

GSM4440W

60V N-Channel Enhancement Mode MOSFET

Product Description

GSM4440W, 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.

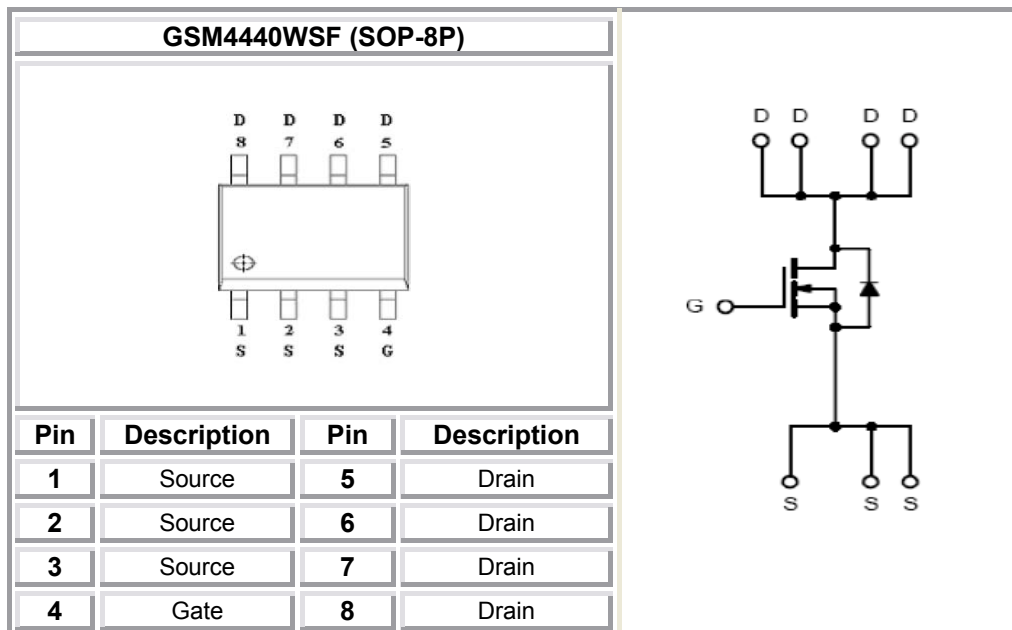
Features

- 60V/6.8A, $R_{DS(ON)}=42m\Omega@V_{GS}=10V$
- 60V/5.6A, $R_{DS(ON)}=50m\Omega@V_{GS}=4.5V$
- Super high density cell design for extremely low $R_{DS(ON)}$
- SOP-8P package design

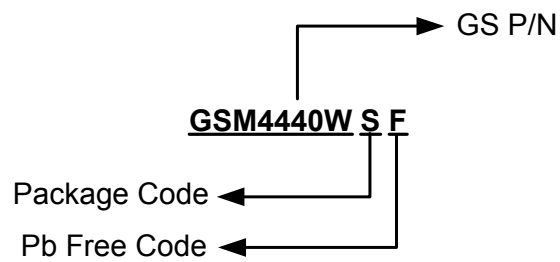
Applications

- Motor and Load Control
- Power Management in White LED System
- Push Pull Converter
- LCD TV Inverter & AD/DC Inverter Systems.

