

GSM3326WS

30V N & P Pair Enhancement Mode MOSFET

Product Description

GSM3326WS, N & P Pair 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

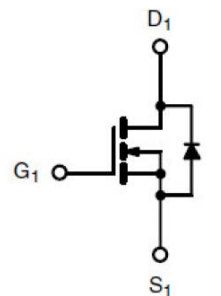
- N-Channel
30V/12A, $R_{DS(ON)}=36m\Omega@V_{GS}=10V$
30V/10A, $R_{DS(ON)}=46m\Omega@V_{GS}=4.5V$
- P-Channel
-30V/-8A, $R_{DS(ON)}=60m\Omega@V_{GS}=-10V$
-30V/-6A, $R_{DS(ON)}=80m\Omega@V_{GS}=-4.5V$

Applications

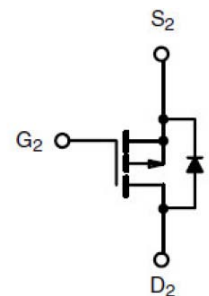
- DC/DC Converter
- Load Switch
- DC FAN

Packages & Pin Assignments

GSM3326WSFF (DFN3X3-8L)		
Pin	Symbol	Description
1	S1	Source 1
2	G1	Gate 1
3	S2	Source 2
4	G2	Gate 2
5	D2	Drain 2
6	D2	Drain 2
7	D1	Drain 1
8	D1	Drain 1

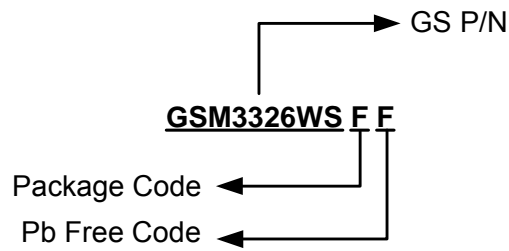


N-Channel MOSFET



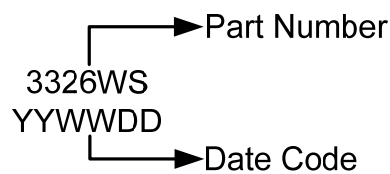
P-Channel MOSFET

Ordering Information



Part Number	Package	Quantity Reel
GSM3326WSFF	DFN3X3-8L	5000 PCS

Marking Information



Absolute Maximum Ratings

T_A=25°C Unless otherwise noted

Symbol	Parameter	Typical		Unit	
		N-Channel	P-Channel		
V _{DSS}	Drain-Source Voltage	30	-30	V	
V _{GSS}	Gate -Source Voltage	±20	±20	V	
I _D	Continuous Drain Current (T _J =150°C)	T _A =25°C	12	-8	A
		T _A =70°C	10	-6	
I _{DM}	Pulsed Drain Current	50	-30	A	
I _S	Continuous Source Current (Diode Conduction)	10	-10	A	
P _D	Power Dissipation	T _A =25°C	2	1.8	W
		T _A =70°C	1.5	1.2	
T _J	Operating Junction Temperature	150	150	°C	
T _{STG}	Storage Temperature Range	-55/150	-55/150	°C	
R _{θJA}	Thermal Resistance-Junction to Ambient	56	62.5	°C/W	

Electrical Characteristics (N-Channel)

(T_A=25°C unless otherwise noted)

