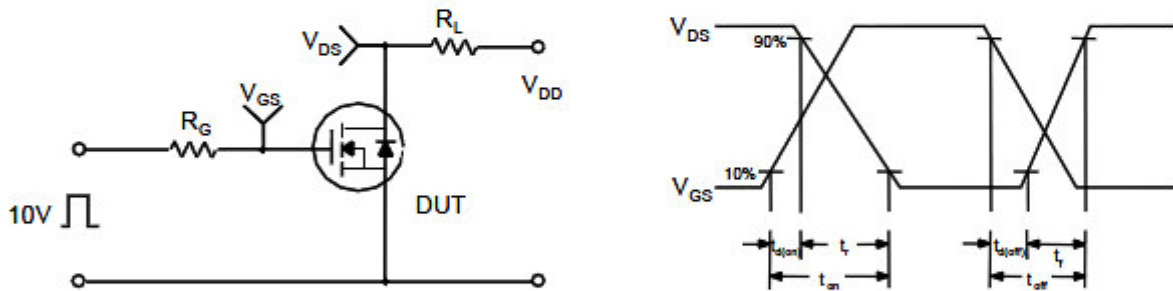


Typical Characteristics

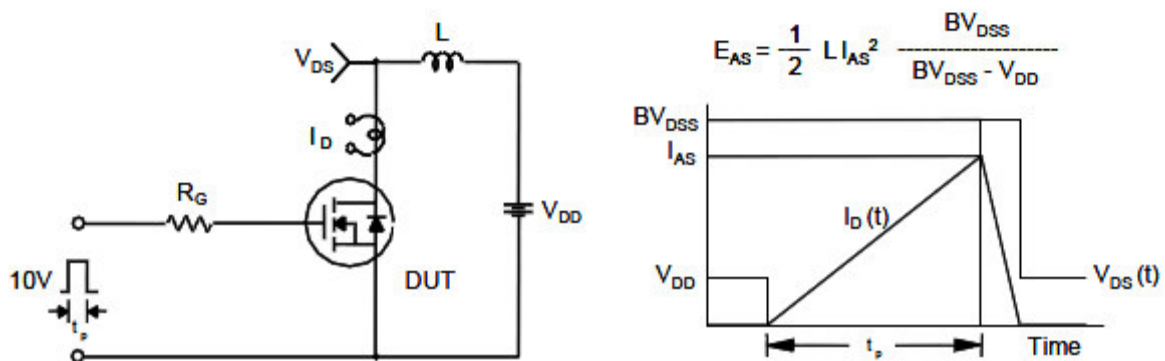
Gate Charge Test Circuit & Waveform



Resistive Switching Test Circuit & Waveforms

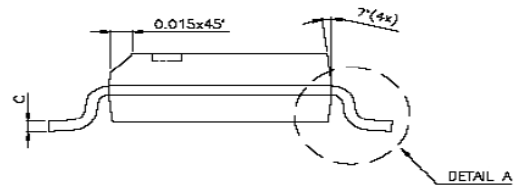
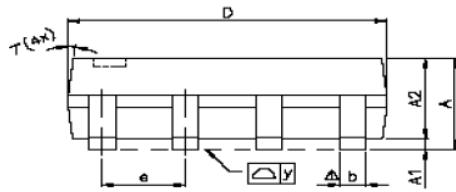
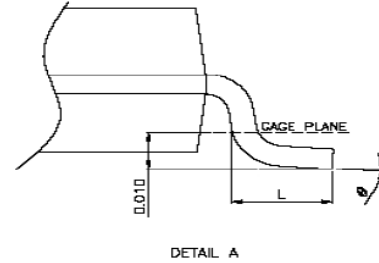
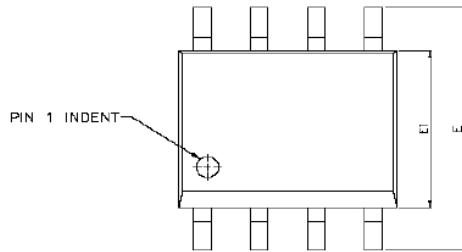


Unclamped Inductive Switching Test Circuit & Waveforms



Package Dimension

SOP-8P PLASTIC PACKAGE







Dimensions						
SYMBOL	Millimeters			Inches		
	MIN	NOM	MAX	MIN	NOM	MAX
A	1.47	1.60	1.73	0.058	0.063	0.068
A1	0.10	-	0.25	0.004	-	0.010
A2	-	1.45	-	-	0.057	-
b	0.33	0.41	0.51	0.013	0.016	0.020
C	0.19	0.20	0.25	0.0075	0.008	0.0098
D	4.80	4.85	4.95	0.189	0.191	0.195
E	5.80	6.00	6.20	0.228	0.236	0.244
E1	3.80	3.90	4.00	0.150	0.154	0.157
e	-	1.27	-	-	0.050	-
L	0.38	0.71	1.27	0.015	0.028	0.050
Δy	-	-	0.076	-	-	0.003
θ	0°	-	8°	0°	-	8°


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