GSM2323

30V P-Channel Enhancement Mode MOSFET

Product Description

GSM2323, 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

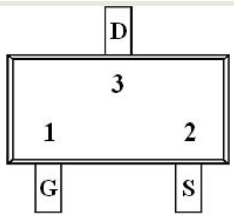
- -30V/-3.6A,$R_{DS(ON)}$=150mΩ@V_{GS}=-10V
- -30V/-3.2A,$R_{DS(ON)}$=235mΩ@V_{GS}=-4.5V
- Super high density cell design for extremely low $R_{DS\ (ON)}$
- Exceptional on-resistance and maximum DC current capability
- SOT-23-3L package design

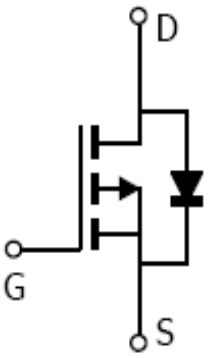
Applications

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

Packages & Pin Assignments

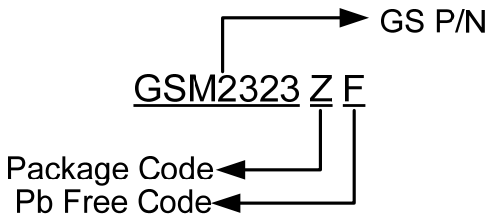
GSM2323ZF(SOT-23-3L)



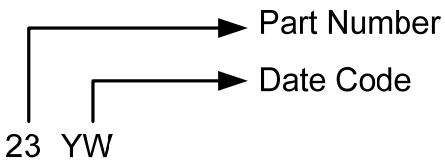


Pin	Description
1	Gate
2	Source
3	Drain

Ordering Information



Marking Information



Part Number	Package	Part Marking	Quantity
GSM2323ZF	SOT-23-3L	23YW	3000pcs

Absolute Maximum Ratings

T_A=25 ºC unless otherwise noted

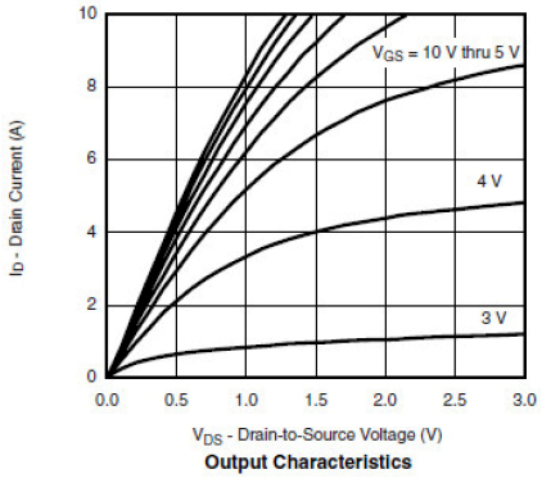
Symbol	Parameter		Typical	Unit
V_{DSS}	Drain-Source Voltage		-30	V
V_{GSS}	Gate –Source Voltage		±20	V
I_D	Continuous Drain Current(T_J=150ºC)	T_A=25ºC	-3.6	A
		T_A=70ºC	-3.2	
I_{DM}	Pulsed Drain Current		-15	A
I_S	Continuous Source Current(Diode Conduction)		-1.5	A
P_D	Power Dissipation	T_A=25ºC	1.25	W
		T_A=70ºC	0.8	
T_J	Operating Junction Temperature		150	ºC
T_{STG}	Storage Temperature Range		-55/150	ºC
$R_{\theta JA}$	Thermal Resistance-Junction to Ambient		120	ºC/W

