

GSM9435WS

30V P-Channel Enhancement Mode MOSFET

Product Description

GSM9435WS, 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.

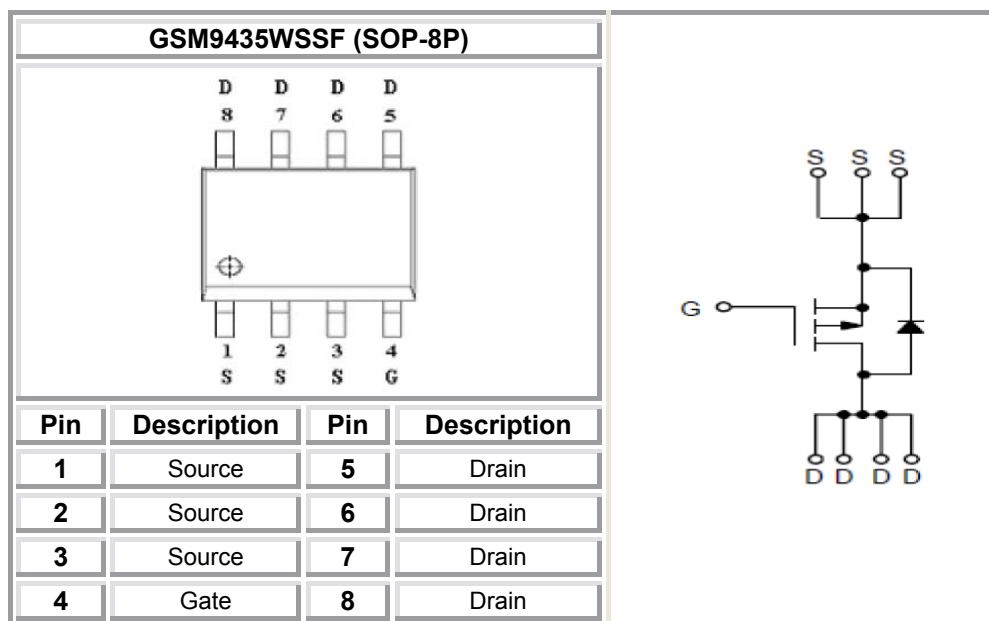
Features

- $-30V/-5.3A, R_{DS(ON)}=58m\Omega@V_{GS}=-10V$
- $-30V/-4.2A, R_{DS(ON)}=78m\Omega@V_{GS}=-4.5V$
- Super high density cell design for extremely low $R_{DS(ON)}$
- SOP-8P package design

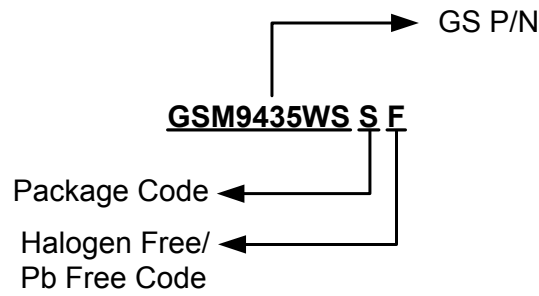
Applications

- LED Display
- Load Switch
- CCFL Inverter
- Power Management in Notebook Computer

