

GSM7617WS

30V P-Channel Enhancement Mode MOSFET

Product Description

GSM7617WS, 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.

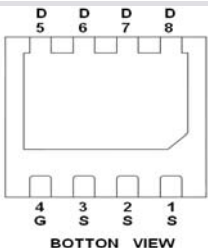
Features

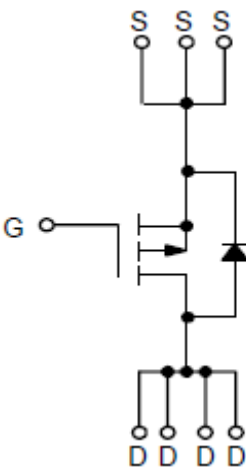
- -30V/-15A, $R_{DS(ON)}=10m\Omega@V_{GS}=-10V$
- -30V/-10A, $R_{DS(ON)}=16m\Omega@V_{GS}=-4.5V$
- Super high density cell design for extremely low $R_{DS(ON)}$
- Exceptional on-resistance and maximum DC current capability
- DFN3X3-8L package design

Applications

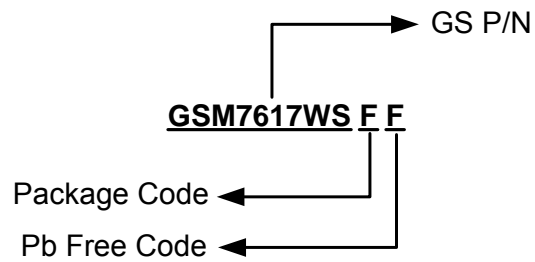
- DC/DC Converter
- POL

Packages & Pin Assignments

GSM7617WSFF (DFN3X3-8L)	
 <p style="text-align: center;">BOTTOM VIEW</p>	
Pin	Description
1	Source
2	Source
3	Source
4	Gate
5	Drain
6	Drain
7	Drain
8	Drain

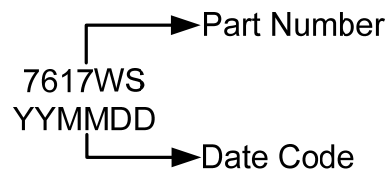


Ordering Information



Part Number	Package	Quantity Reel
GSM7617WSFF	DFN3X3-8L	5000 PCS

Marking Information



Absolute Maximum Ratings

T_A=25°C Unless otherwise noted

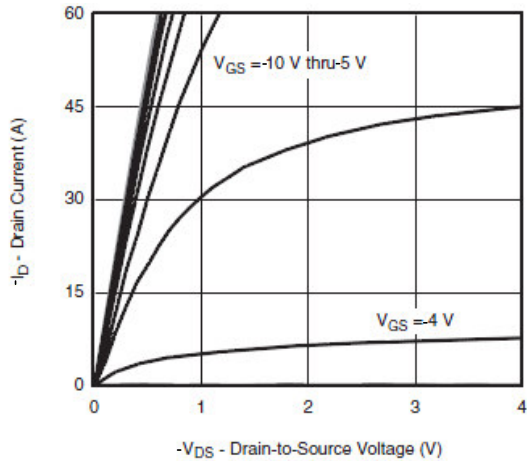
Symbol	Parameter	Typical	Unit
V _{DSS}	Drain-Source Voltage	-30	V
V _{GSS}	Gate –Source Voltage	±20	V
I _D	Continuous Drain Current (T _J =150°C)	T _A =25°C	-16
		T _A =70°C	-12
I _{DM}	Pulsed Drain Current	-50	A
I _S	Continuous Source Current (Diode Conduction)	-3	A
P _D	Power Dissipation	T _A =25°C	28
		T _A =70°C	18
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