Electrical Characteristics

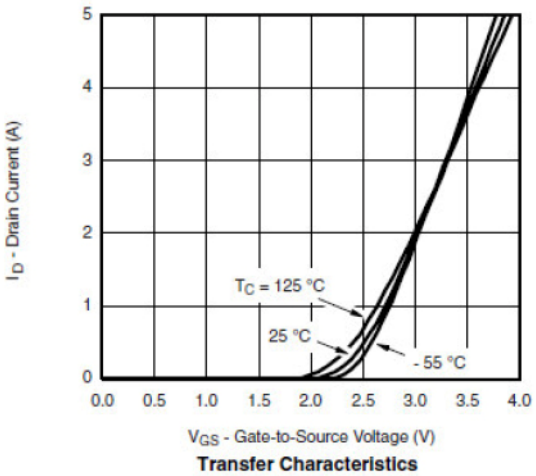
T_A=25ºC unless otherwise noted

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	-1.6		-2.6	
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℃			-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		135	150	mΩ
		V_{GS}=-4.5V,I_D=-3.2A		215	235	
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						
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		
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		
$t_{d(on)}$	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	
$t_{d(off)}$	Turn-Off Time			10	16	
t_f				5	10	

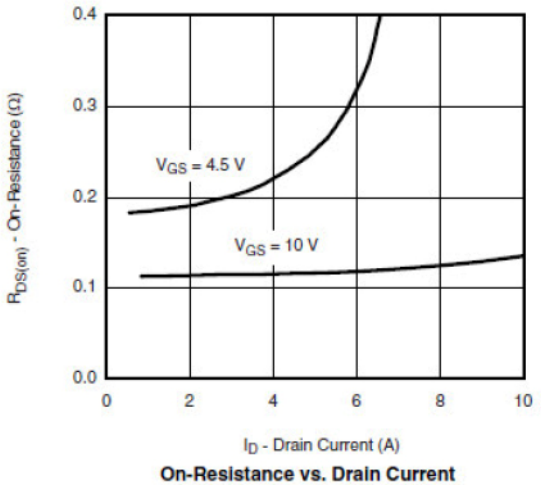
Typical Performance Characteristics



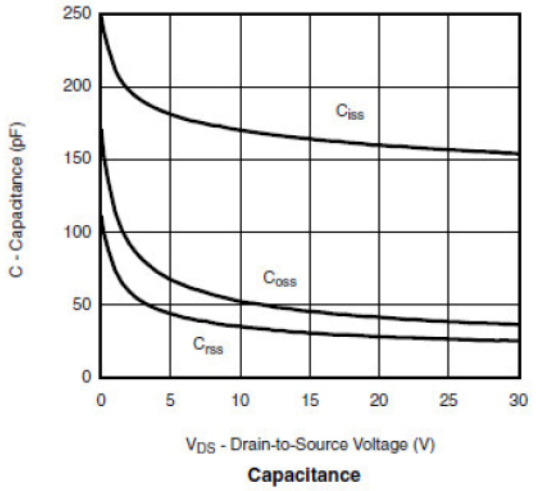
Output Characteristics



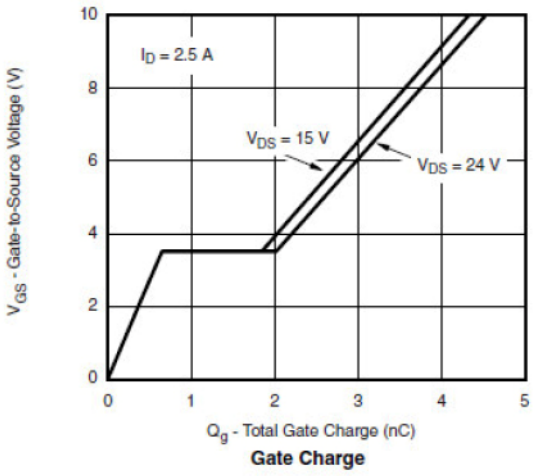
Transfer Characteristics



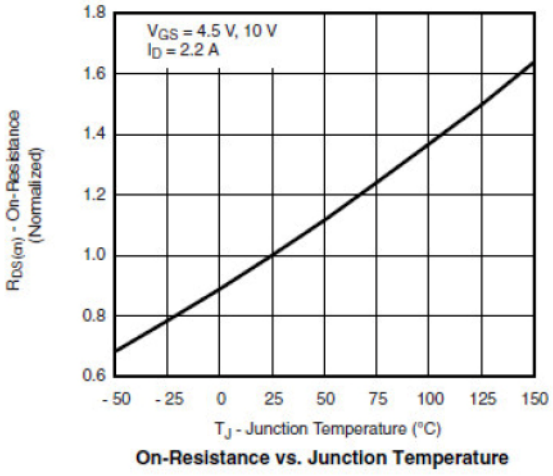
On-Resistance vs. Drain Current



Capacitance

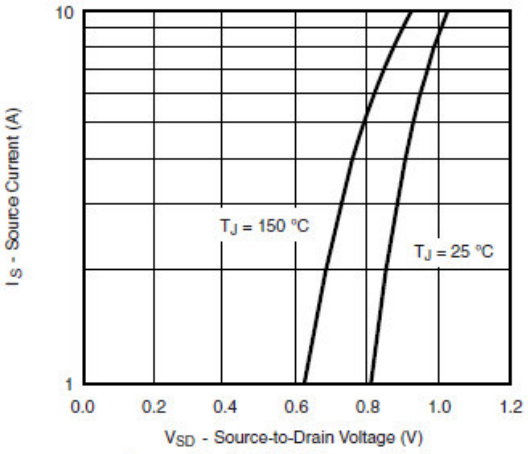


Gate Charge

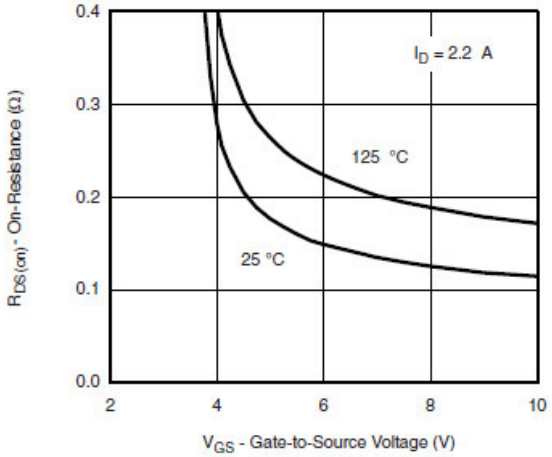


On-Resistance vs. Junction Temperature

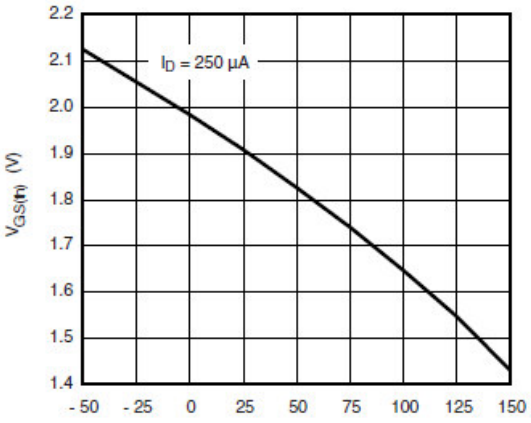
Typical Performance Characteristics (continue)