Packages & Pin Assignments

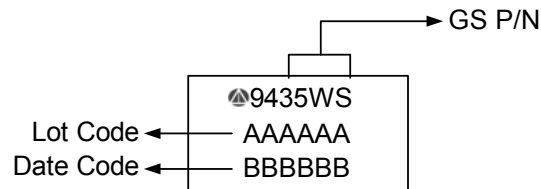


Ordering Information



Part Number	Package	Quantity Reel
GSM9435WSSF	SOP-8P	2500 PCS

Marking Information



Absolute Maximum Ratings

T_A=25°C unless otherwise noted

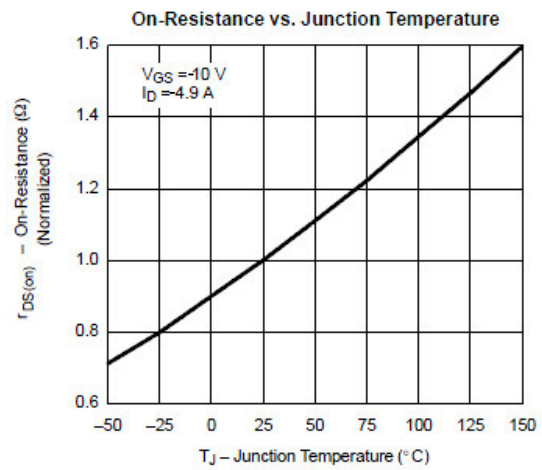
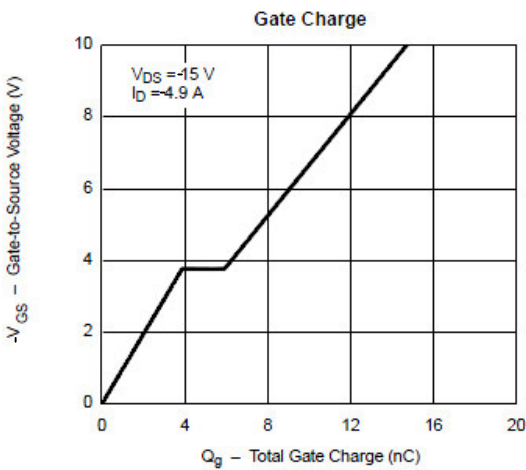
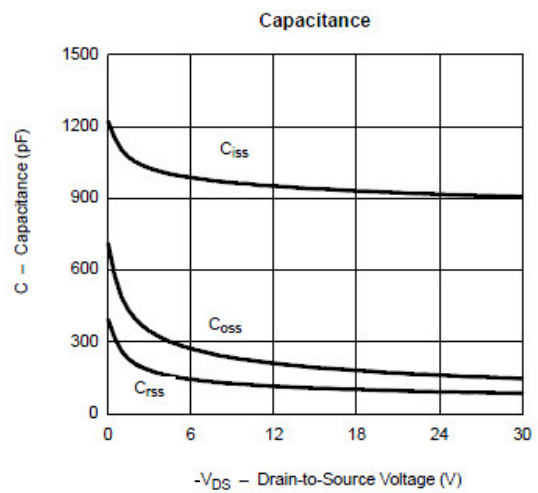
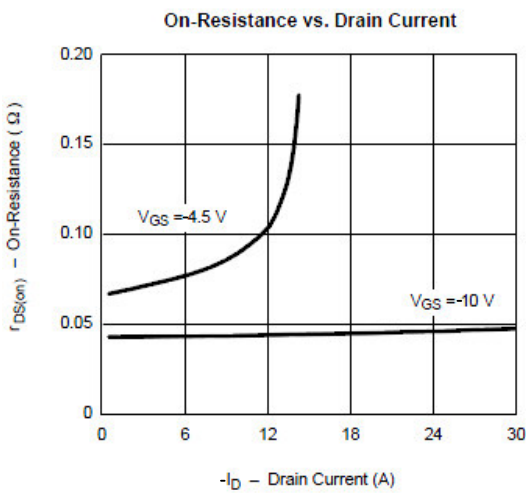
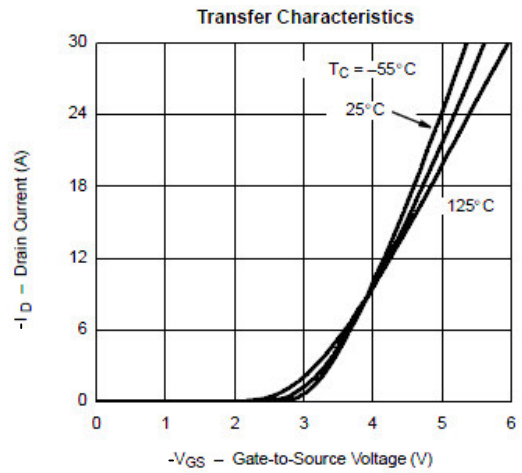
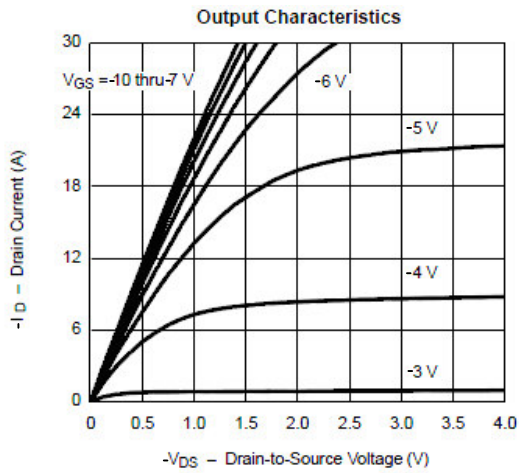
Symbol	Parameter	Typical	Unit
V _{DSS}	Drain-Source Voltage	-30	V
V _{GSS}	Gate -Source Voltage	±20	V
I _D	Continuous Drain Current(T _J =150°C)	T _A =25°C	A
		T _A =70°C	
I _{DM}	Pulsed Drain Current	-20	
I _S	Continuous Source Current(Diode Conduction)	-2	
P _D	Power Dissipation	T _A =25°C	W
		T _A =70°C	
T _J	Operating Junction Temperature	150	°C
T _{STG}	Storage Temperature Range	-55/150	°C
R _{θJA}	Thermal Resistance-Junction to Ambient	62.5	°C/ W