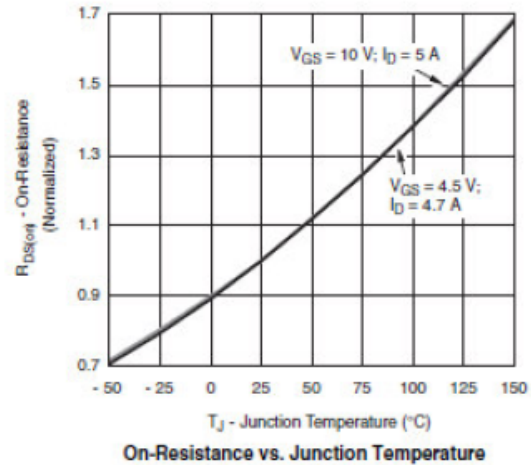
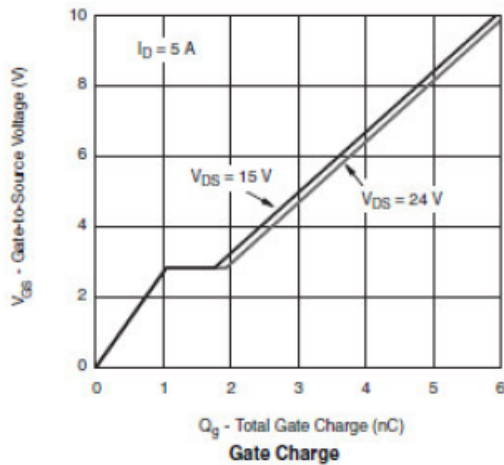
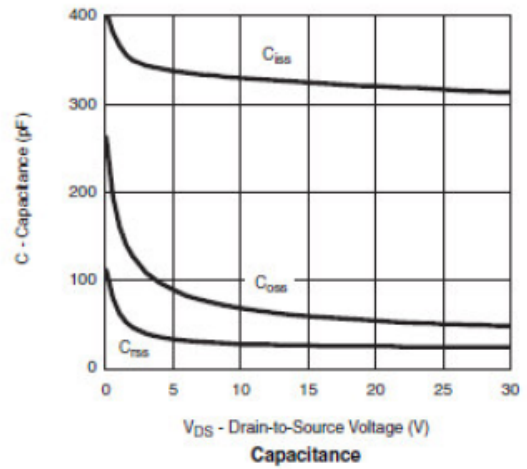
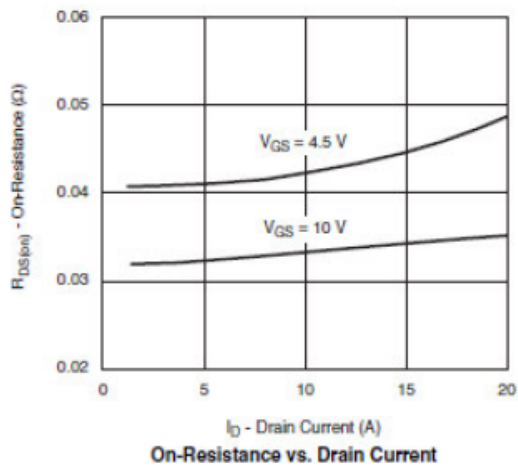
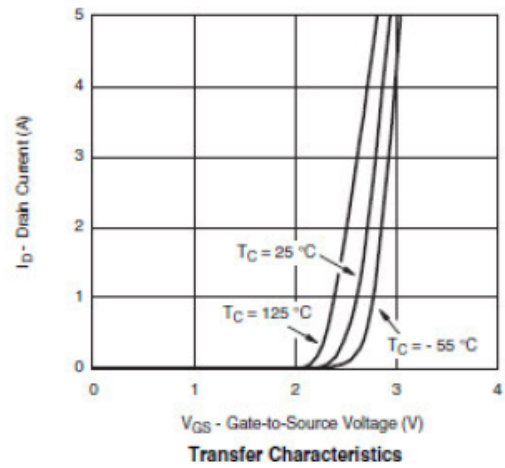
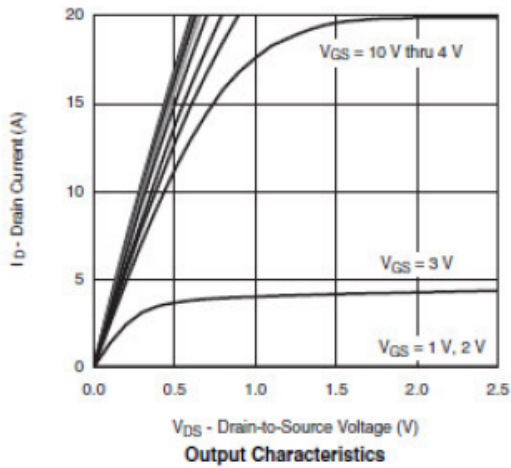
Symbol	Parameter	Conditions	Min	Typ	Max	Unit
Static						
V _{(BR)DSS}	Drain-Source Breakdown Voltage	V _{GS} =0V, I _D =250μA	30			V
V _{GS(th)}	Gate Threshold Voltage	V _{DS} =V _{GS} , I _D =250μA	1.3		2.1	V
I _{GSS}	Gate Leakage Current	V _{DS} =0V, V _{GS} =±20V			±100	nA
I _{DSS}	Zero Gate Voltage 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 =12A		30	36	mΩ
		V _{GS} =4.5V, I _D =10A		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	