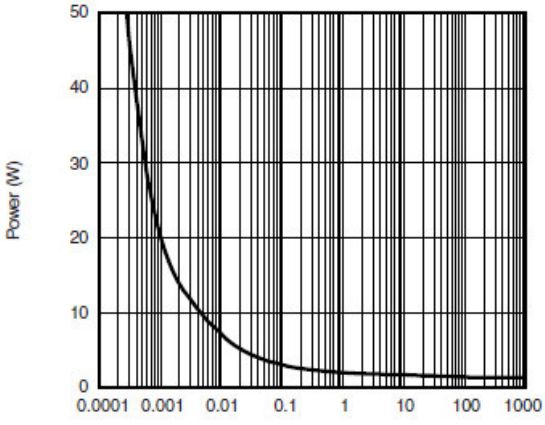
Source-Drain Diode Forward Voltage



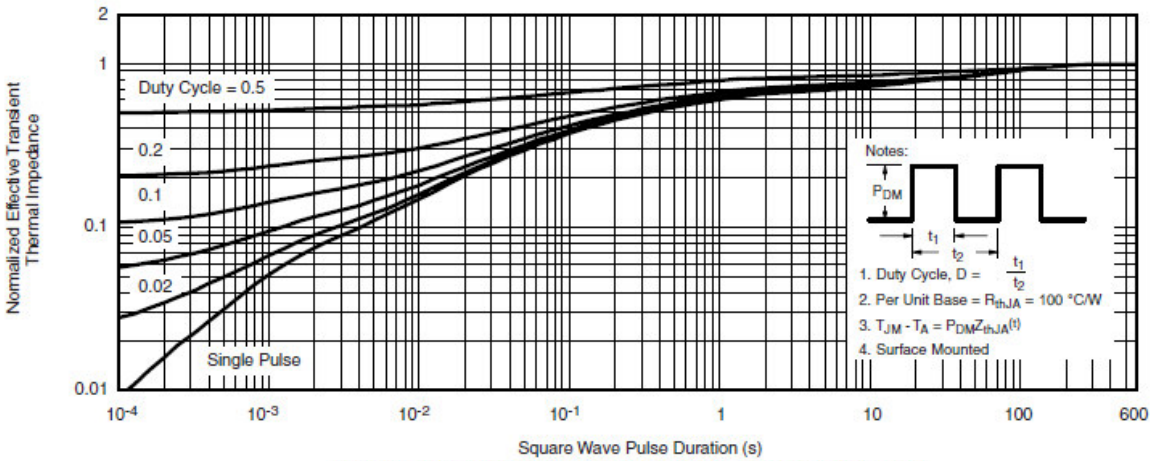
On-Resistance vs. Gate-to-Source Voltage



Threshold Voltage



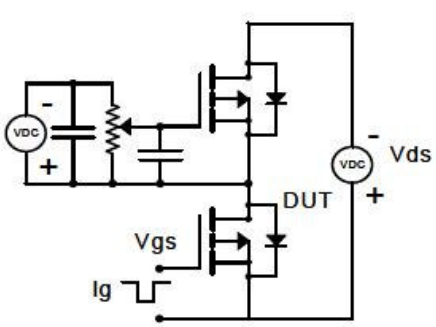
Single Pulse Power

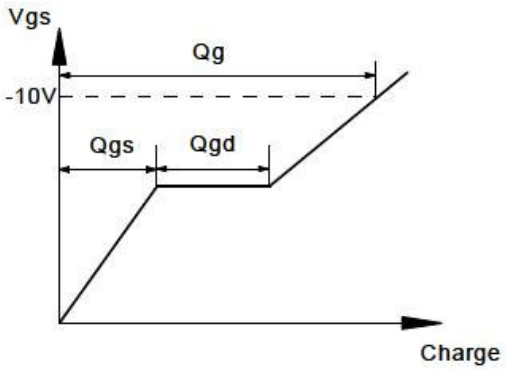


Normalized Thermal Transient Impedance, Junction-to-Ambient

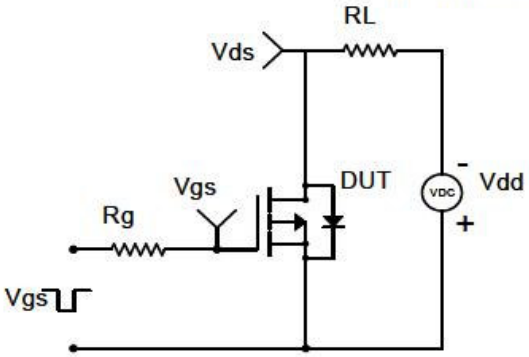
Typical Performance Characteristics (continue)