Packages & Pin Assignments

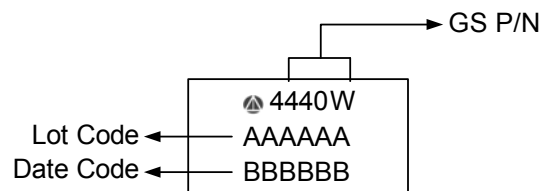


Ordering Information



Part Number	Package	Quantity Reel
GSM4440WSF	SOP-8P	2500 PCS

Marking Information



Absolute Maximum Ratings

T_A=25°C unless otherwise noted

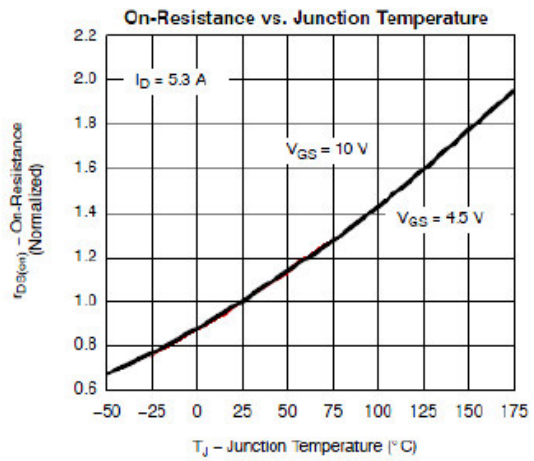
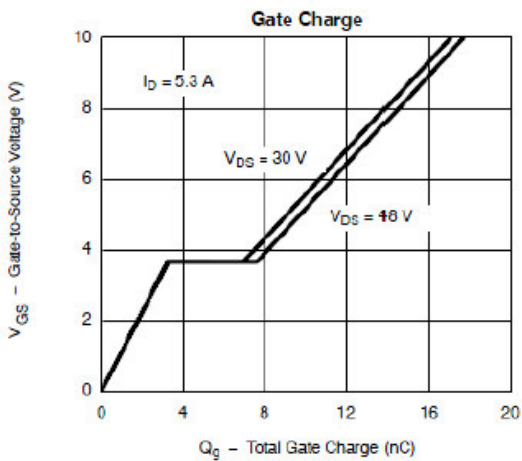
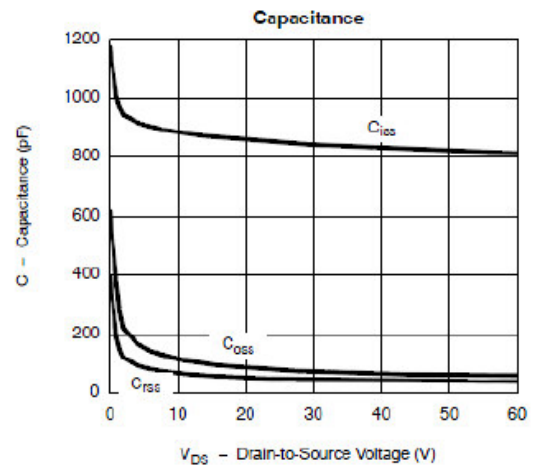
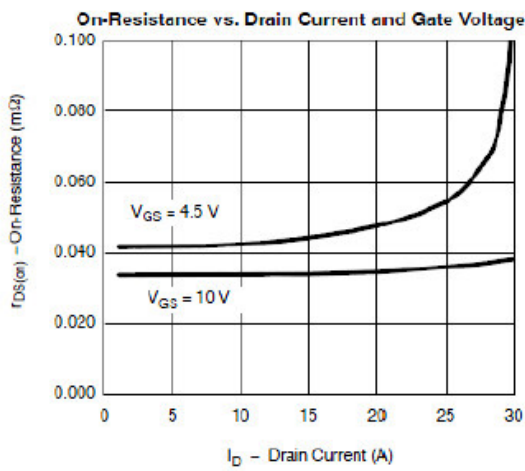
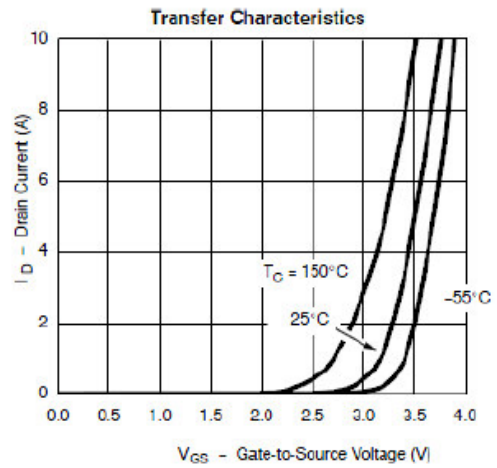
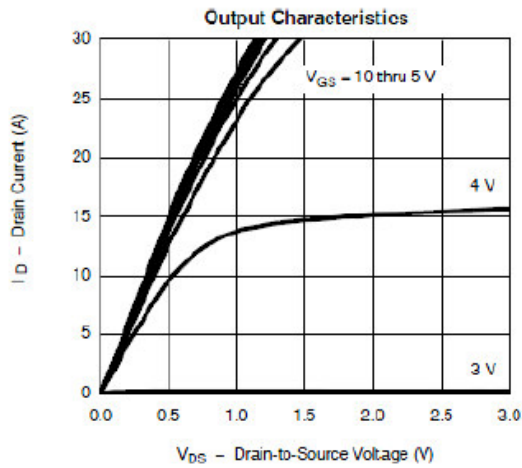
Symbol	Parameter	Typical	Unit	
V _{DSS}	Drain-Source Voltage	60	V	
V _{GSS}	Gate -Source Voltage	±20	V	
I _D	Continuous Drain Current(T _J =150°C)	T _A =25°C	6.8	A
		T _A =70°C	5.6	
I _{DM}	Pulsed Drain Current	30	A	
I _S	Continuous Source Current(Diode Conduction)	1.5	A	
P _D	Power Dissipation	T _A =25°C	2.8	W
		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