Electrical Characteristics (P-Channel)

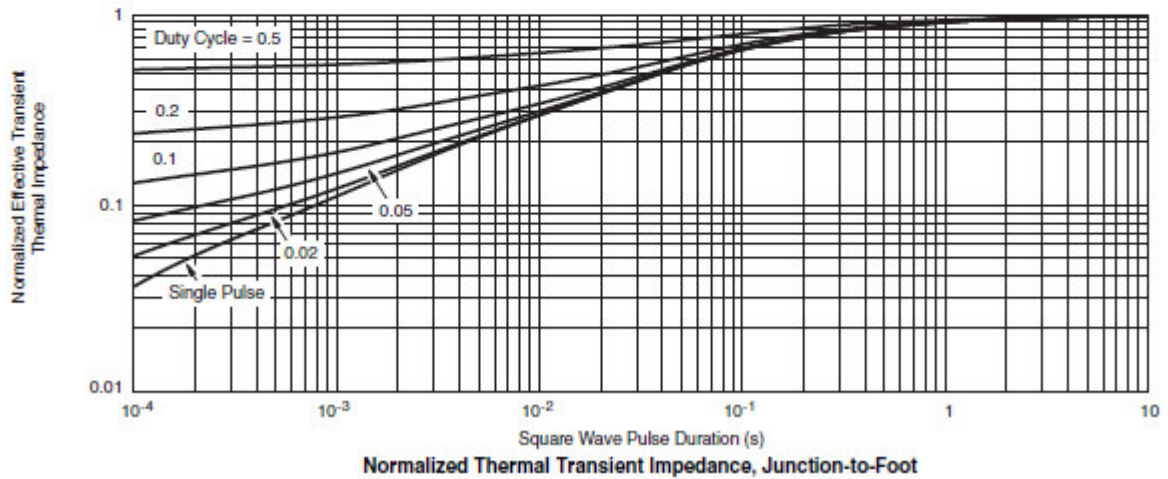
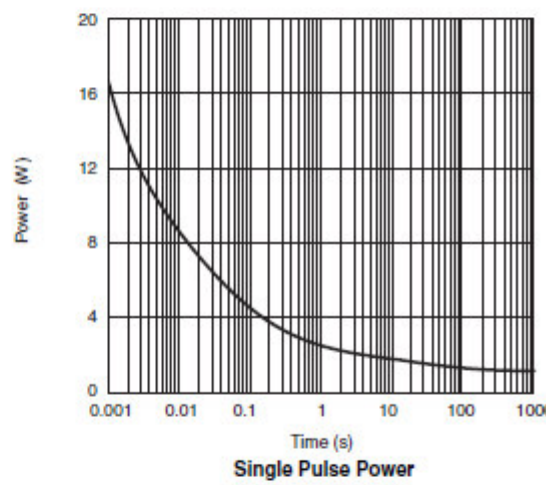
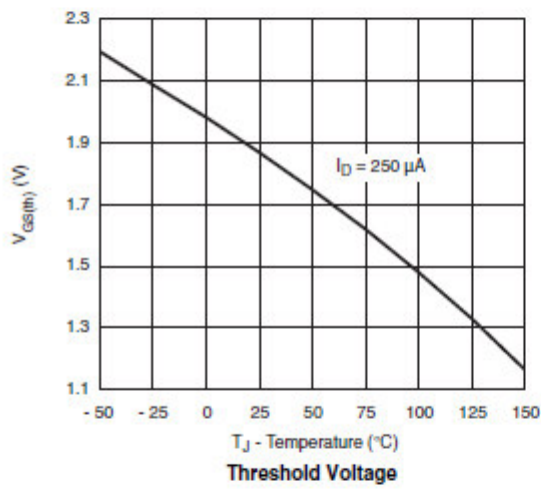
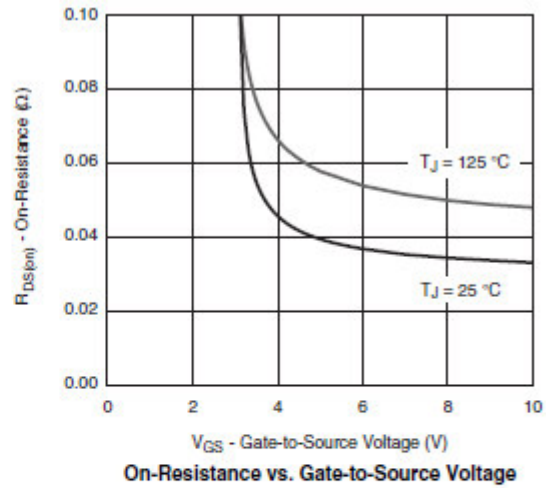
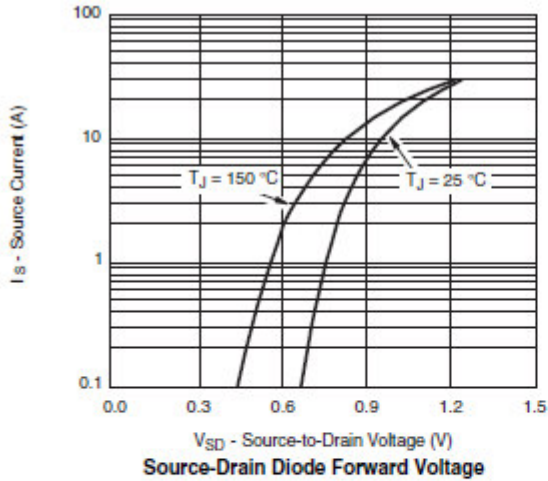
(T_A=25°C unless otherwise noted)