Electrical Characteristics

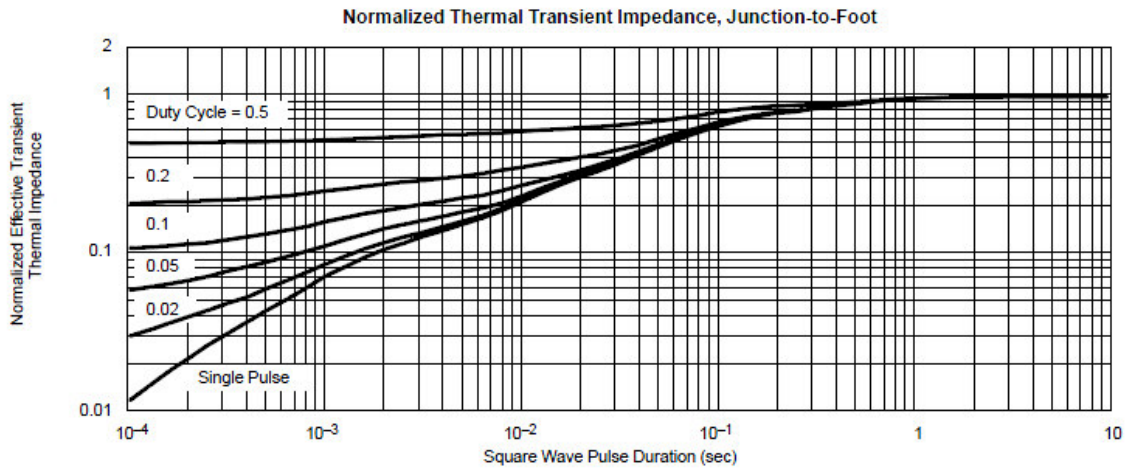
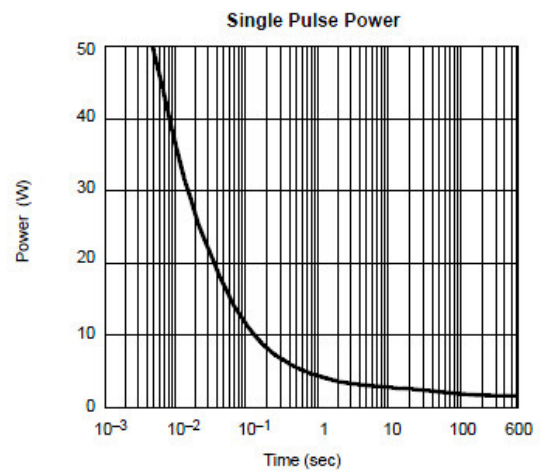
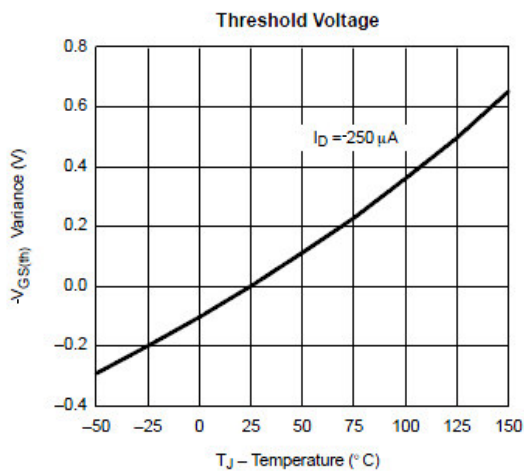
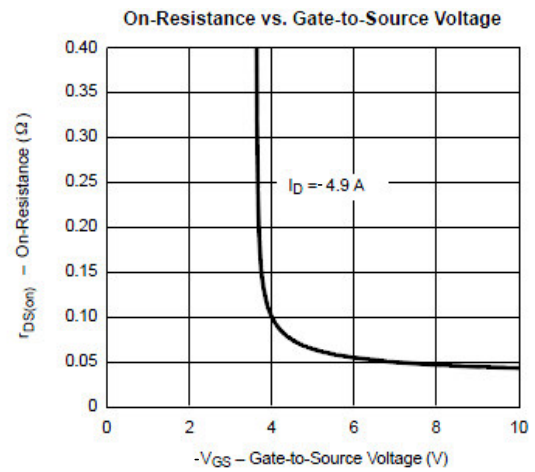
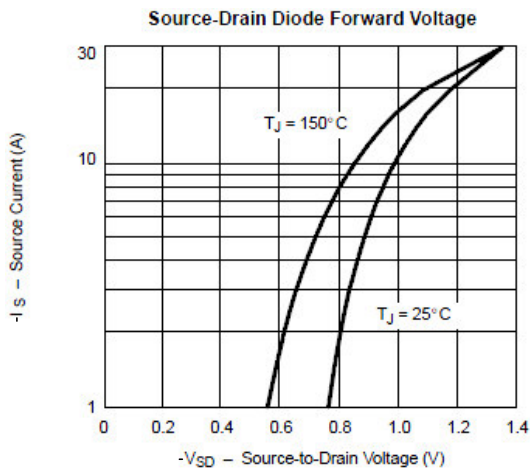
T_A=25°C unless otherwise noted