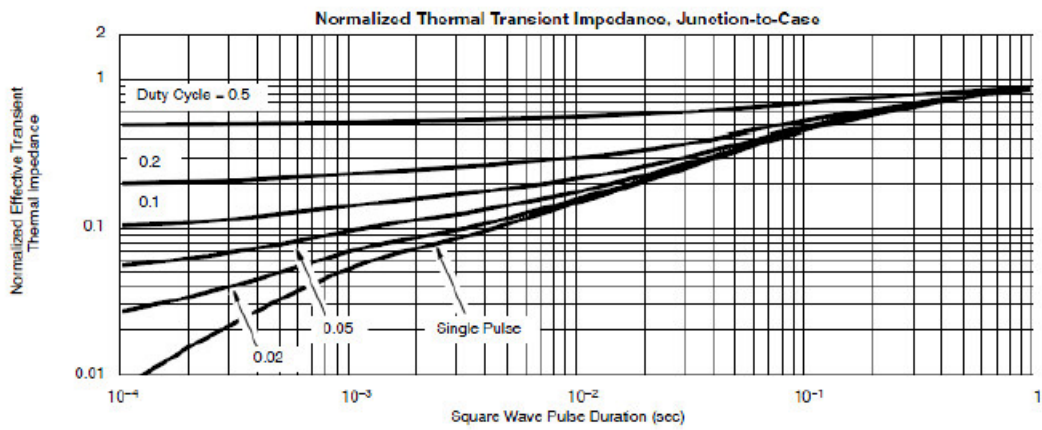
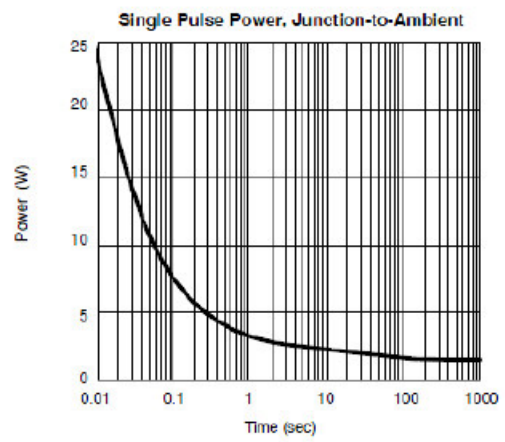
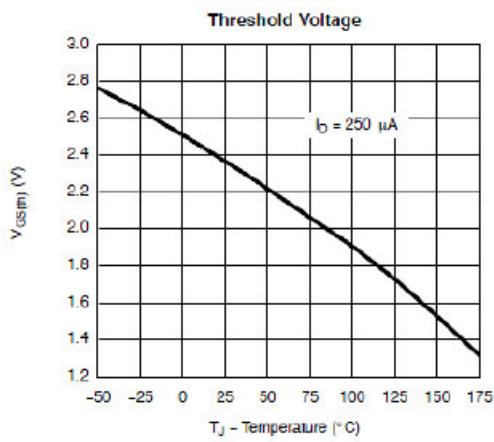
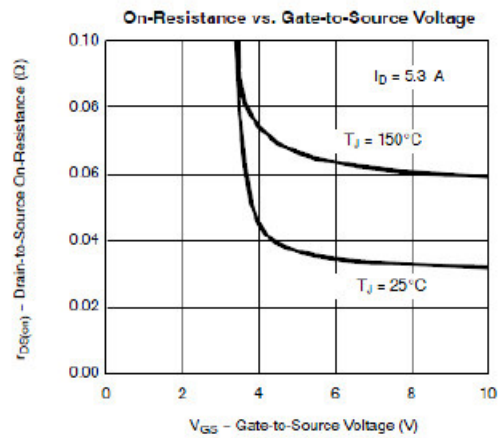
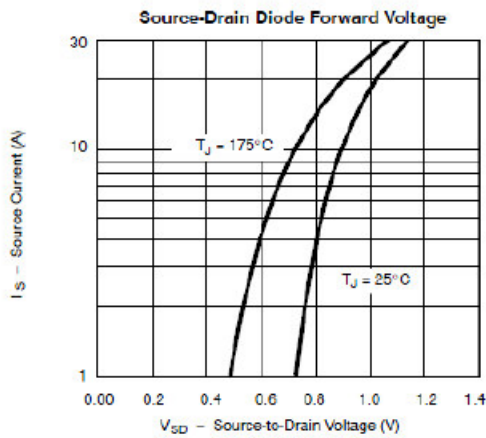
T_A=25°C unless otherwise noted

