

GSM2303

30V P-Channel Enhancement Mode MOSFET

Product Description

GSM2303, 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.

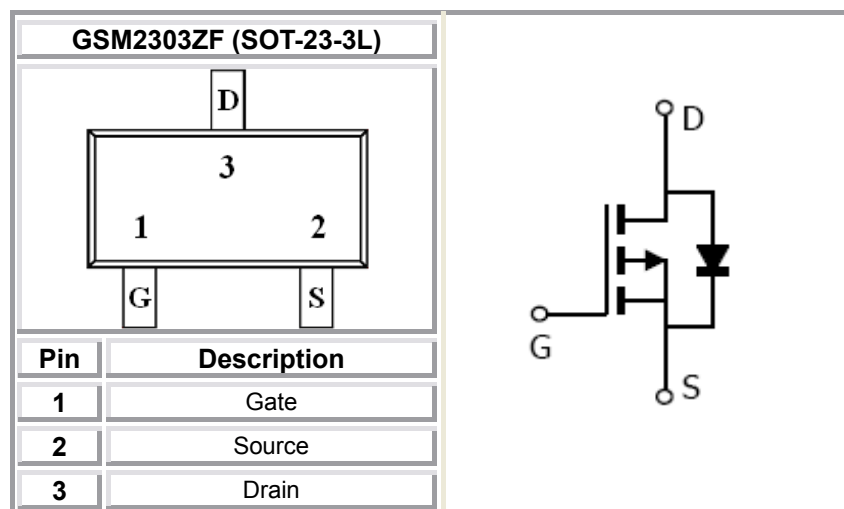
Features

- -30V/-3.6A, $R_{DS(ON)}=130m\Omega@V_{GS}=-10.0V$
- -30V/-3.2A, $R_{DS(ON)}=170m\Omega@V_{GS}=-4.5V$
- Super high density cell design for extremely low $R_{DS(ON)}$
- Exceptional on-resistance and maximum DC current capability
- SOT-23-3L package design

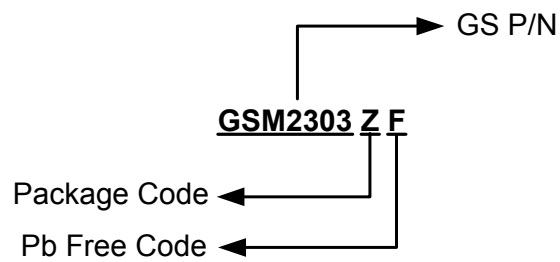
Applications

- Battery Switch for Portable Devices
- Computers
 - Bus Switch
 - Load Switch LED Display

Packages & Pin Assignments

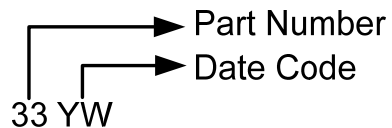


Ordering Information



Part Number	Package	Quantity
GSM2303ZF	SOT-23-3L	3000 PCS

Marking Information



Absolute Maximum Ratings

(T_A=25°C unless otherwise noted)

