

GSM2317

40V P-Channel Enhancement Mode MOSFET

Product Description

GSM2317, 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.

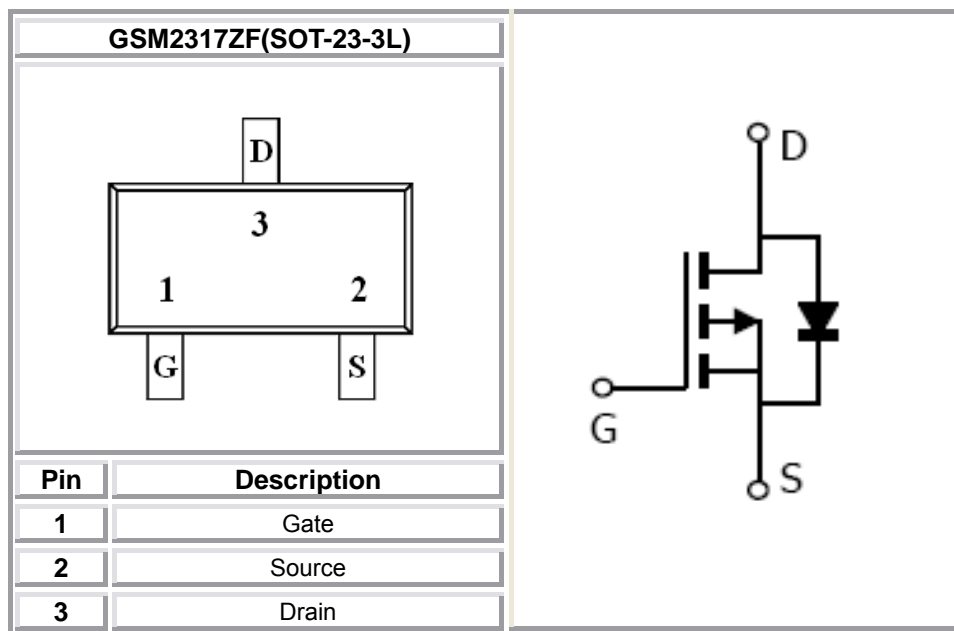
Features

- -40V/-3.6A, $R_{DS(ON)}=52m\Omega@V_{GS}=-10V$
- -40V/-3.2A, $R_{DS(ON)}=67m\Omega@V_{GS}=-4.5V$
- Super high density cell design for extremely low $R_{DS(ON)}$
- Exceptional on-resistance and maximum DC current capability
- SOT-23-3L package design

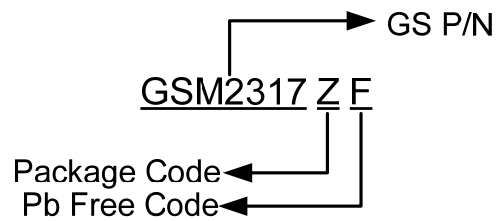
Applications

- Power Management in Note book
- LED Display
- DC-DC System
- LCD Panel

Packages & Pin Assignments

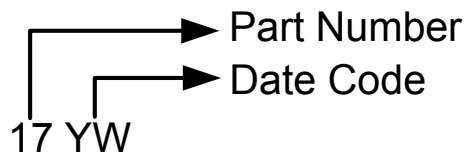


Ordering Information



Part Number	Package	Quantity Reel
GSM2317ZF	SOT-23-3L	3000 PCS

Marking Information



Absolute Maximum Ratings

($T_A=25^\circ\text{C}$ unless otherwise noted)

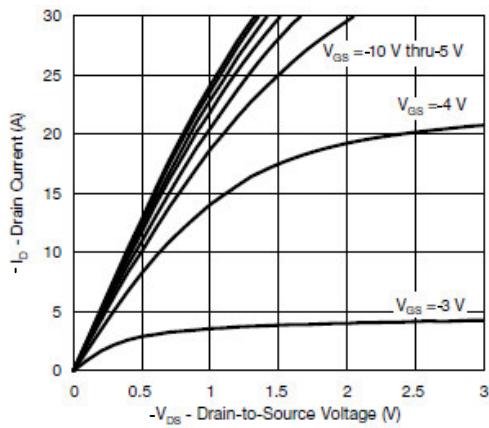
Symbol	Parameter	Typical	Unit
V_{DS}	Drain-Source Voltage	-40	V
V_{GS}	Gate -Source Voltage	± 20	V
I_D	Continuous Drain Current($T_J=150^\circ\text{C}$)	$T_A=25^\circ\text{C}$	-3.6
		$T_A=70^\circ\text{C}$	-3.2
I_{DM}	Pulsed Drain Current	-15	A
I_S	Continuous Source Current(Diode Conduction)	-1.5	A
P_D	Power Dissipation	$T_A=25^\circ\text{C}$	1.25
		$T_A=70^\circ\text{C}$	0.8
T_J	Operating Junction Temperature	150	$^\circ\text{C}$
T_{STG}	Storage Temperature Range	-55/150	$^\circ\text{C}$
$R_{\theta JA}$	Thermal Resistance-Junction to Ambient	120	$^\circ\text{C}/\text{W}$