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	-1.0		-2.5		
I _{GSS}	Gate Leakage Current	V _{DS} =0V, V _{GS} =±25V			±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} ≤ -10V, V _{GS} =-10V	-20			A	
		V _{DS} ≤ -5V, V _{GS} =-4.5V	-5				
R _{DS(on)}	Drain-Source On-Resistance	V _{GS} =-10V, I _D =-5.3A		42	58	mΩ	
		V _{GS} =-4.5V, I _D =-4.2A		62	78		
g _{fs}	Forward Transconductance	V _{DS} =-15V, I _D =-4.6A		10		S	
V _{SD}	Diode Forward Voltage	I _S =-1.7A, V _{GS} =0V		-0.7	-1.3	V	
Dynamic							
C _{iss}	Input Capacitance	V _{DS} =-15V, V _{GS} =0V, f=1MHz		500		pF	
C _{oss}	Output Capacitance			100			
C _{rss}	Reverse Transfer Capacitance			55			
Q _g	Total Gate Charge	V _{DS} =-15V, V _{GS} =-10V, I _D =-5.0A		10	18	nC	
Q _{gs}	Gate-Source Charge			1.6			
Q _{gd}	Gate-Drain Charge			3.0			
td(on)	Turn-On Time	V _{DD} =-15V, R _L =15Ω, I _D =-1.0A, V _{GEN} =-10V, R _G =6Ω		8	18	ns	
tr					8		18
td(off)	Turn-Off Time				25		50
tf					25		35

Typical Performance Characteristics

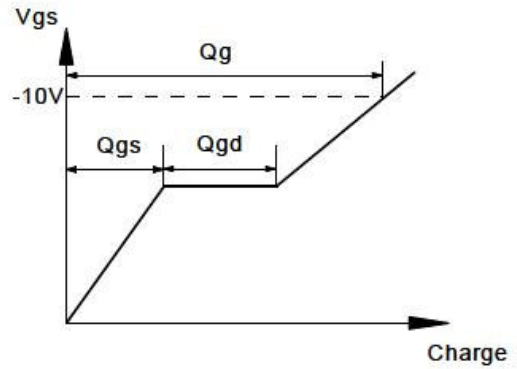
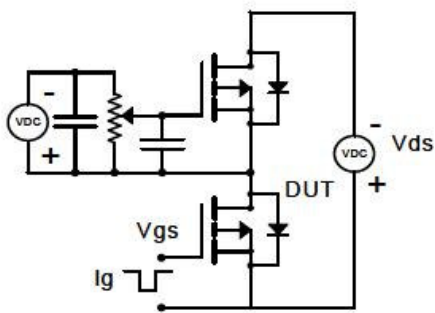


Typical Performance Characteristics (continue)