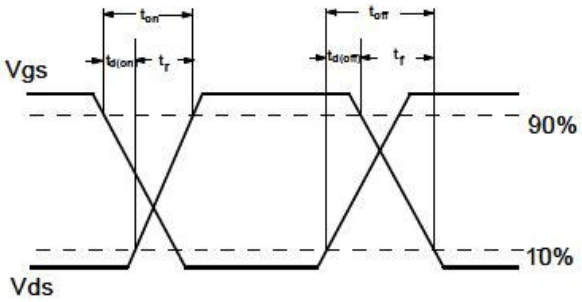
Gate Charge Test Circuit & Waveform



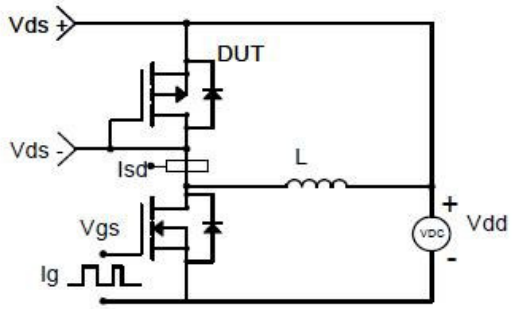


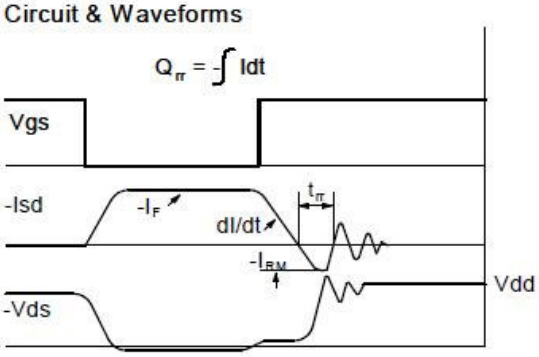
Resistive Switching Test Circuit & Waveforms





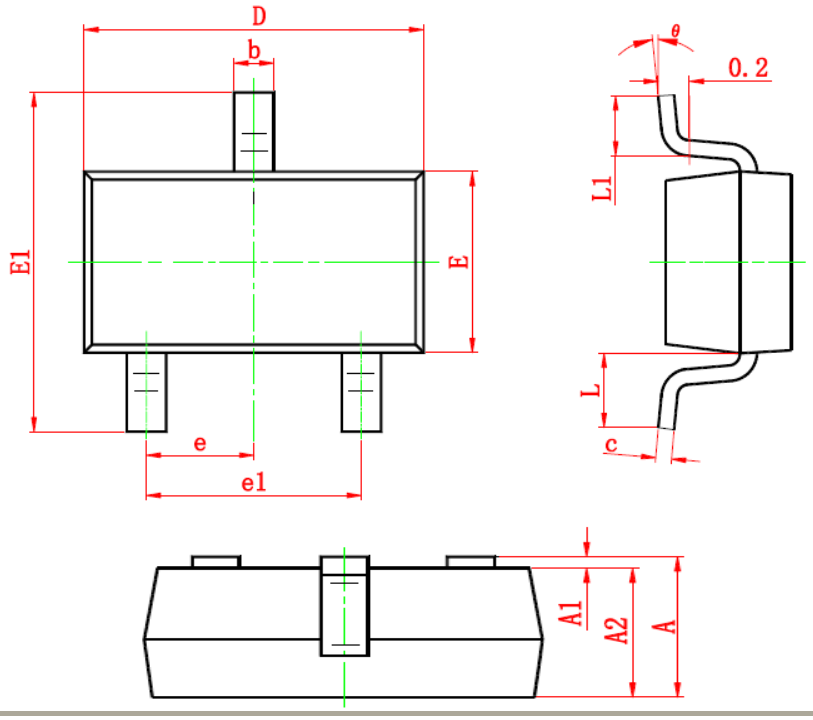
Diode Recovery Test Circuit & Waveforms





Package Dimension

SOT-23-3L



Dimensions				
Symbol	Millimeters		Inches	
	Min	Max	Min	Max
A	1.050	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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