Symbol	Parameter	Conditions	Min	Typ	Max	Unit
Static						
V _{(BR)DSS}	Drain-Source Breakdown Voltage	V _{GS} =0V, I _D =250uA	60			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} =60V, V _{GS} =0V			1	uA
		V _{DS} =60V, V _{GS} =0V, T _J =85°C			5	
I _{D(on)}	On-State Drain Current	V _{DS} ≥5V, V _{GS} =4.5V	30			A
R _{DS(on)}	Drain-Source On-Resistance	V _{GS} =10V, I _D =6.8A		38	42	mΩ
		V _{GS} =4.5V, I _D =5.6A		42	50	
g _{FS}	Forward Transconductance	V _{DS} =15V, I _D =5.3A		24		S
V _{SD}	Diode Forward Voltage	I _S =2.0A, V _{GS} =0V		0.8	1.2	V
Dynamic						
C _{iss}	Input Capacitance	V _{DS} =30V, V _{GS} =0V, f=1MHz		890		pF
C _{oss}	Output Capacitance			85		
C _{rss}	Reverse Transfer Capacitance			48		
Q _g	Total Gate Charge	V _{DS} =30V, V _{GS} =5V, I _D =5.6A		10	15	nC
Q _{gs}	Gate-Source Charge			3.5		
Q _{gd}	Gate-Drain Charge			3.6		
t _{d(on)}	Turn-On Time	V _{DD} =30V, R _L =6.8Ω, I _D =5.0A, V _{GEN} =4.5V, R _G =6Ω		10	15	ns
t _r				12	20	
t _{d(off)}	Turn-Off Time			25	35	
t _f				10	15	

Typical Performance Characteristics

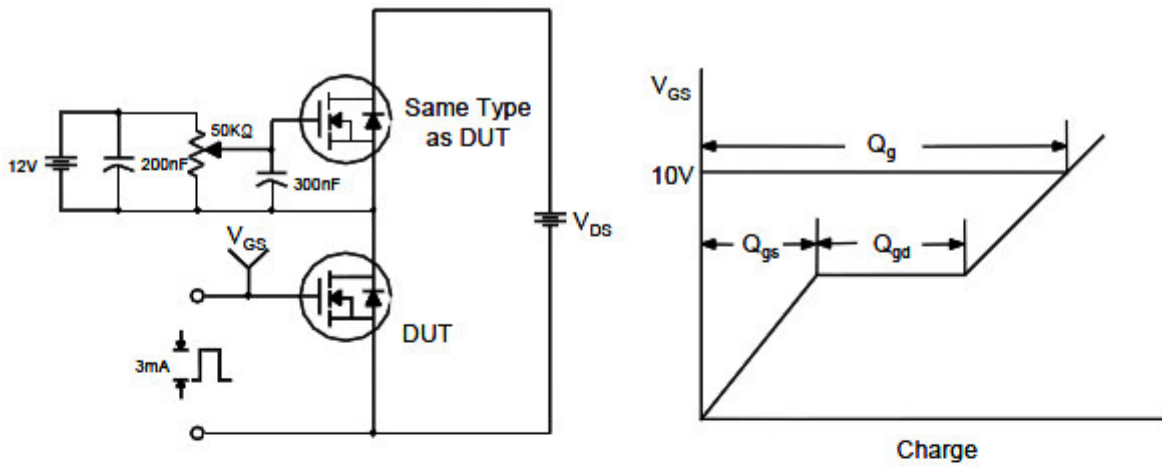


Typical Performance Characteristics (continue)