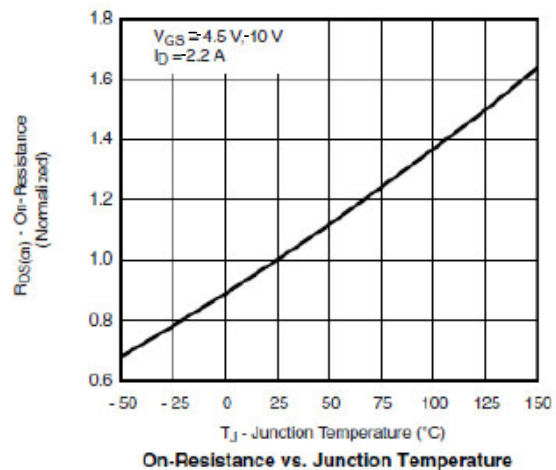
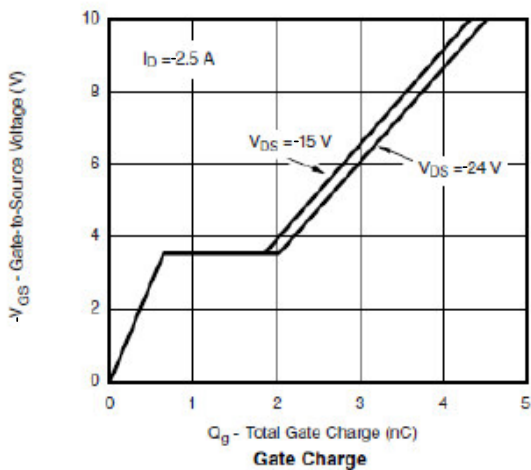
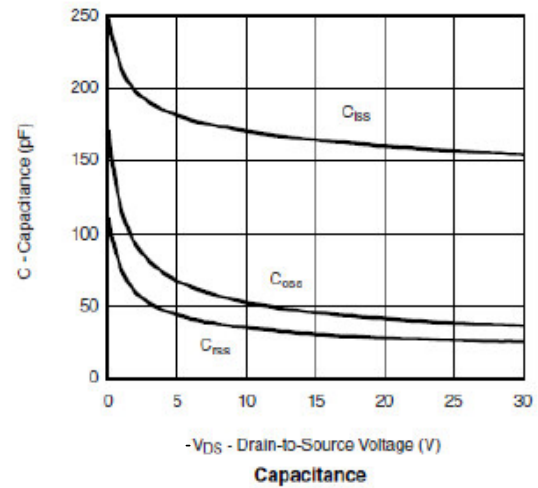
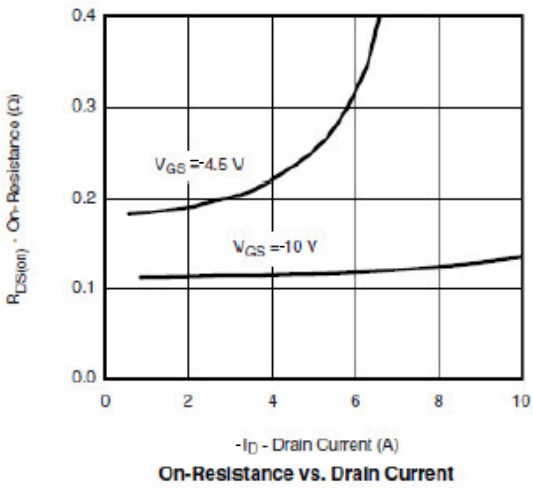
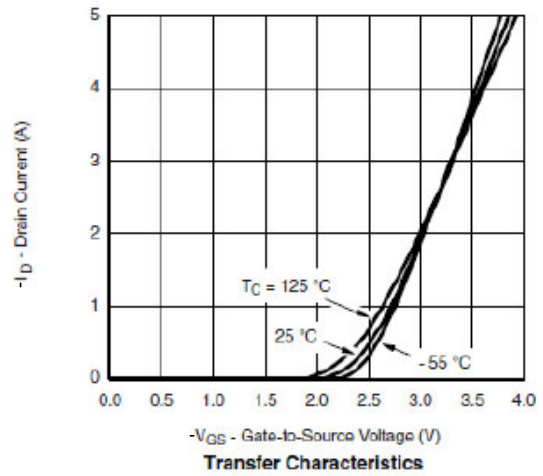
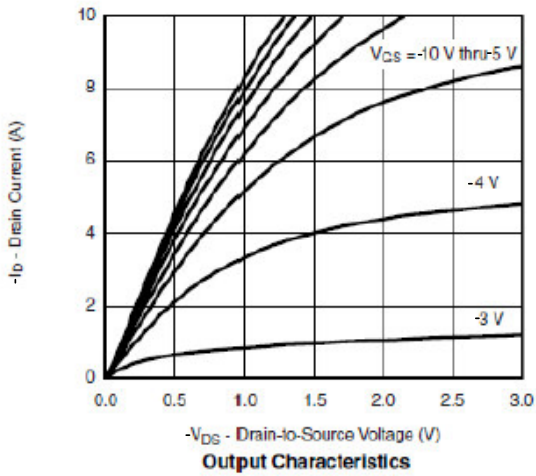
Symbol	Parameter	Typical	Unit
V _{DSS}	Drain-Source Voltage	-30	V
V _{GSS}	Gate-Source Voltage	±20	V
I _D	Continuous Drain Current(T _J =150°C)	T _A =25°C	-3.6
		T _A =70°C	-3.2
I _{DM}	Pulsed Drain Current	-15	A
I _S	Continuous Source Current(Diode Conduction)	-1.5	A
P _D	Power Dissipation	T _A =25°C	1.25
		T _A =70°C	0.8
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