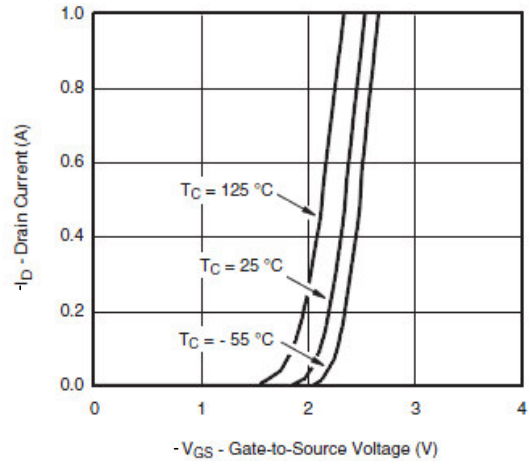
T_A=25°C Unless otherwise noted

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	-1.6	-3.0	
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	-30			A
R _{DS(on)}	Drain-Source On-Resistance	V _{GS} = -10V, I _D =-15A		6	10	mΩ
		V _{GS} = -4.5V, I _D =-10A		12	16	
g _{FS}	Forward Transconductance	V _{DS} =-10V, I _D =-15A		35		S
V _{SD}	Diode Forward Voltage	I _S =-2.3A, V _{GS} =0V		-0.7	-1.3	V
Dynamic						
Q _g	Total Gate Charge	V _{DS} =-15V, V _{GS} =-4.5V, I _D =-12.0A		25	35	nC
Q _{gs}	Gate-Source Charge			10		
Q _{gd}	Gate-Drain Charge			15		
C _{iss}	Input Capacitance	V _{DS} =-15V, V _{GS} =0V, f=1MHz		2100		pF
C _{oss}	Output Capacitance			400		
C _{rss}	Reverse Transfer Capacitance			330		
t _{d(on)}	Turn-On Time	V _{DD} =-15V, R _L =1.5Ω, I _D =-12.0A, V _{GEN} =-10V, R _G =1Ω		15	25	ns
t _r				15	25	
t _{d(off)}	Turn-Off Time			35	45	
t _f				10	20	

