GSM2341

P-Channel Enhancement Mode MOSFET

Product Description

GSM2341, 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

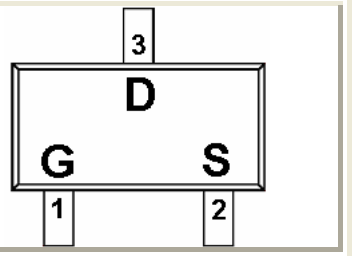
- -20V/-3.0A,$R_{DS(ON)}$= 50mΩ@VGS=-4.5V
- -20V/-2.6A,$R_{DS(ON)}$= 64mΩ@VGS=-2.5V
- -20V/-2.0A,$R_{DS(ON)}$= 80mΩ@VGS=-1.8V
- Super high density cell design for extremely low $R_{DS(ON)}$
- Exceptional on-resistance and maximum DC
- current capability
- SOT-23-3L package design

Applications

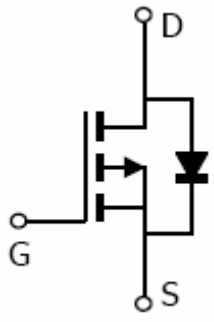
- Portable Equipment
- Battery Powered System
- Net Working System

Packages & Pin Assignments

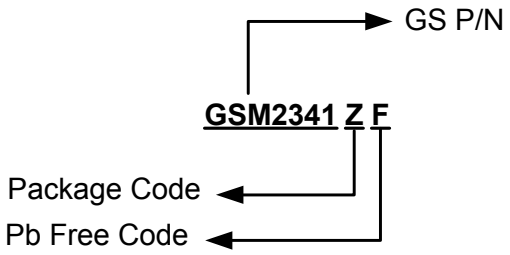
GSM2341ZF (SOT-23-3L)



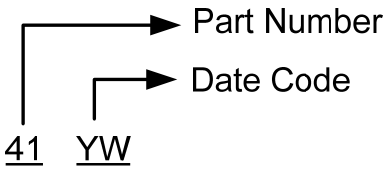
1	Gate
2	Source
3	Drain



Ordering Information



Marking Information



Part Number	Package	Part Marking
GSM2341ZF	SOT-23-3L	41YW

※Week Code : A ~ Z(1 ~ 26) ; a ~ z(27 ~ 52)

Absolute Maximum Ratings

T_A=25ºC Unless otherwise noted

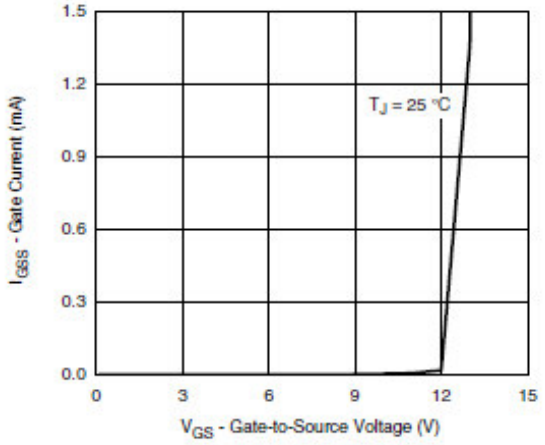
Symbol	Parameter		Typical	Unit
V_{DSS}	Drain-Source Voltage		-20	V
V_{GSS}	Gate –Source Voltage		±12	V
I_D	Continuous Drain Current(T_J=150ºC)	T_A=25 ºC	-3.0	A
		T_A=70 ºC	-2.6	
I_{DM}	Pulsed Drain Current		-10	A
I_S	Continuous Source Current(Diode Conduction)		-1.6	A
P_D	Power Dissipation	T_A=25 ºC	1.25	W
		T_A=70 ºC	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