Electrical Characteristics

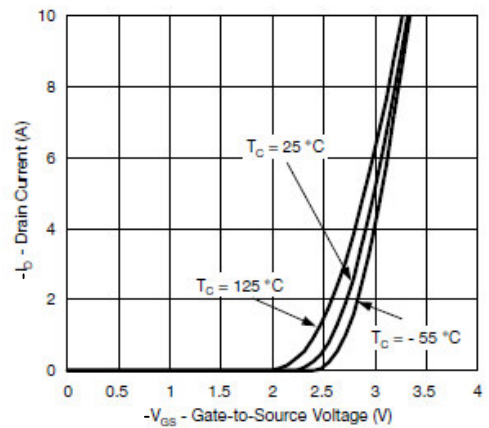
(T_A=25°C unless otherwise noted)

Symbol	Parameter	Conditions	Min	Typ	Max	Unit
Static						
V _{(BR)DSS}	Drain-Source Breakdown Voltage	V _{GS} =0V, I _D =-250uA	-40			V
V _{GS(th)}	Gate Threshold Voltage	V _{DS} =V _{GS} , I _D =-250uA	-1.0		-3.0	
I _{GSS}	Gate Leakage Current	V _{DS} =0V, V _{GS} =±20V			±100	nA
I _{DSS}	Zero Gate Voltage Drain Current	V _{DS} =-40V, V _{GS} =0V			-1	uA
		V _{DS} =-40V, V _{GS} =0V T _J =85°C			-20	
I _{D(on)}	On-State Drain Current	V _{DS} ≤ -5V, V _{GS} =-10V	-10			A
R _{DS(on)}	Drain-Source On-Resistance	V _{GS} = -10V, I _D =-3.6A		40	52	mΩ
		V _{GS} = -4.5V, I _D =-3.2A		53	67	
g _{FS}	Forward Transconductance	V _{DS} =-15V, I _D =-5A		20		S
V _{SD}	Diode Forward Voltage	I _S =-2A, V _{GS} =0V		-0.8	-1.2	V
Dynamic						
Q _g	Total Gate Charge	V _{DS} =-15V, V _{GS} =-10V, I _D ≐2.5A		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		450		pF
C _{oss}	Output Capacitance			95		
C _{rss}	Reverse Transfer Capacitance			55		
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	