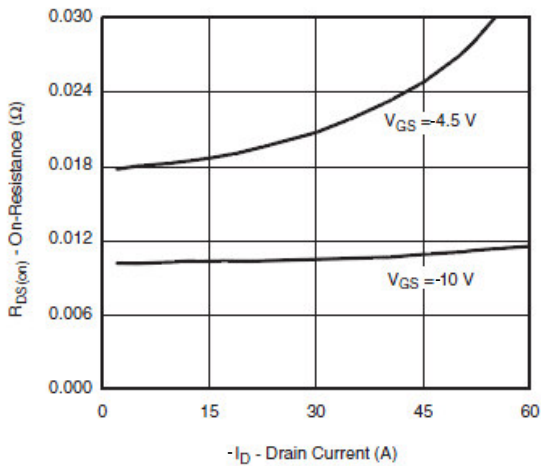
Typical Performance Characteristics



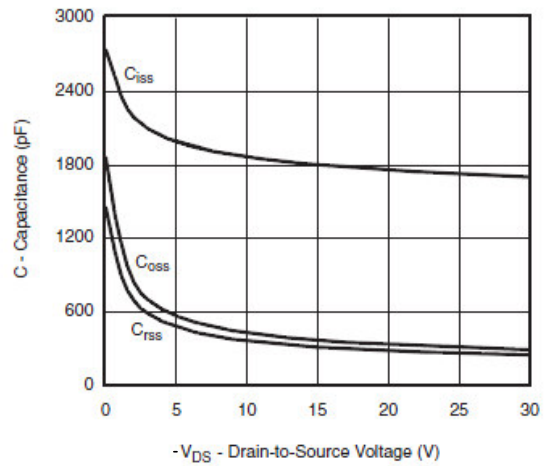
Output Characteristics



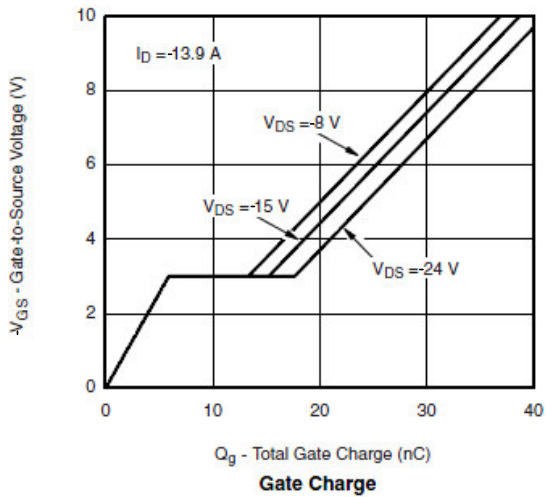
Transfer Characteristics



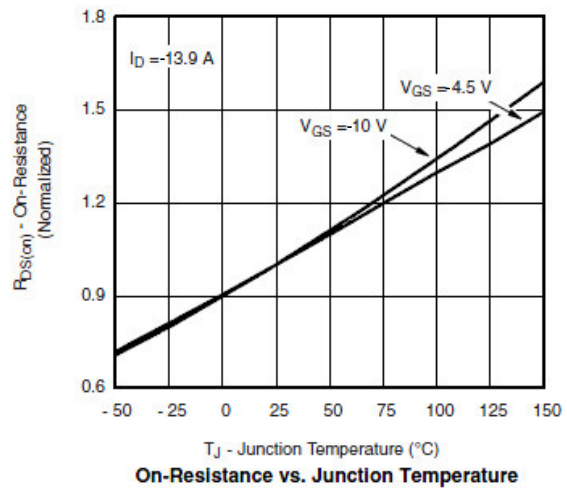
