

GSM7923WS

30V P-Channel Enhancement Mode MOSFET

Product Description

GSM7923WS, 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, such as smart phone and notebook computer and other battery powered circuits, and low in-line power loss are needed in commercial industrial surface mount applications.

Features

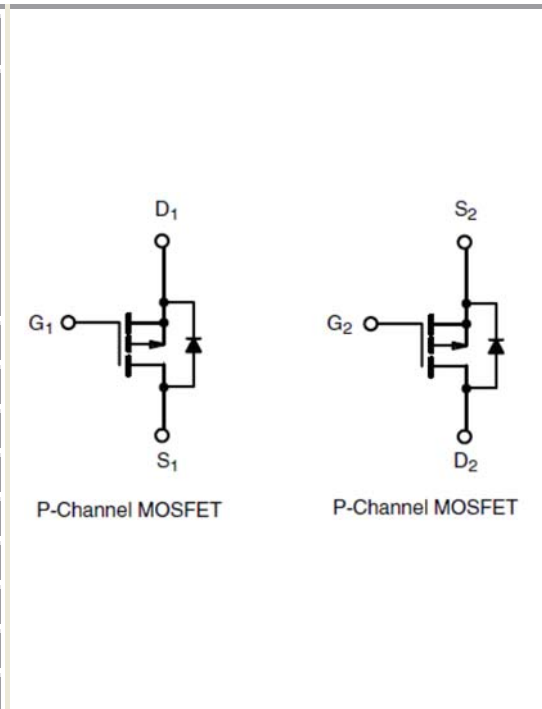
- -30V/-8A, $R_{DS(ON)}=55m\Omega@V_{GS}=-10V$
- -30V/-6A, $R_{DS(ON)}=75m\Omega@V_{GS}=-4.5V$
- -30V/-4A, $R_{DS(ON)}=95m\Omega@V_{GS}=-2.5V$
- Super high density cell design for extremely low $R_{DS(ON)}$
- Exceptional on-resistance and maximum DC current capability
- DFN3X3-8L package design

Applications

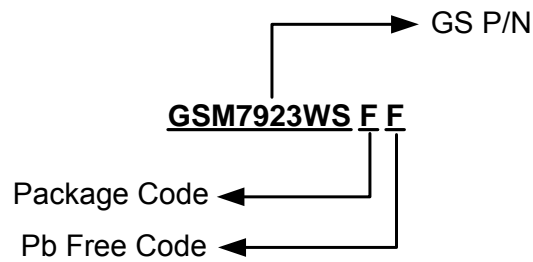
- DC/DC Converter
- Load Switch
- DC FAN

Packages & Pin Assignments

GSM7923WSFF (DFN3X3-8L)	
<p style="text-align: center;">D2 D2 D1 D1 5 6 7 8 4 3 2 1 G2 S2 G1 S1 BOTTOM VIEW</p>	
Pin	Description
1	Source 1
2	Gate 1
3	Source 2
4	Gate 2
5	Drain 2
6	Drain 2
7	Drain 1
8	Drain 1