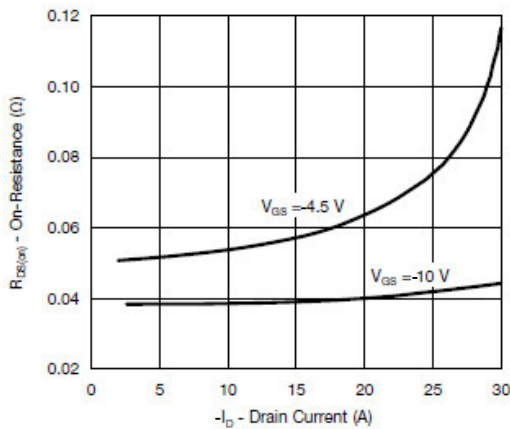
Typical Performance Characteristics



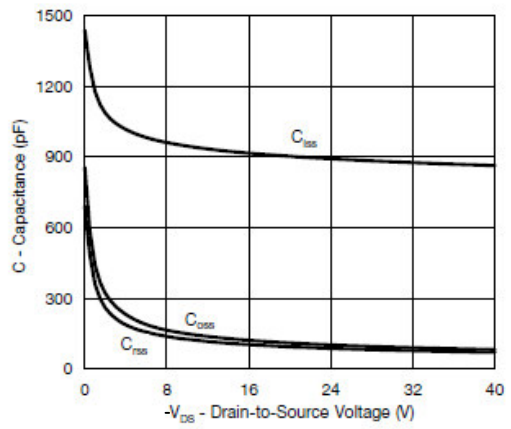
Output Characteristics



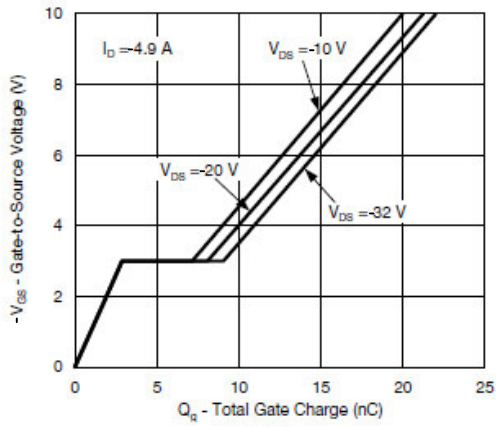
Transfer Characteristics



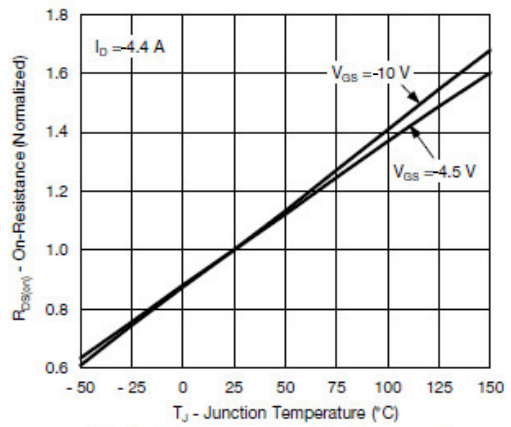
On-Resistance vs. Drain Current and Gate Voltage



Capacitance

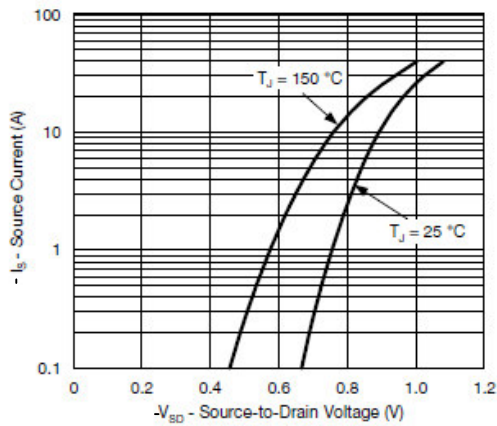


Gate Charge

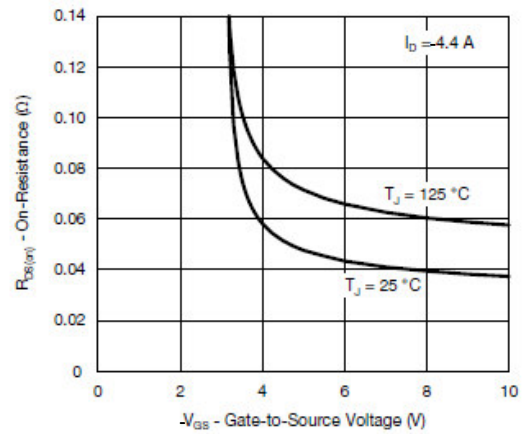


On-Resistance vs. Junction Temperature

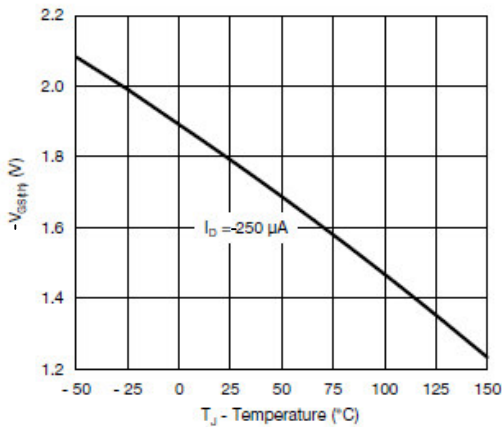
Typical Performance Characteristics (continue)