On-Resistance vs. Drain Current



Capacitance

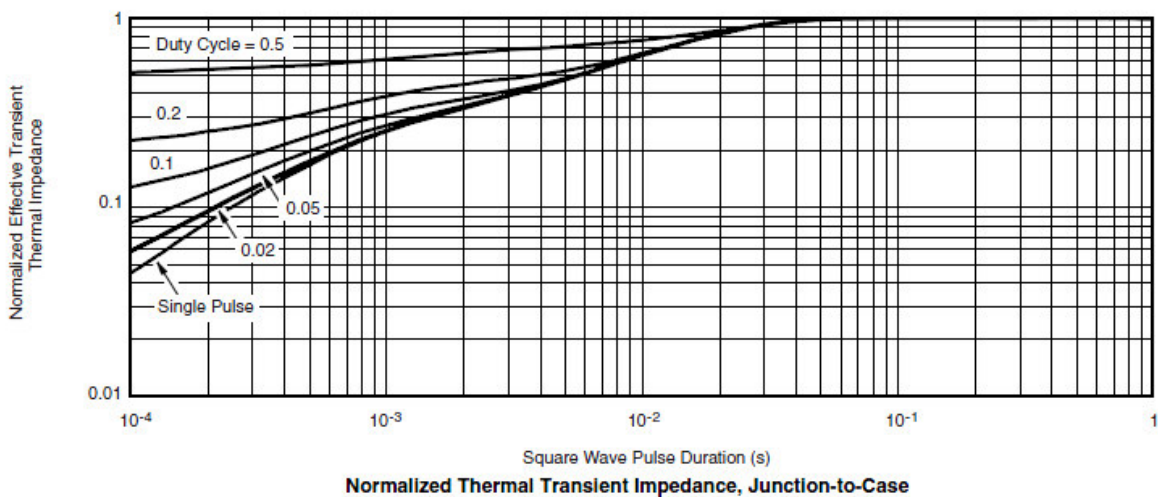
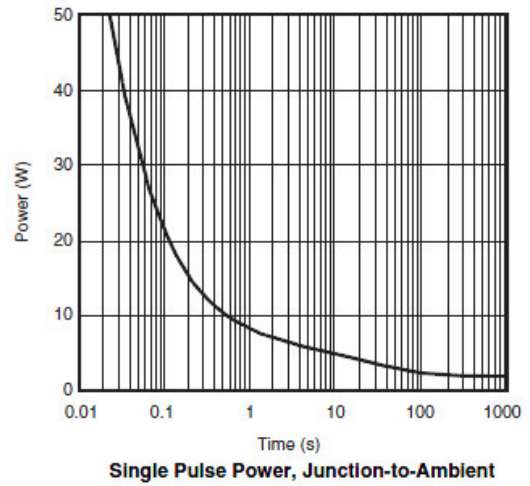
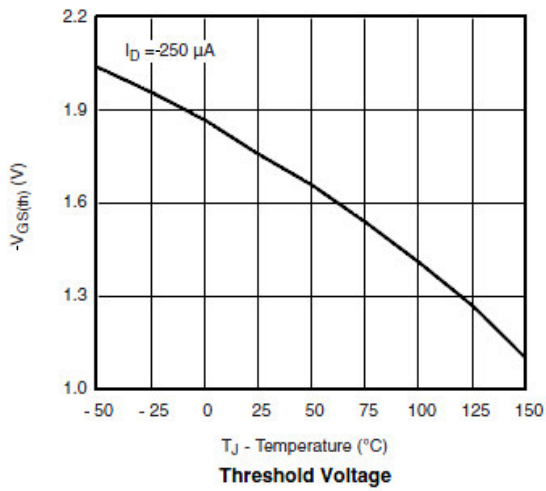
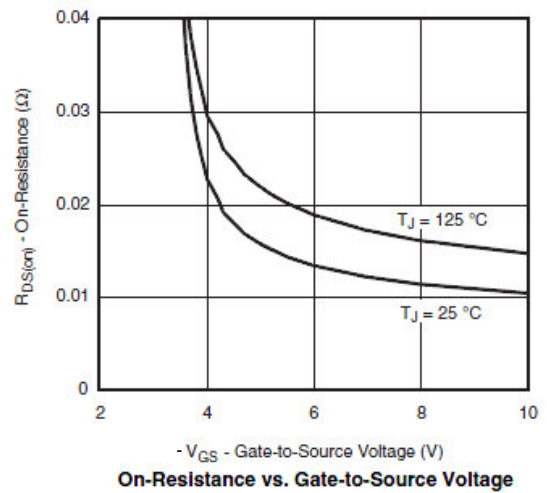
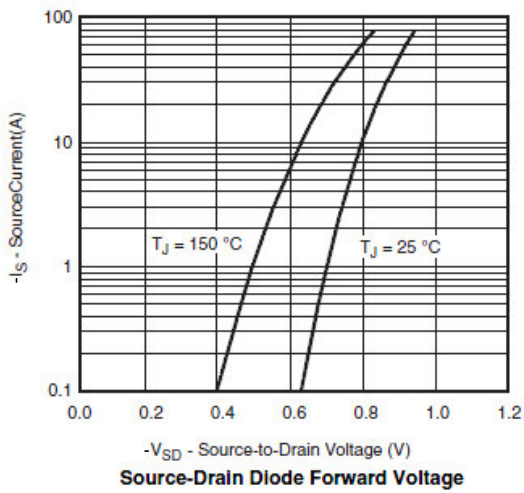