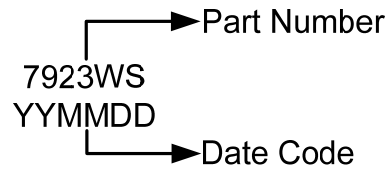


Ordering Information



Part Number	Package	Quantity Reel
GSM7923WSFF	DFN3X3-8L	5000 PCS

Marking Information



Absolute Maximum Ratings

T_A=25°C Unless otherwise noted

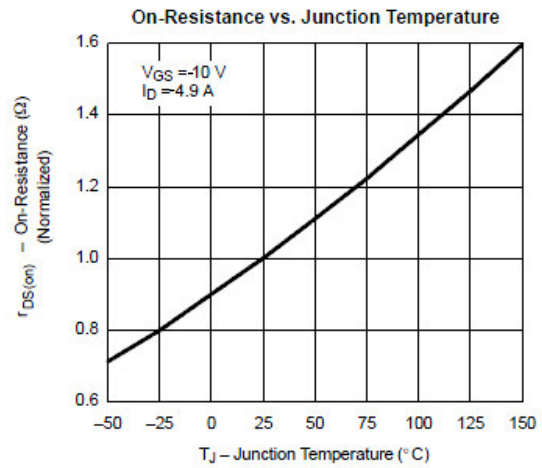
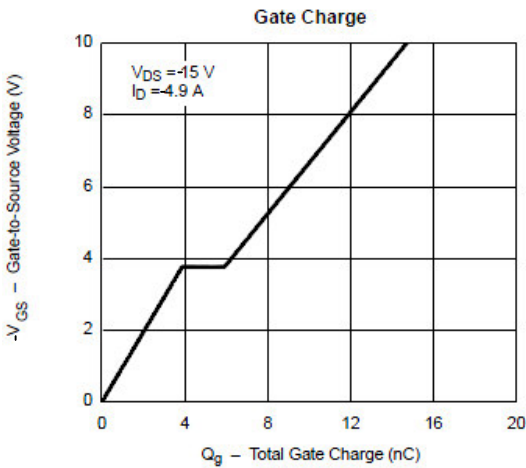
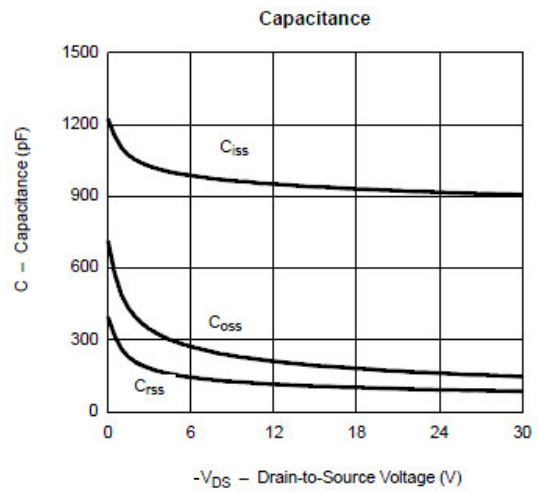
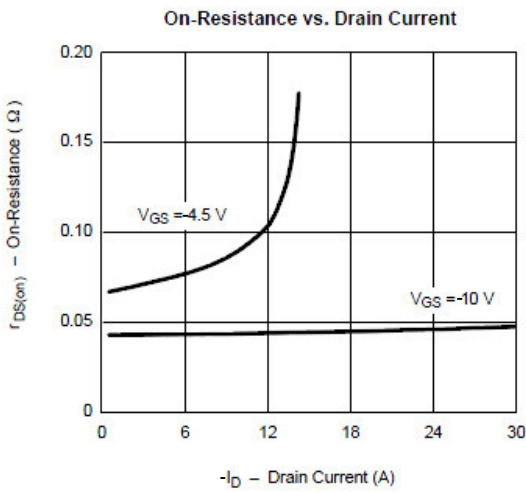
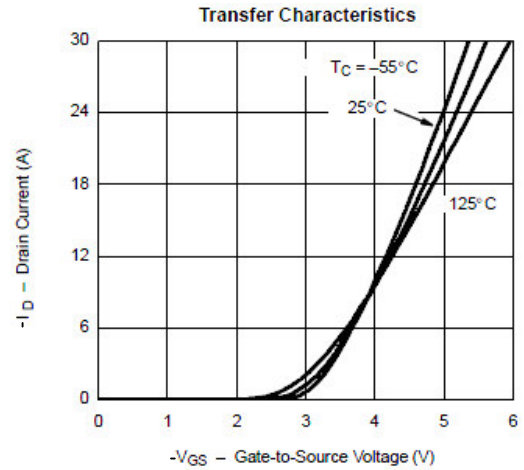
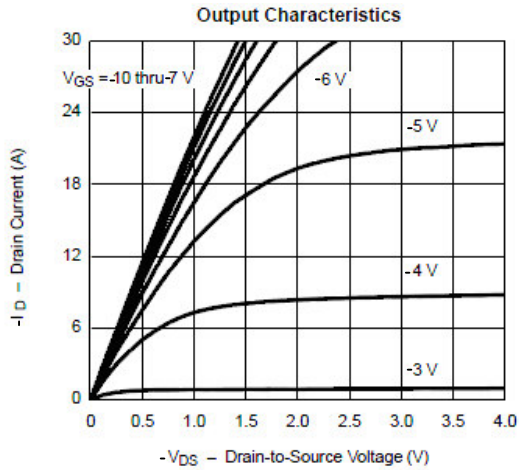
Symbol	Parameter	Typical	Unit
V _{DSS}	Drain-Source Voltage	-30	V
V _{GSS}	Gate -Source Voltage	±12	V
I _D	Continuous Drain Current (T _J =150°C)	T _A =25°C	-8.0
		T _A =70°C	-6.0
I _{DM}	Pulsed Drain Current	-30	A
I _S	Continuous Source Current (Diode Conduction)	-10	A
P _D	Power Dissipation	T _A =25°C	1.8
		T _A =70°C	1.2
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