Symbol	Parameter	Conditions	Min	Typ	Max	Unit
Static						
V _{(BR)DSS}	Drain-Source Breakdown Voltage	V _{GS} =0V, I _D =-250uA	-30			V
V _{GS(th)}	Gate Threshold Voltage	V _{DS} =V _{GS} , I _D =-250uA	-1.0		-2.0	
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	uA
		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} =-10.0V, I _D =-8A		50	60	mΩ
		V _{GS} =-4.5V, I _D =-6A		70	80	
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						
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		
t _{d(on)}	Turn-On Time	V _{DD} =-15V, R _L =15Ω, 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	

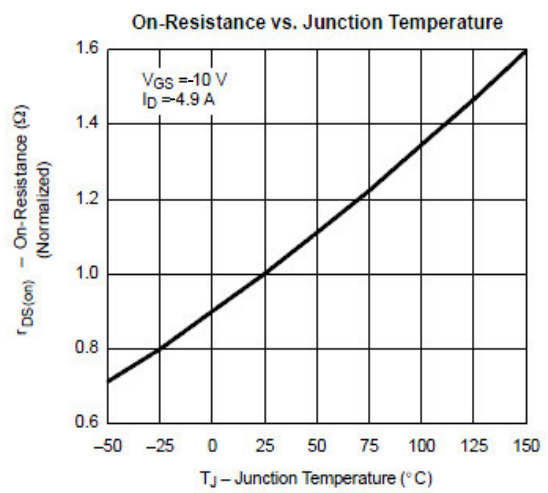
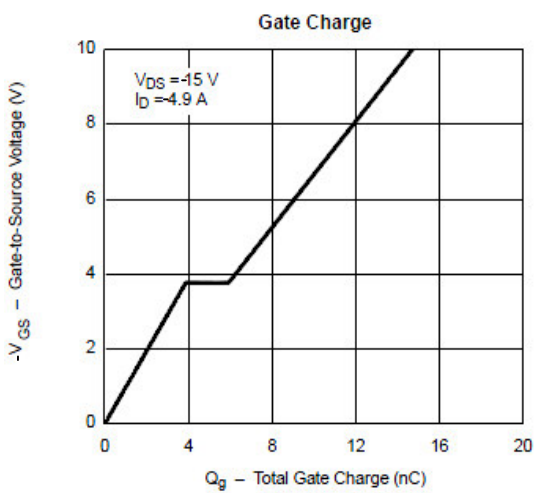
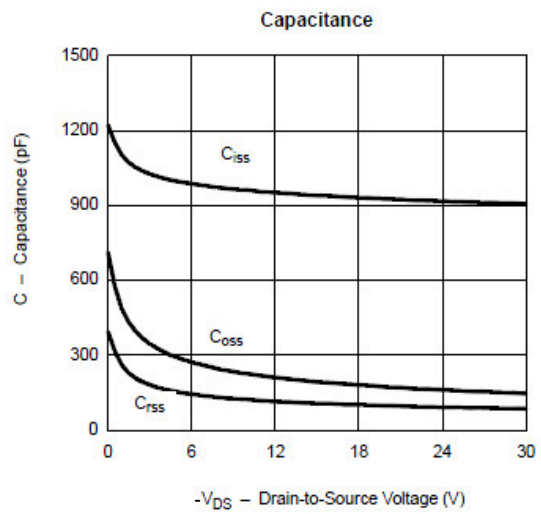
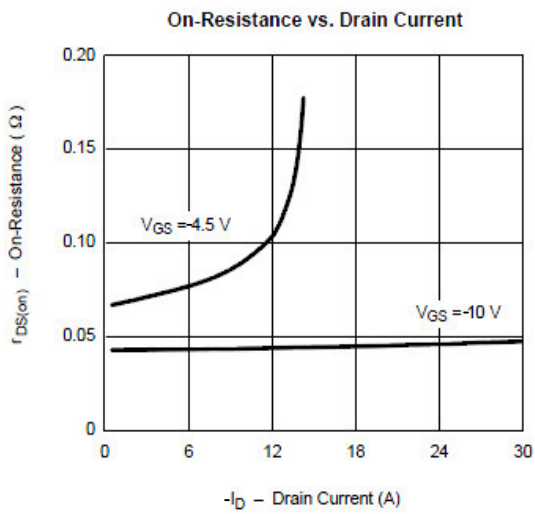
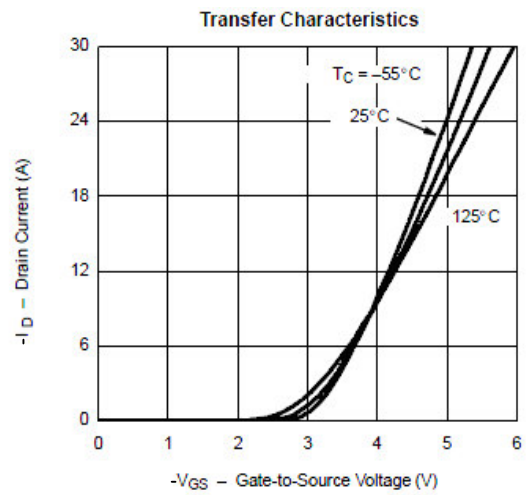
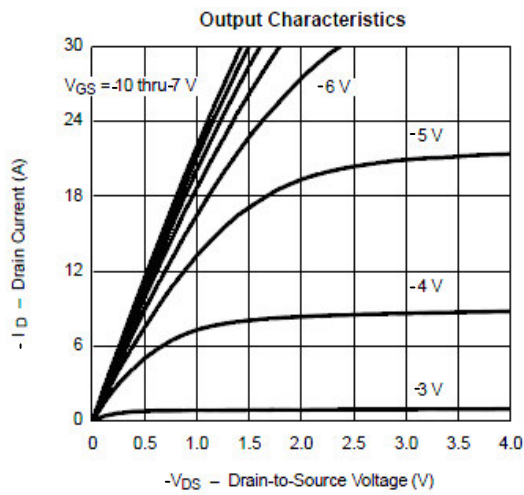
Typical Performance Characteristics (N-Channel)