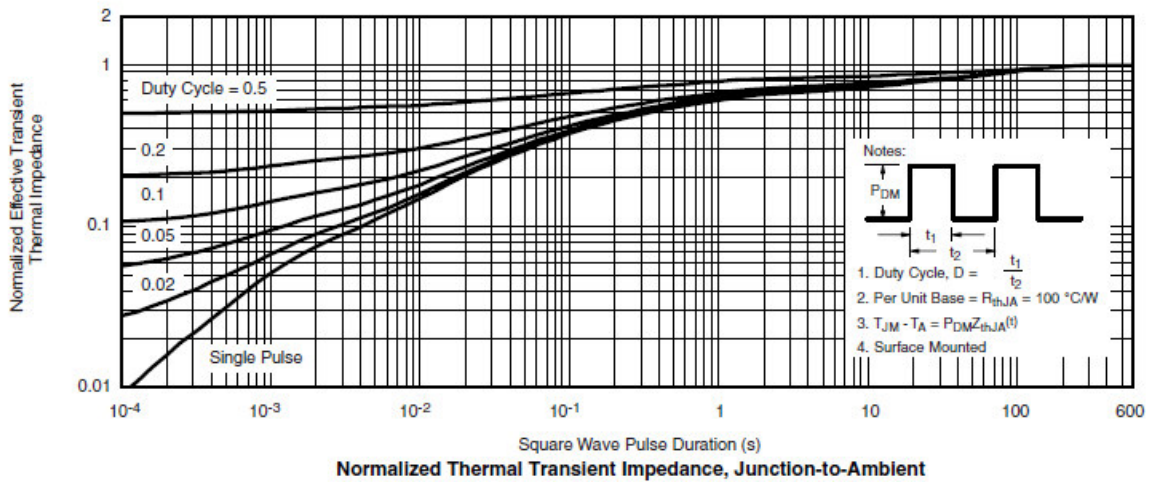
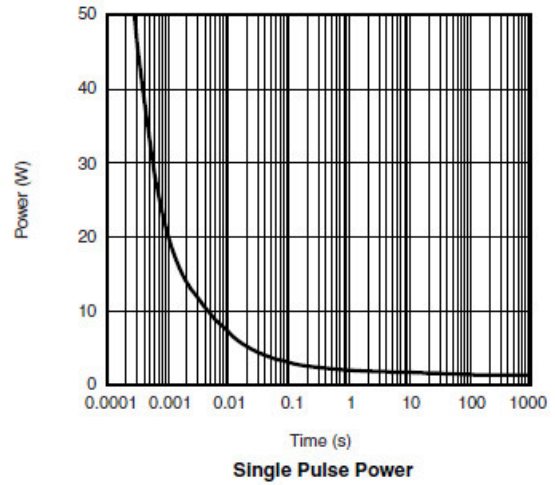
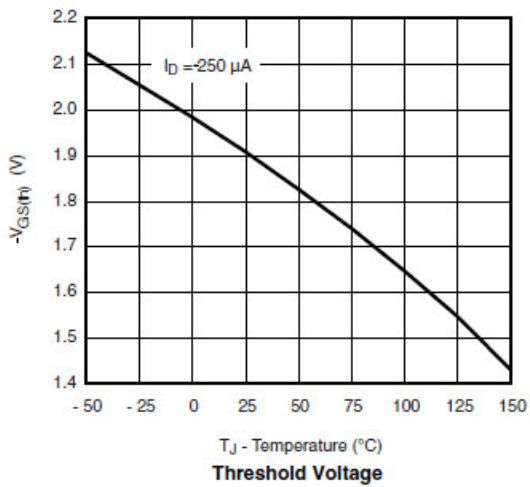
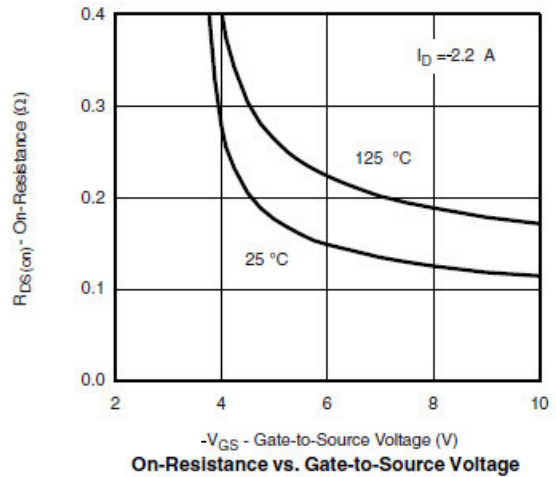
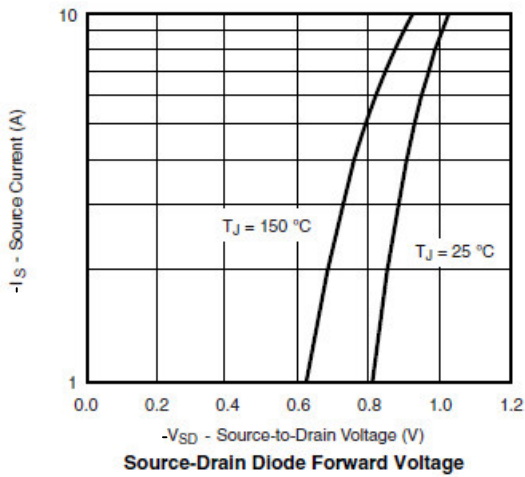
(T_A=25°C unless otherwise noted)