Gate Charge



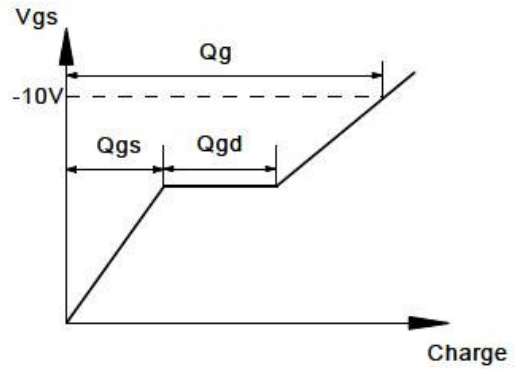
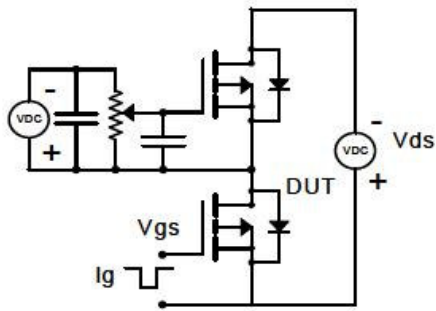
On-Resistance vs. Junction Temperature

Typical Performance Characteristics (Continue)

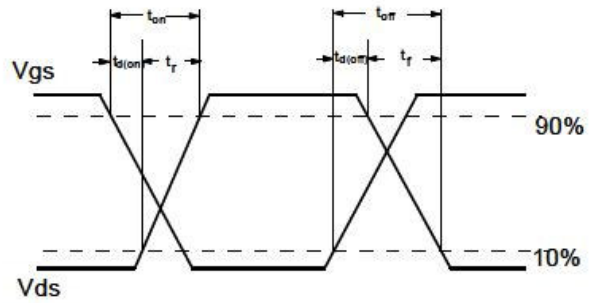
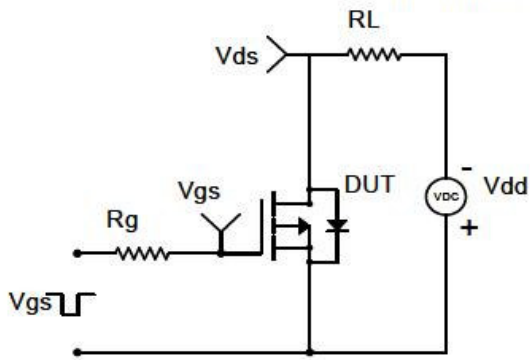


Typical Performance Characteristics (Continue)

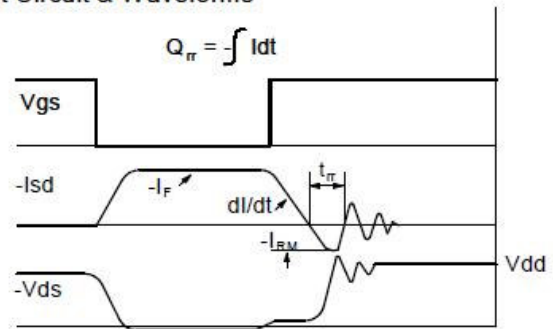
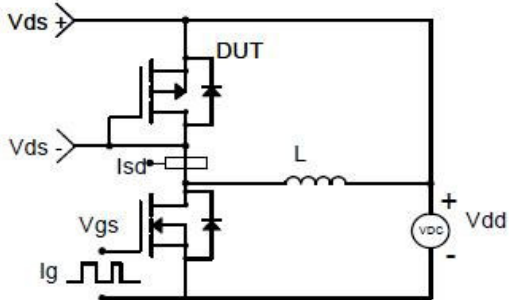
Gate Charge Test Circuit & Waveform



Resistive Switching Test Circuit & Waveforms

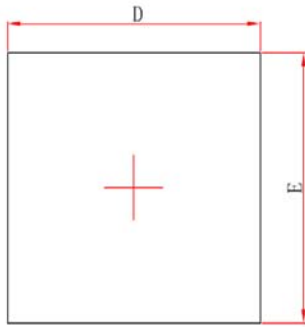


Diode Recovery Test Circuit & Waveforms

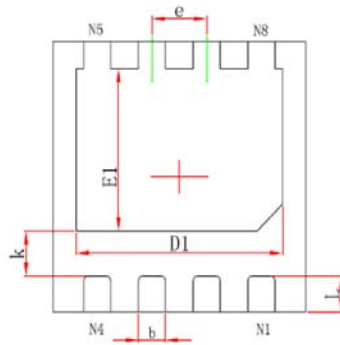


Package Dimension

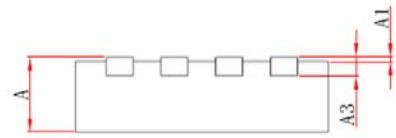
DFN3x3-8L



Top View



Bottom View







Side View

Dimensions				
SYMBOL	Millimeters		Inches	
	MIN	MAX	MIN	MAX
A	0.800	0.900	0.031	0.035
A1	0.000	0.05	0.000	0.002
A3	0.203REF		0.008REF	
D	2.924	3.076	0.115	0.121
E	2.924	3.076	0.115	0.121
D1	2.350	2.550	0.093	0.100
E1	1.700	1.90	0.067	0.075
k	0.450	0.550	0.018	0.022
b	0.270	0.370	0.011	0.015
e	0.650TYP		0.026TYP	
L	0.324	0.476	0.013	0.019



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