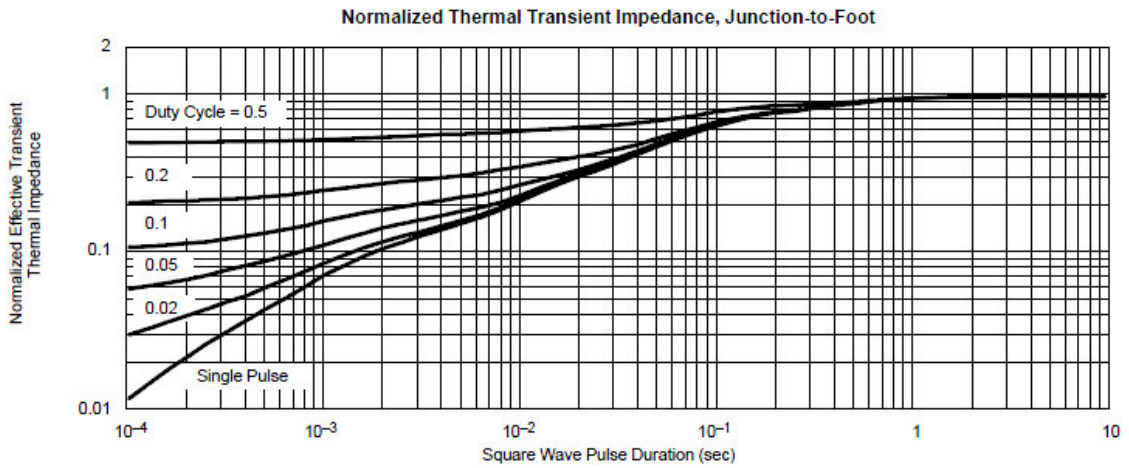
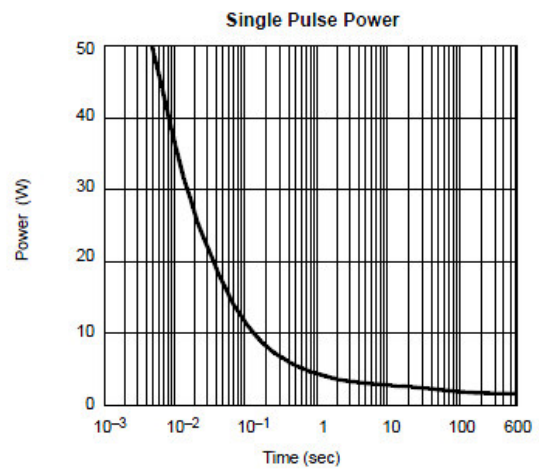
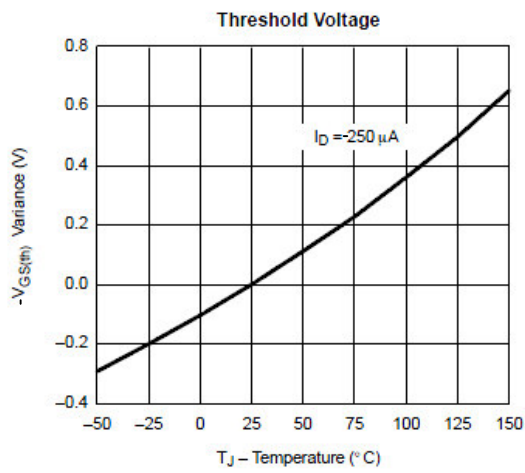
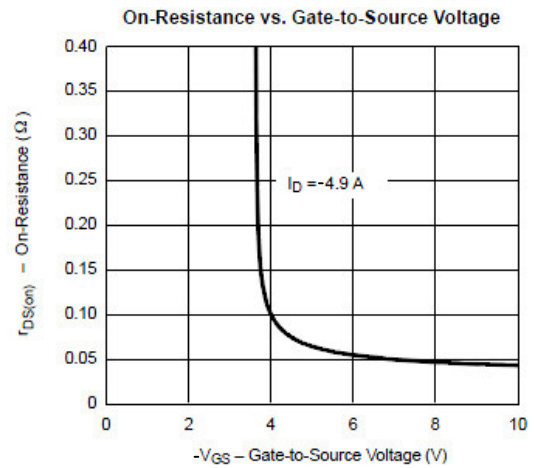
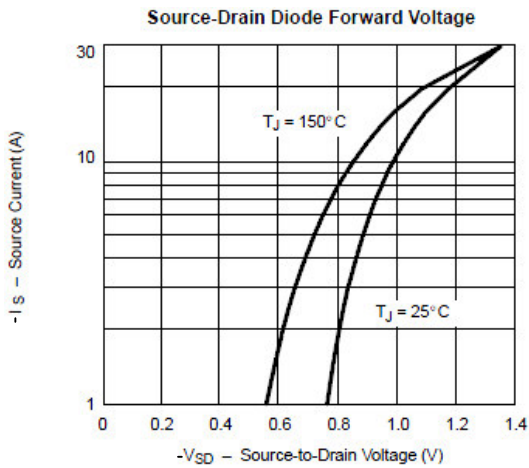
T_A=25°C Unless otherwise noted