Symbol	Parameter	Conditions	Min	Typ	Max	Unit
Static						
V _{(BR)DSS}	Drain-Source Breakdown Voltage	V _{GS} =0V, I _D =-250uA	-30			V
V _{GS(th)}	Gate Threshold Voltage	V _{DS} =V _{GS} , I _D =-250uA	-1.0		-2.5	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	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	-10			A
R _{DS(on)}	Drain-Source On-Resistance	V _{GS} =-10V, I _D =-3.6A		116	130	mΩ
		V _{GS} =-4.5V, I _D =-3.2A		150	170	
g _{fs}	Forward Transconductance	V _{DS} =-5V, I _D =-4.0A		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		170		pF
C _{oss}	Output Capacitance			50		
C _{rss}	Reverse Transfer Capacitance			30		
Q _g	Total Gate Charge	V _{DS} =-15V, V _{GS} =-4.5V, I _D =-2.5A		2.5		nC
Q _{gs}	Gate-Source Charge			0.8		
Q _{gd}	Gate-Drain Charge			1.0		
t _{d(on)}	Turn-On Time	V _{DD} =-15V, R _L =7.5Ω, I _D =-2.0A, V _{GEN} =-10V, R _G =1Ω		5	10	ns
t _r				10	16	
t _{d(off)}				10	16	
t _f				5	10	

Typical Performance Characteristics

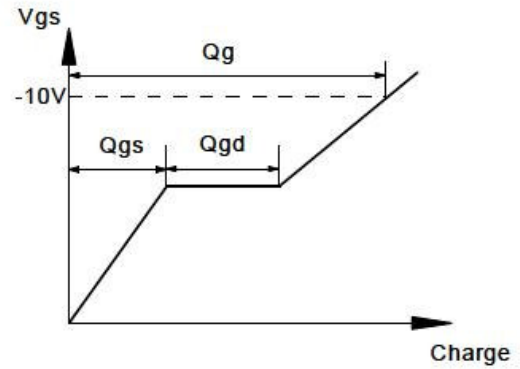
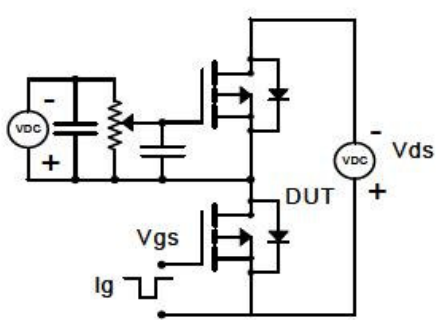


Typical Performance Characteristics (continue)

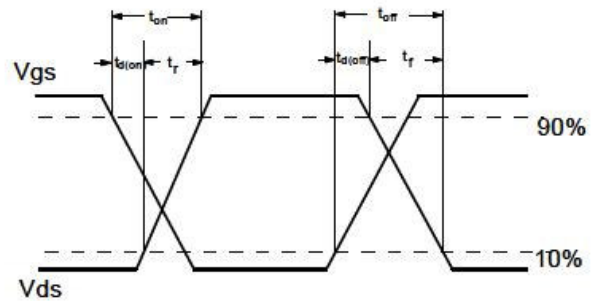
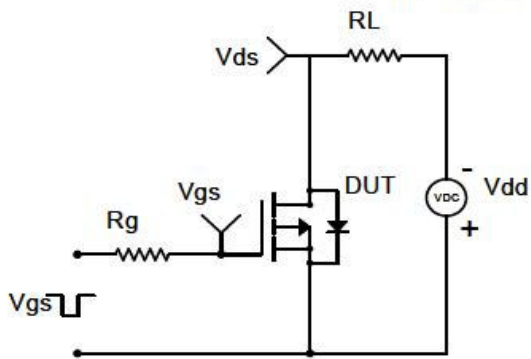