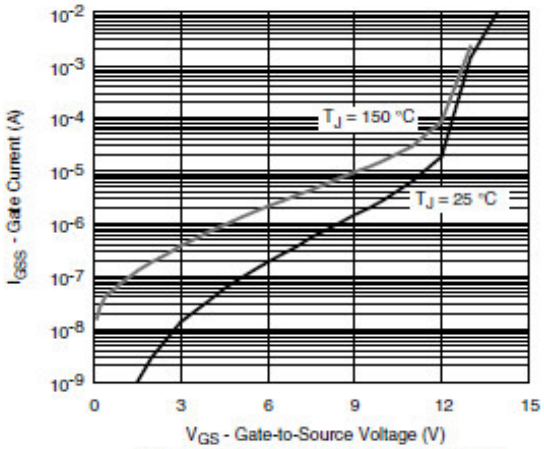
T_A=25ºC Unless otherwise noted

Symbol	Parameter	Conditions	Min	Typ	Max	Unit
Static						
$V_{(BR)DSS}$	Drain-Source Breakdown Voltage	V_{GS}=0V,I_D=-250uA	-20			V
$V_{GS(th)}$	Gate Threshold Voltage	V_{DS}=V_{GS},I_D=-250uA	-0.4		-0.8	
I_{GSS}	Gate Leakage Current	V_{DS}=0V,V_{GS}=±12V			±100	nA
I_{DSS}	Zero Gate Voltage Drain Current	V_{DS}=-16V,V_{GS}=0V			-1	uA
		V_{DS}=-16V,V_{GS}=0V T_J=85℃			-10	
$I_{D(on)}$	On-State Drain Current	V_{DS}≧-5V,V_{GS}=-4.5V	-6			A
		V_{DS}≧-5V,V_{GS}=-2.5V	-4			
$R_{DS(on)}$	Drain-Source On-Resistance	V_{GS} = -4.5V,I_D=-3.0A		45	50	mΩ
		V_{GS} =-2.5V,I_D=-2.6A		56	64	
		V_{GS} =-1.0V,I_D=-2.0A		70	80	
g_{FS}	Forward Transconductance	V_{DS}=-5V,I_D=-3.6A		10		S
V_{SD}	Diode Forward Voltage	I_S=-1.6A,V_{GS}=0V		-0.85	-1.2	V
Dynamic						
Q_g	Total Gate Charge	V_{DS}=-10V,V_{GS}=-4.5V, I_D=-4.0A		8	12	nC
Q_{gs}	Gate-Source Charge			0.9		
Q_{gd}	Gate-Drain Charge			3.0		
C_{iss}	Input Capacitance	V_{DS}=-10V,V_{GS}=0V, f=1MHz		780		pF
C_{oss}	Output Capacitance			115		
C_{rss}	Reverse Transfer Capacitance			55		
$t_{d(on)}$	Turn-On Time	V_{DD}=-10V,R_L=2.3Ω, I_D=-4.0A,V_{GEN}=-4.5V, R_G=-1Ω		0.2	0.3	us
t_r				1.0	1.5	
$t_{d(off)}$	Turn-Off Time			4.0	6.0	
t_f				2.0	3.0	