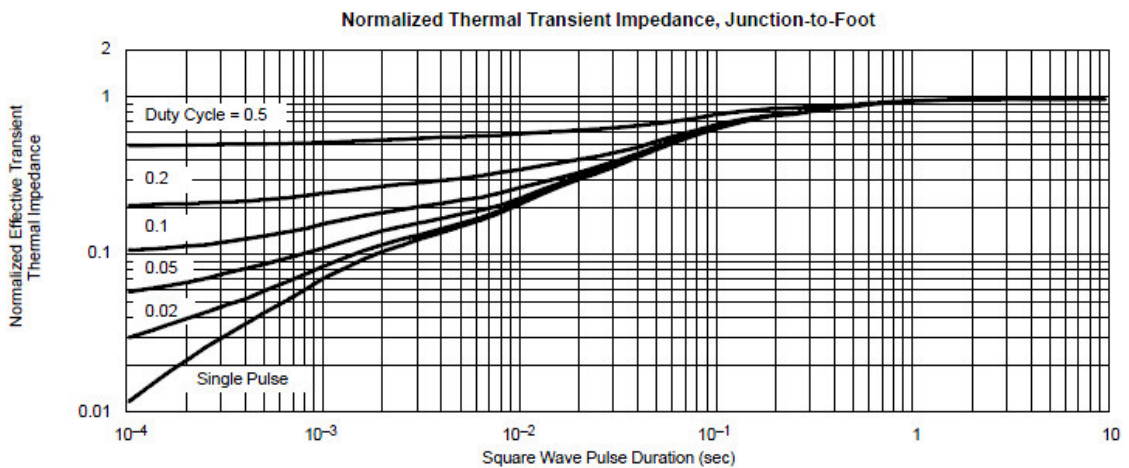
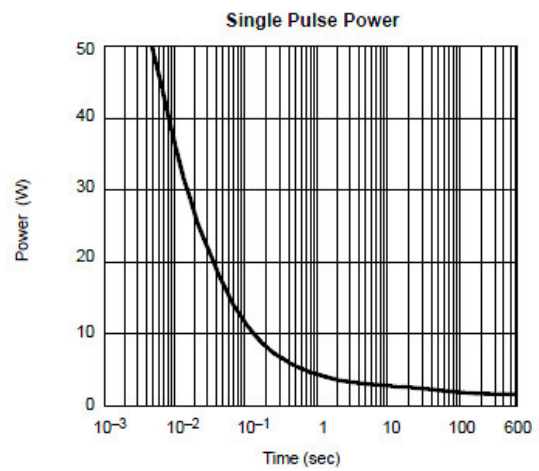
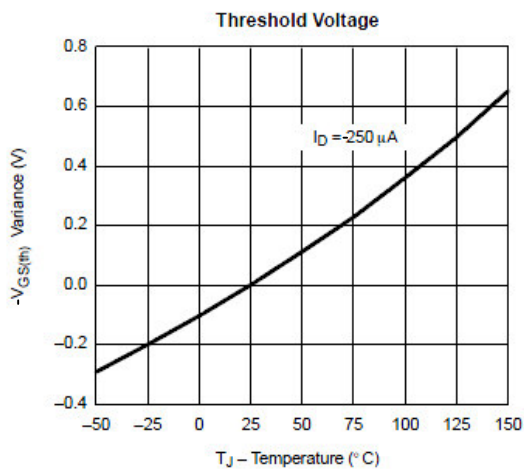
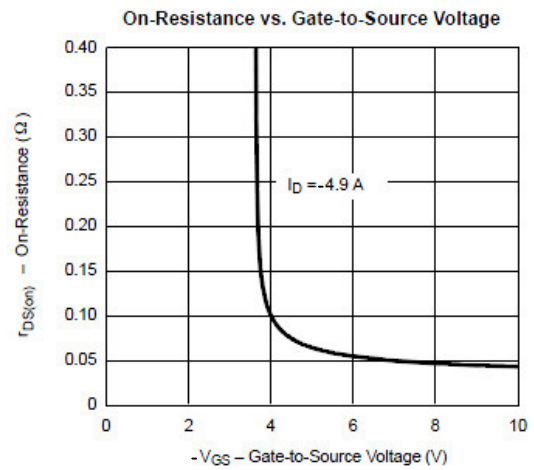
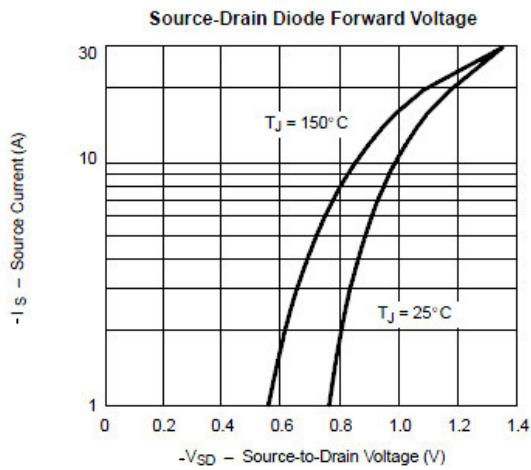
Typical Performance Characteristics (N-Channel Continue)