Typical Characteristics

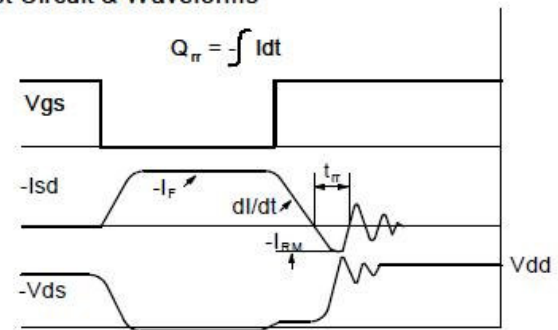
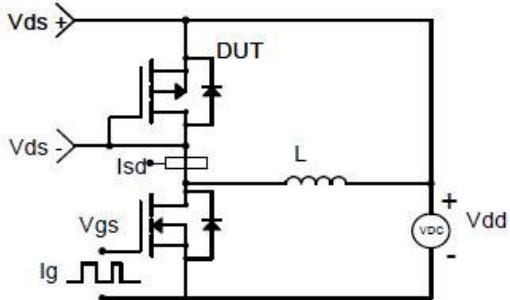
Gate Charge Test Circuit & Waveform



Resistive Switching Test Circuit & Waveforms

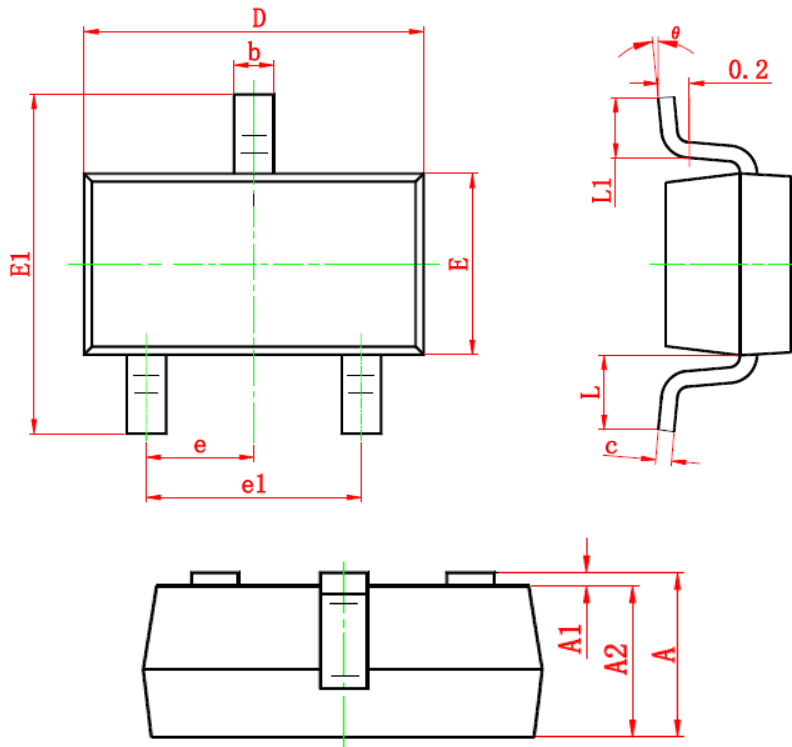


Diode Recovery Test Circuit & Waveforms



Package Dimension

SOT-23-3L







Dimensions

Symbol	Millimeters		Inches	
	Min	Max	Min	Max
A	1.050	1.250	0.041	0.049
A1	0.000	0.100	0.000	0.004
A2	1.050	1.150	0.041	0.045
b	0.300	0.400	0.012	0.016
c	0.100	0.200	0.004	0.008
D	2.820	3.020	0.111	0.119
E	1.500	1.700	0.059	0.067
E1	2.650	2.950	0.104	0.116
e	0.950 TYP		0.037 TYP	
e1	1.800	2.000	0.071	0.079
L	0.700 REF		0.028 REF	
L1	0.300	0.600	0.012	0.024
θ	0°	8°	0°	8°


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