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	-0.6		-1.1	V
I _{GSS}	Gate Leakage Current	V _{DS} =0V, V _{GS} =±12V			±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} =-10V	-25			A
R _{DS(on)}	Drain-Source On-Resistance	V _{GS} = -10V, I _D =-8.0A		40	55	mΩ
		V _{GS} = -4.5V, I _D =-6.0A		58	75	
		V _{GS} = -2.5V, I _D =-4.0A		78	95	
g _{FS}	Forward Transconductance	V _{DS} =-10V, I _D =-4.9A		10		S
V _{SD}	Diode Forward Voltage	I _S =-1.7A, V _{GS} =0V		-0.8	-1.3	V
Dynamic						
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		
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		
t _{d(on)}	Turn-On Time	V _{DD} =-15V, R _L =1.5Ω, I _D =-1.0A, V _{GEN} =-10V, R _G =6Ω		8	18	ns
t _r				8	18	
t _{d(off)}	Turn-Off Time			25	50	
t _f				25	35	

Typical Performance Characteristics

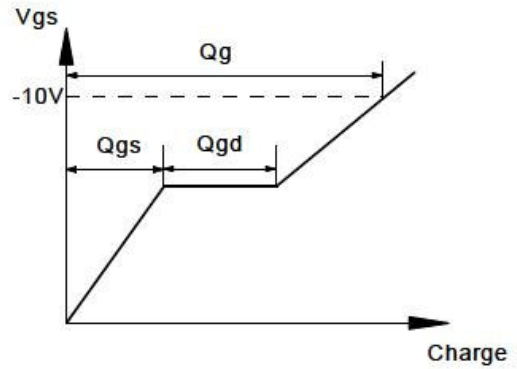
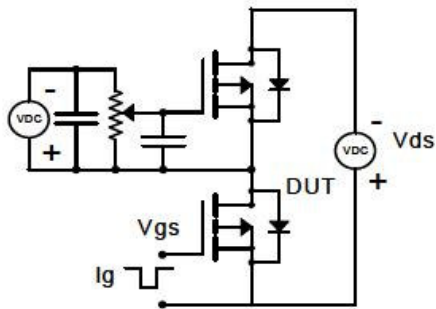


Typical Performance Characteristics (Continue)

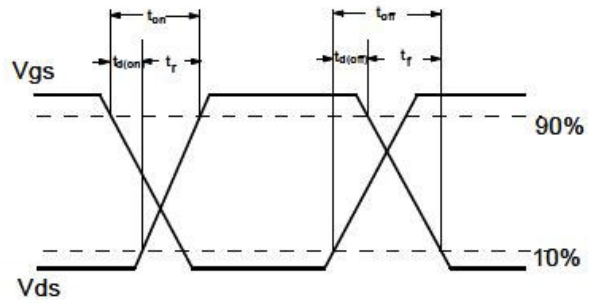
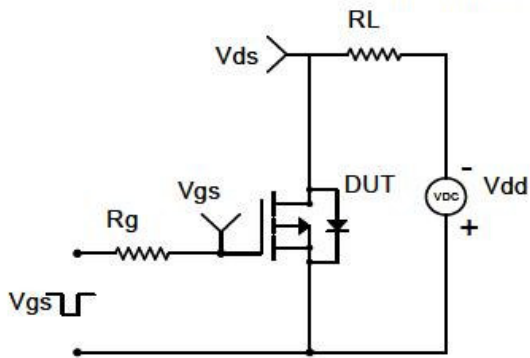


