GSM2336A

30V N-Channel Enhancement Mode MOSFET

Product Description

GSM2336A, N-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

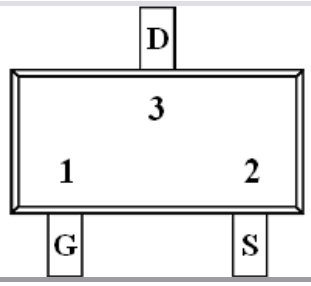
- 30V/1.8A,$R_{DS(ON)}$=380mΩ@V_{GS}=4.5V
- 30V/1.5A,$R_{DS(ON)}$=480mΩ@V_{GS}=2.5V
- 30V/1.2A,$R_{DS(ON)}$=900mΩ@V_{GS}=1.8V
- Super high density cell design for extremely low $R_{DS(ON)}$
- Exceptional on-resistance and maximum DC current capability
- SOT-23 package design

Applications

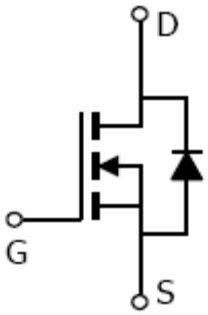
- Direct Logic-Level Interface: TTL/CMOS
- Drivers: Relays, Solenoids, Lamps, Hammers
- Battery Operated Systems, DC/DC Converters
- Solid-State Relays
- Load/Power Switching-Cell Phones, Pagers

Packages & Pin Assignments

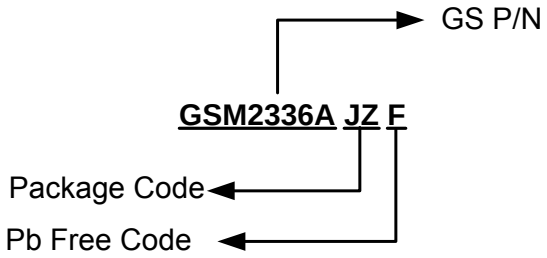
GSM2336AJZF (SOT-23)



Pin	Description
1	Gate
2	Source
3	Drain

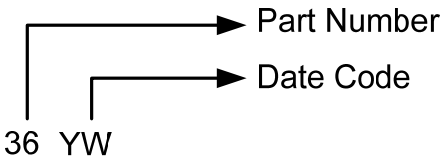


Ordering Information



Part Number	Package	Quantity Reel
GSM2336AJZF	SOT-23	3000 PCS

Marking Information



Absolute Maximum Ratings

(T_A=25ºC unless otherwise noted)

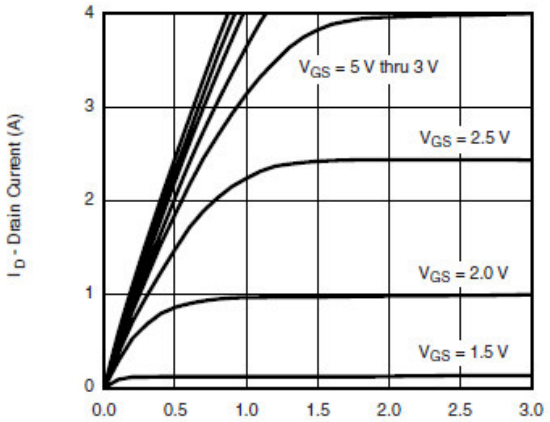
Symbol	Parameter		Typical	Unit
V_{DSS}	Drain-Source Voltage		30	V
V_{GSS}	Gate –Source Voltage		±12	V
I_D	Continuous Drain Current(T_J=150℃)	T_A=25ºC	1.8	A
		T_A=70ºC	1.2	
I_{DM}	Pulsed Drain Current		6	A
I_S	Continuous Source Current(Diode Conduction)		1	A
P_D	Power Dissipation	T_A=25ºC	1.25	W
		T_A=70ºC	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

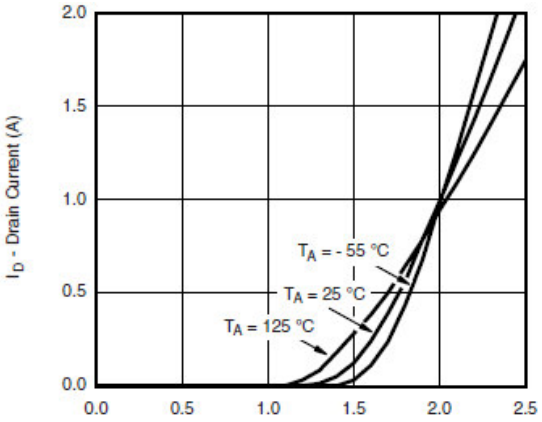
(T_A=25ºC unless otherwise noted)