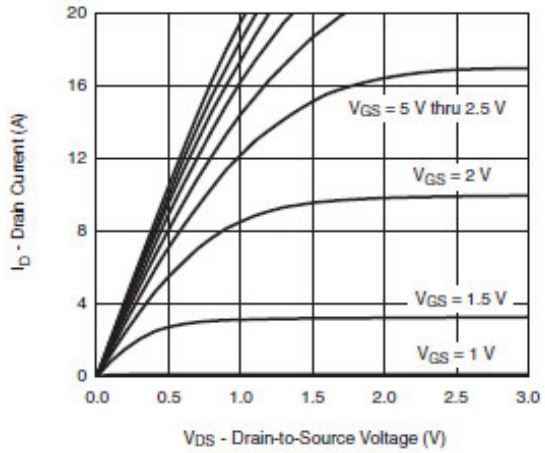
Typical Performance Characteristics



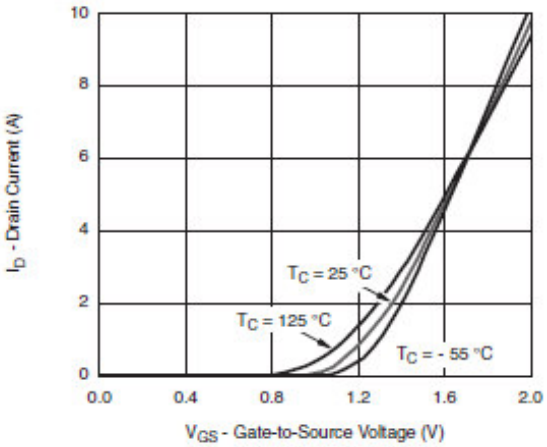
Gate Current vs. Gate-Source Voltage



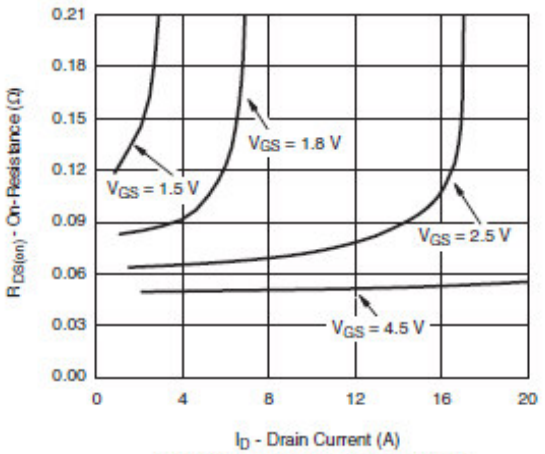
Gate Current vs. Gate-Source Voltage



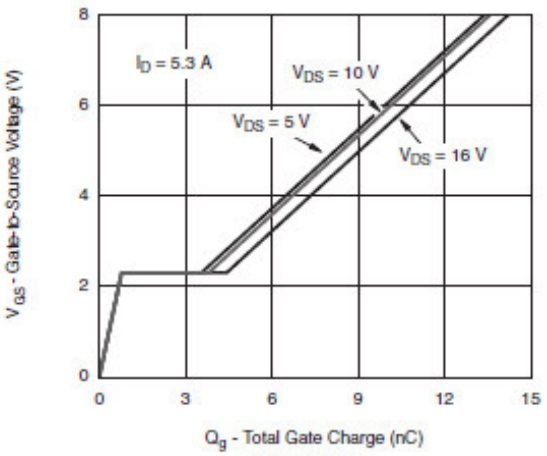
Output Characteristics



Transfer Characteristics

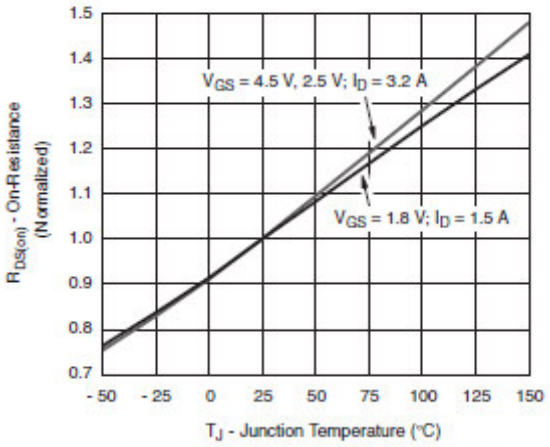


On-Resistance vs. Drain Current