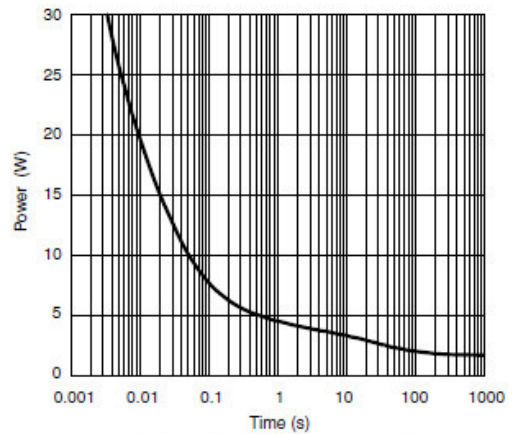
Source-Drain Diode Forward Voltage



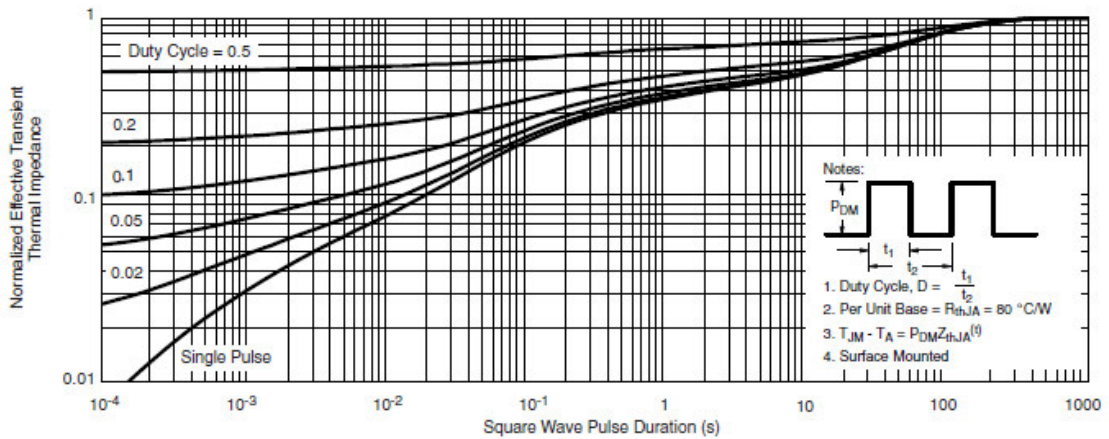
On-Resistance vs. Gate-to-Source Voltage



Threshold Voltage



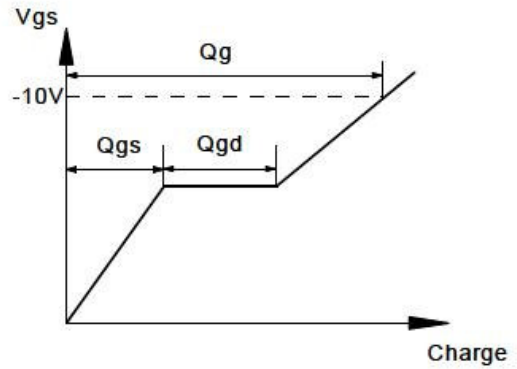
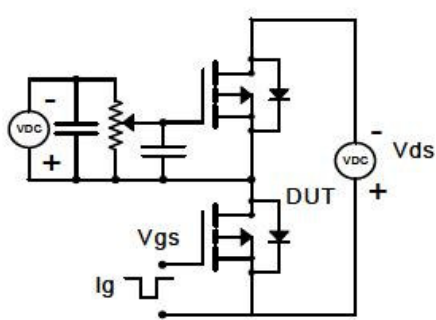
Single Pulse Power, Junction-to-Ambient



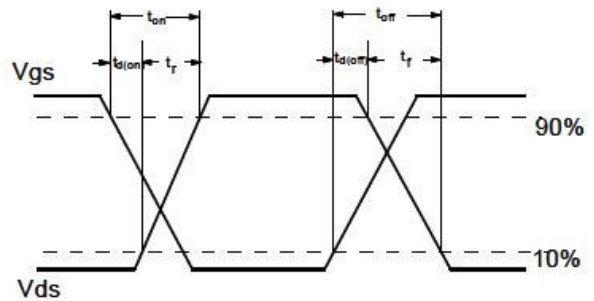
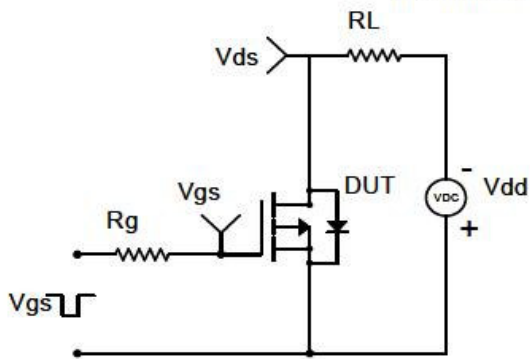
Normalized Thermal Transient Impedance, Junction-to-Ambient

Typical Performance Characteristics (continue)