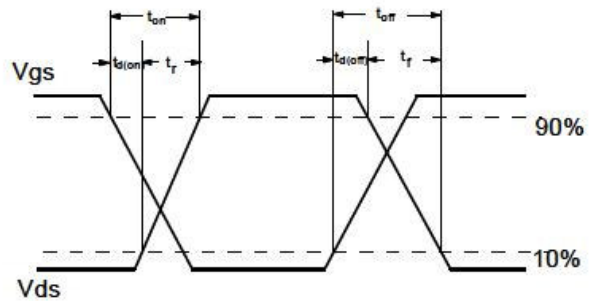
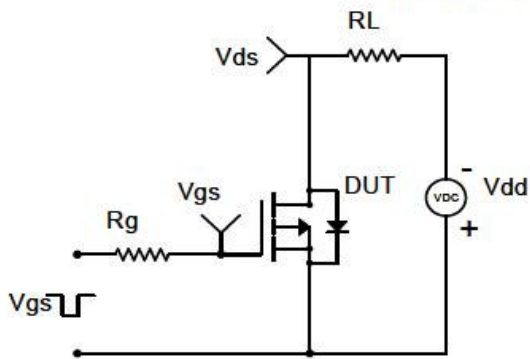


Typical Performance Characteristics (continue)

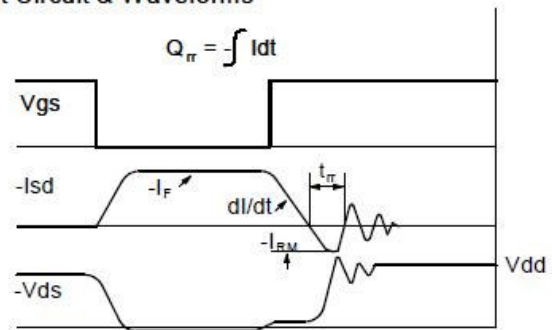
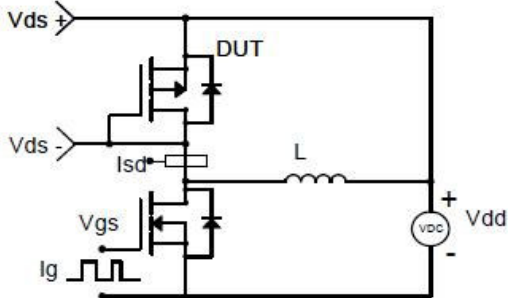
Gate Charge Test Circuit & Waveform



Resistive Switching Test Circuit & Waveforms

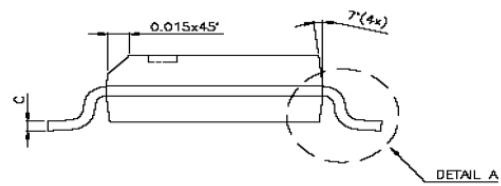
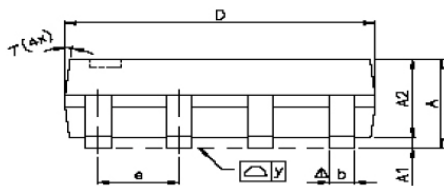
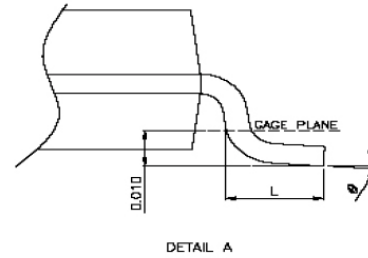
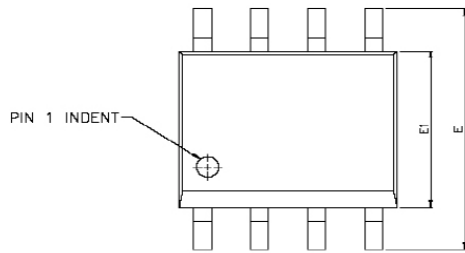


Diode Recovery Test Circuit & Waveforms



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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CONTACT US

GS Headquarter	
	4F.,No.43-1,Lane11,Sec.6,Minquan E.Rd Neihu District Taipei City 114, Taiwan (R.O.C)
	886-2-2657-9980
	886-2-2657-3630
	sales_twn@gs-power.com

Wu-Xi Branch	
	No.21 Changjiang Rd., WND, Wuxi, Jiangsu, China (INFO. &. TECH. Science Park Building A 210 Room)
	86-510-85217051
	86-510-85211238
	sales_cn@gs-power.com

RD Division	
	824 Bolton Drive Milpitas. CA. 95035
	1-408-457-0587