Typical Performance Characteristics (P-Channel)

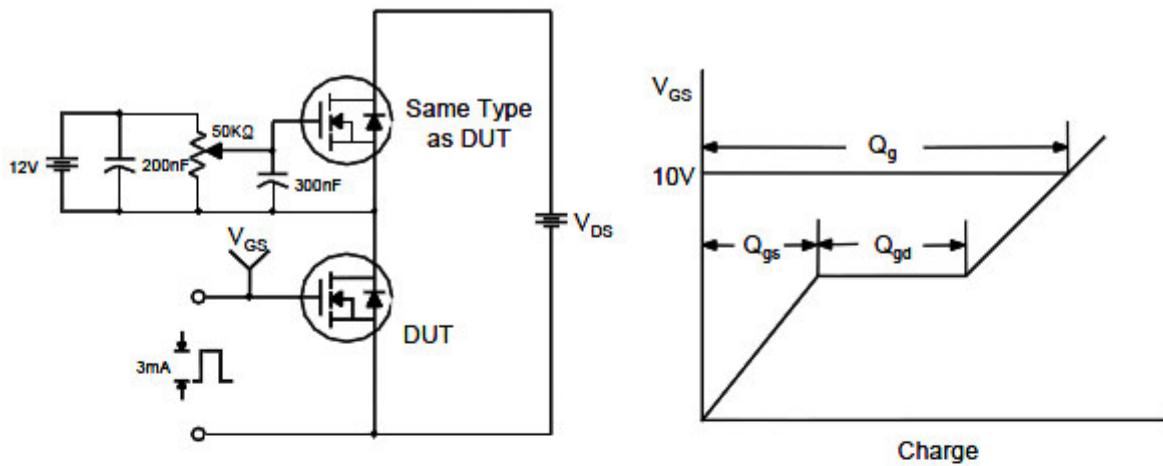


Typical Performance Characteristics (P-Channel Continue)