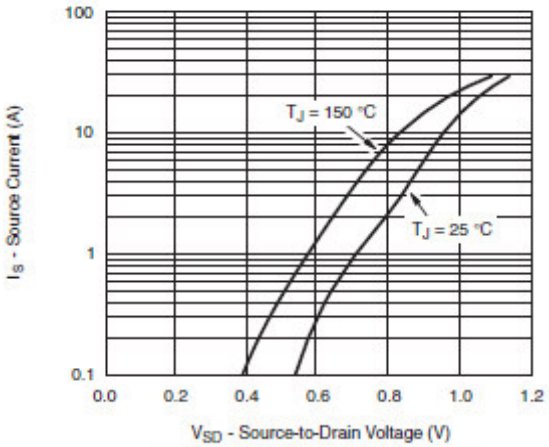


Gate Charge

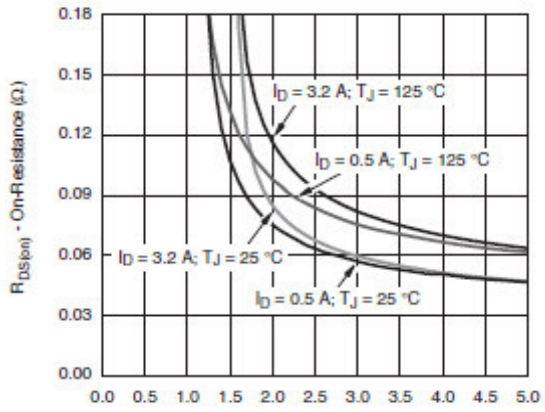
Typical Performance Characteristics



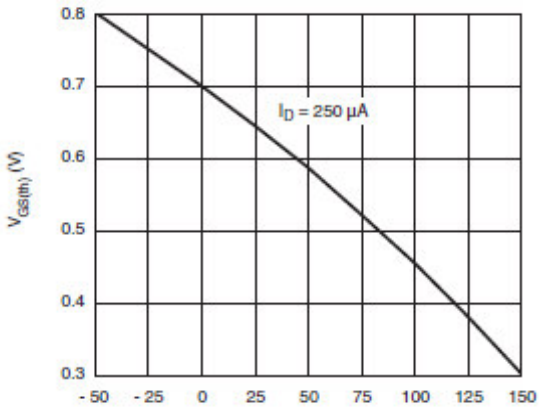
On-Resistance vs. Junction Temperature



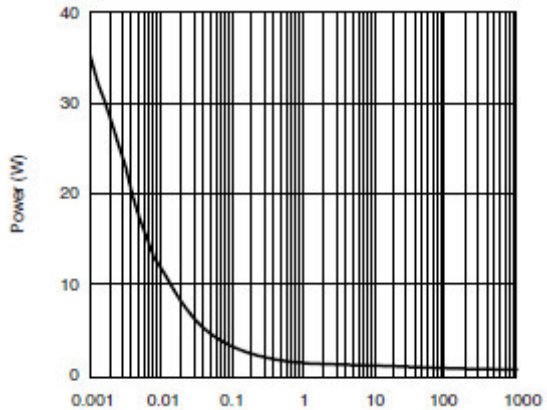
Soure-Drain Diode Forward Voltage



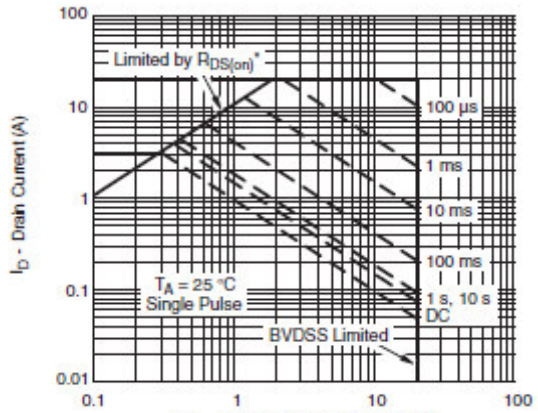
On-Resistance vs. Gate-to-Source Voltage