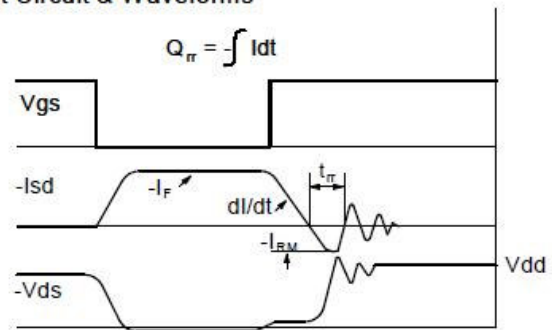
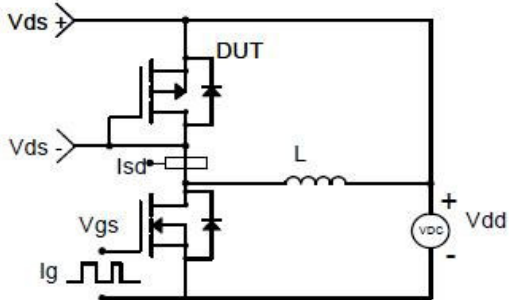
Gate Charge Test Circuit & Waveform



Resistive Switching Test Circuit & Waveforms

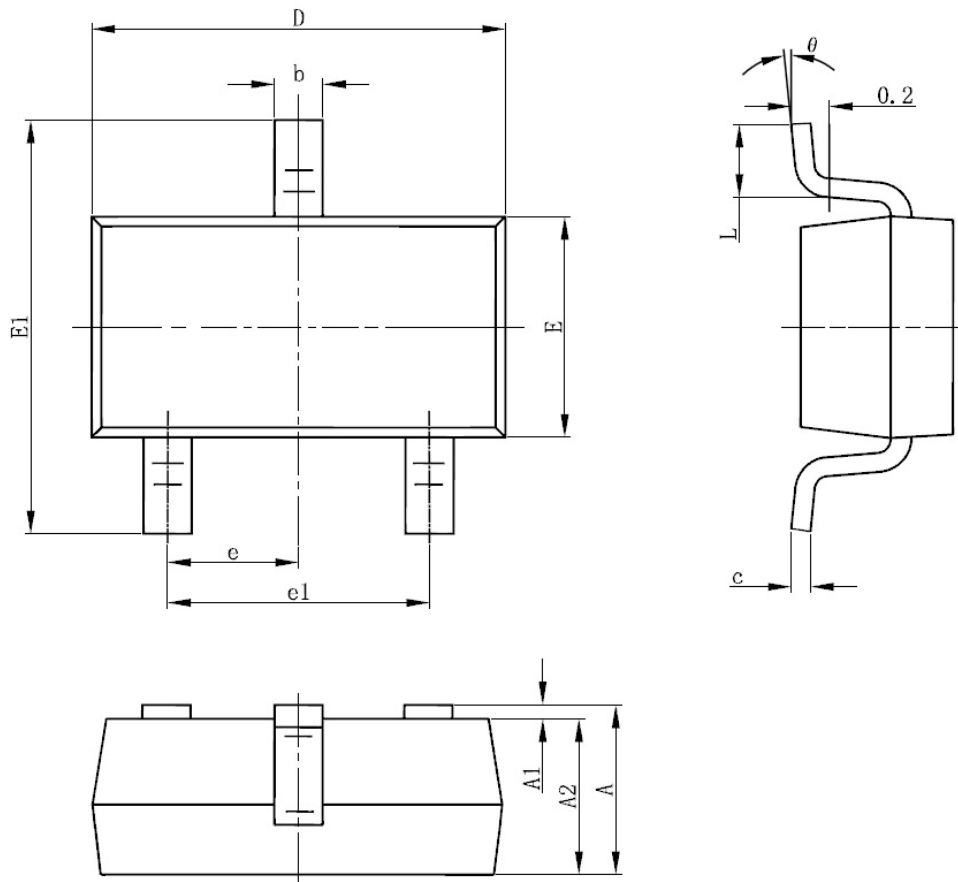


Diode Recovery Test Circuit & Waveforms



Package Dimension

SOT-23-3L











Dimensions				
SYMBOL	Millimeters		Inches	
	MIN	MAX	MIN	MAX
A	1.05	1.25	0.041	0.049
A1	0	0.1	0	0.004
A2	1.05	1.15	0.041	0.045
b	0.3	0.4	0.012	0.016
c	0.1	0.2	0.004	0.008
D	2.82	3.02	0.111	0.119
E	1.5	1.7	0.059	0.067
E1	2.65	2.95	0.104	0.116
e	0.950 (TYP)		0.037 (TYP)	
e1	1.8	2	0.071	0.079
L	0.700 REF		0.028 REF	
L1	0.3	0.6	0.012	0.024
Q	0°	8°	0°	8°



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