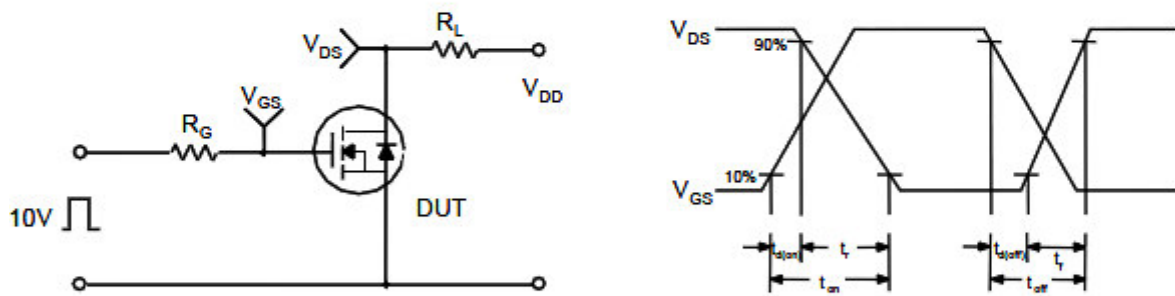


Typical Performance Characteristics (continue)

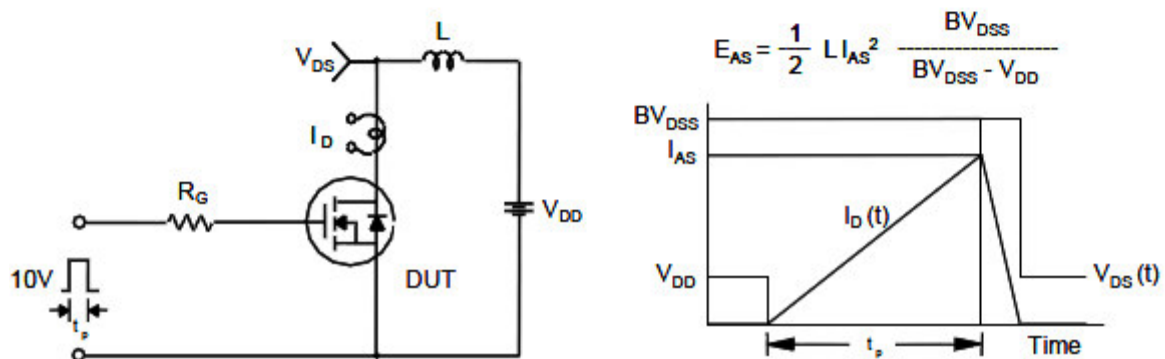
Gate Charge Test Circuit & Waveform



Resistive Switching Test Circuit & Waveforms

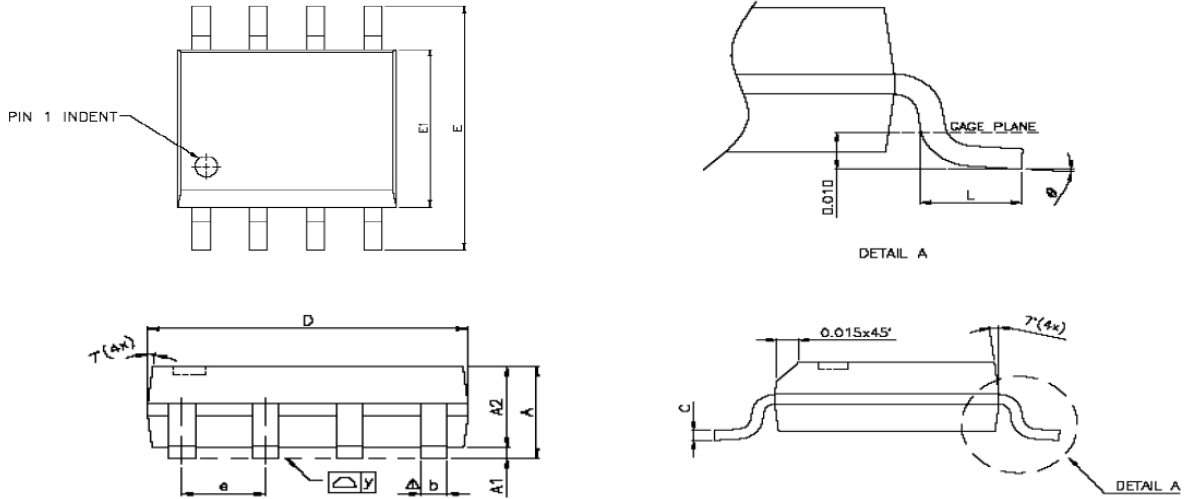


Unclamped Inductive Switching Test Circuit & Waveforms



Package Dimension

SOP-8P







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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