Typical Performance Characteristics (Continue)

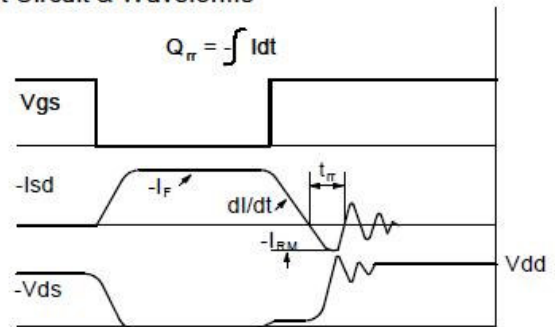
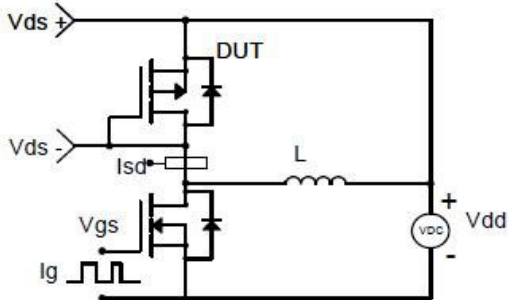
Gate Charge Test Circuit & Waveform



Resistive Switching Test Circuit & Waveforms

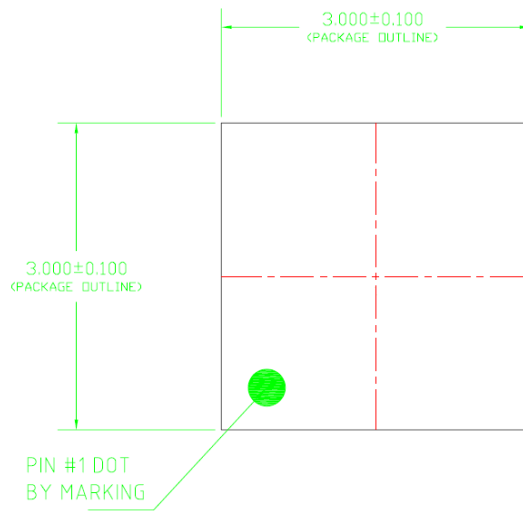


Diode Recovery Test Circuit & Waveforms

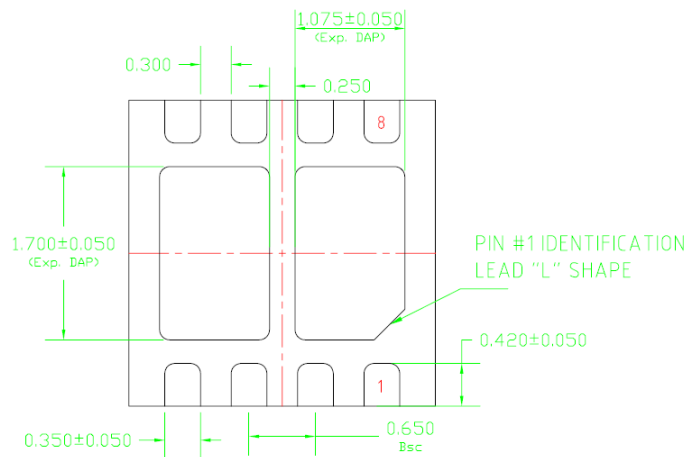


Package Dimension

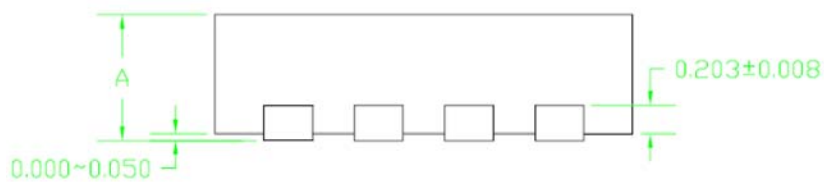
DFN3x3-8L



TOP VIEW



BOTTOM VIEW







SIDE VIEW



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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