Threshold Voltage



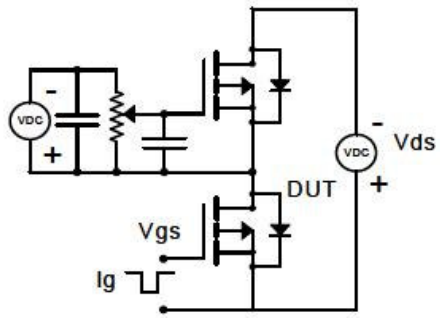
Single Pulse Power, Junction-to-Ambient

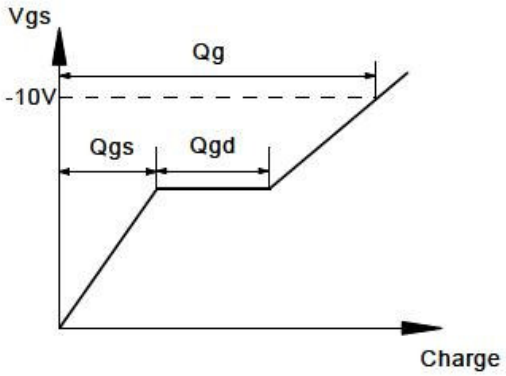


Safe Operating Area, Junction-to-Ambient

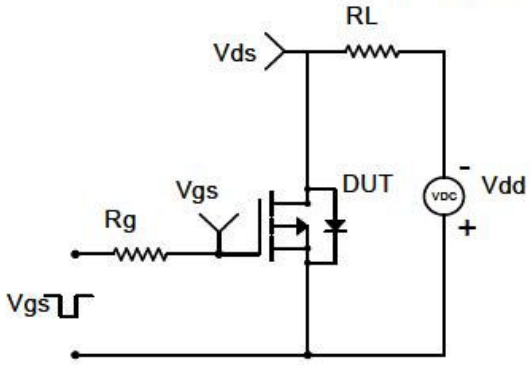
Typical Performance Characteristics

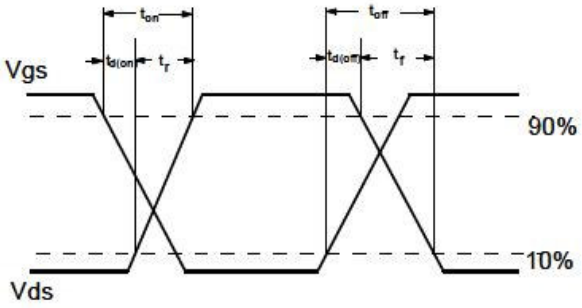
Gate Charge Test Circuit & Waveform



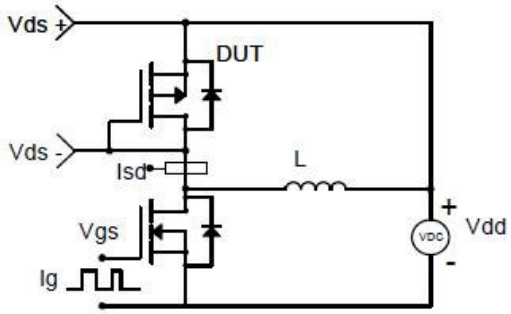


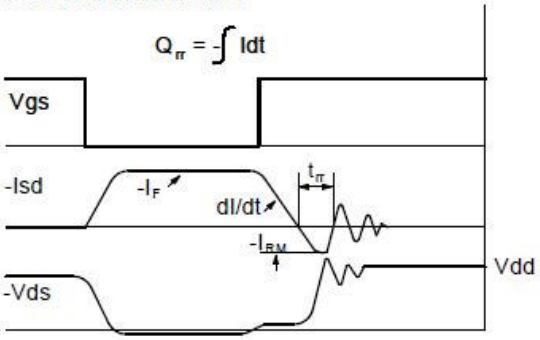
Resistive Switching Test Circuit & Waveforms





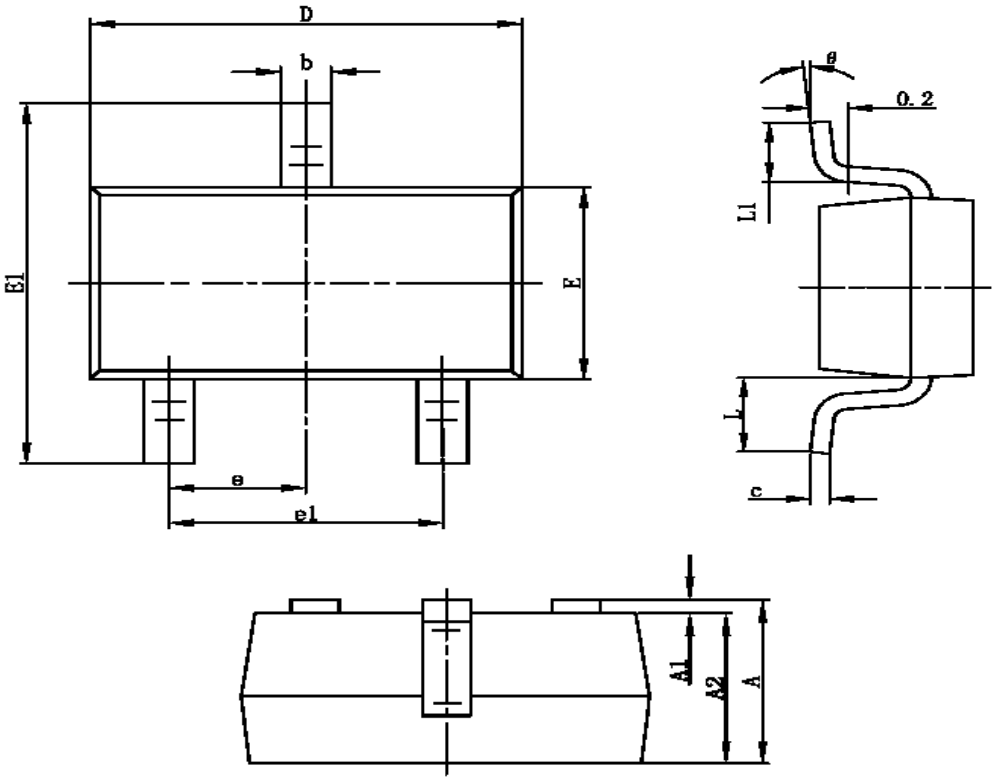
Diode Recovery Test Circuit & Waveforms





Package Dimension

SOT-23-3L



Symbol	Dimensions In Millimeters		Dimensions In 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	2.400	2.950	0.104	0.116
e	0.950TYP		0.037TYP	
e1	1.800	2.000	0.071	0.079
L	0.700REF		0.028REF	
L1	0.300	0.600	0.012	0.024
θ	0 °C	8 °C	0 °C	8 °C

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