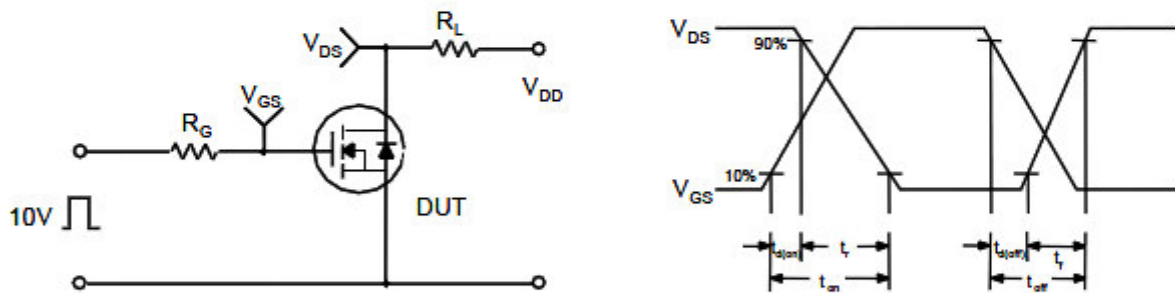


Typical Characteristics

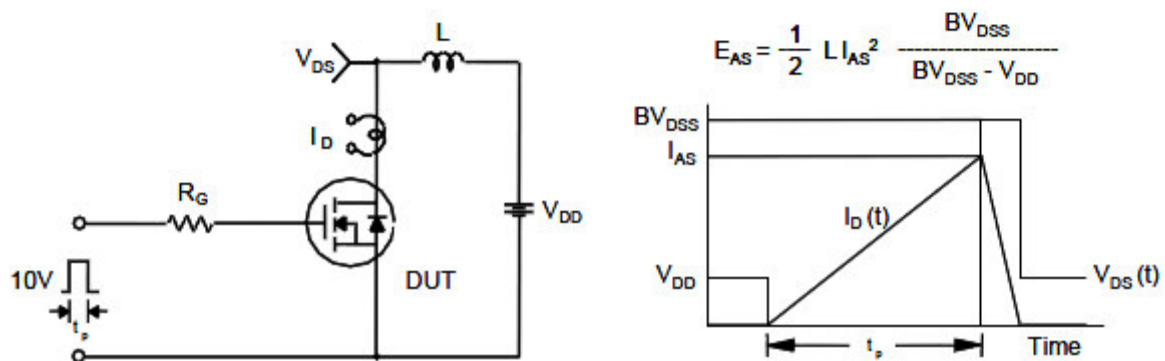
Gate Charge Test Circuit & Waveform



Resistive Switching Test Circuit & Waveforms

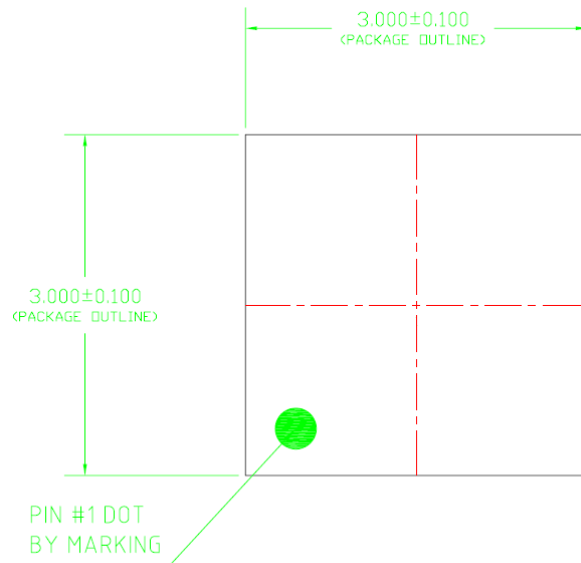


Unclamped Inductive Switching Test Circuit & Waveforms

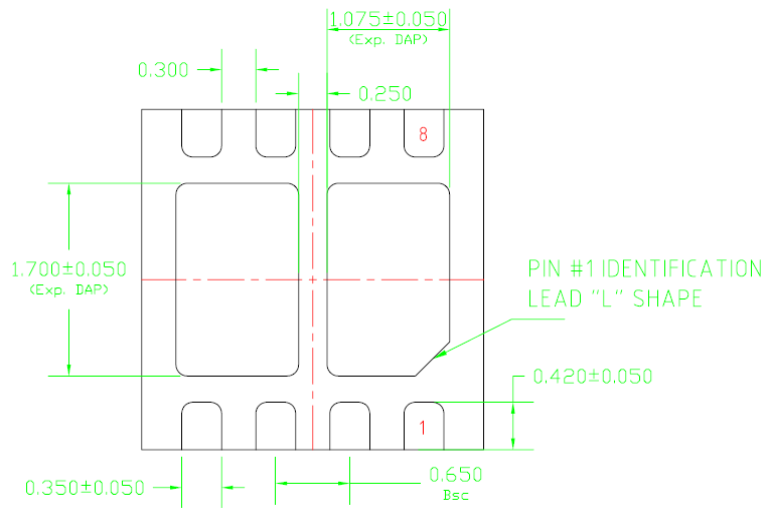


Package Dimension

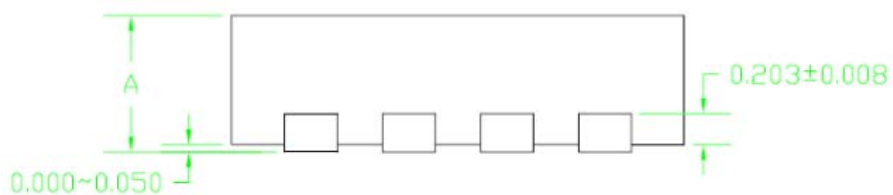
DFN3X3-8L



TOP VIEW







BOTTOM VIEW





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