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	0.5		1.0	
I_{GSS}	Gate Leakage Current	V_{DS}=0V,V_{GS}=±12V			±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=85ºC			5	
$I_{D(on)}$	On-State Drain Current	V_{DS}≥5V,V_{GS}=4.5V	1.8			A
$R_{DS(on)}$	Drain-Source On-Resistance	V_{GS}=4.5V,I_D=1.8A		350	380	mΩ
		V_{GS}=2.5V,I_D=1.5A		450	480	
		V_{GS}=1.8V,I_D=0.5A		850	900	
g_{FS}	Forward Transconductance	V_{DS}=10V,I_D=1.0A		1		S
V_{SD}	Diode Forward Voltage	I_S=1.0A,V_{GS}=0V		0.65	1.2	V
Dynamic						
C_{iss}	Input Capacitance	V_{DS}=15V, V_{GS}=0V,f=1MHz		85		pF
C_{oss}	Output Capacitance			25		
C_{rss}	Reverse Transfer Capacitance			15		
Q_g	Total Gate Charge	V_{DS}=15V, V_{GS}=4.5V, I_D=1.2A		1.4	1.8	nC
Q_{gs}	Gate-Source Charge			0.3		
Q_{gd}	Gate-Drain Charge			0.6		
$t_{d(on)}$	Turn-On Time	V_{DD}=15V, R_L=20Ω,I_D=1.2A, V_{GEN}=4.5V,R_G=1Ω		15	25	ns
t_r				25	45	
$t_{d(off)}$	Turn-Off Time			15	25	
t_f				10	20	

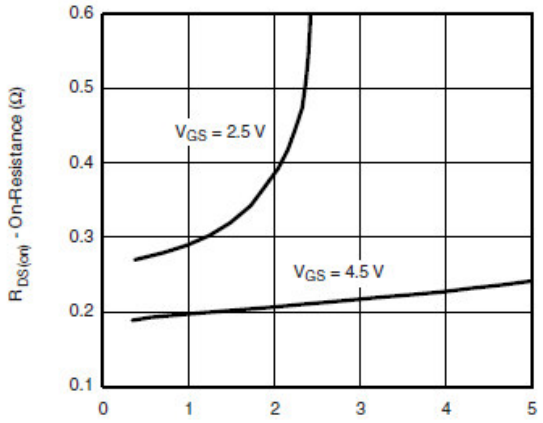
Typical Performance Characteristics



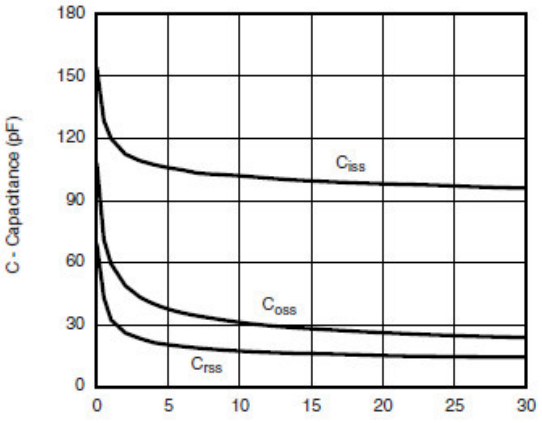
Output Characteristics



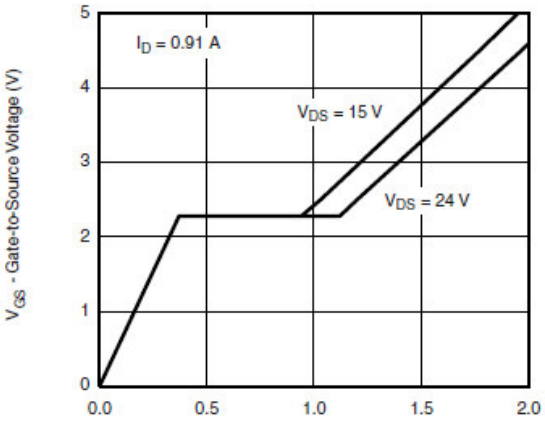
Transfer Characteristics Curves vs. Temperature



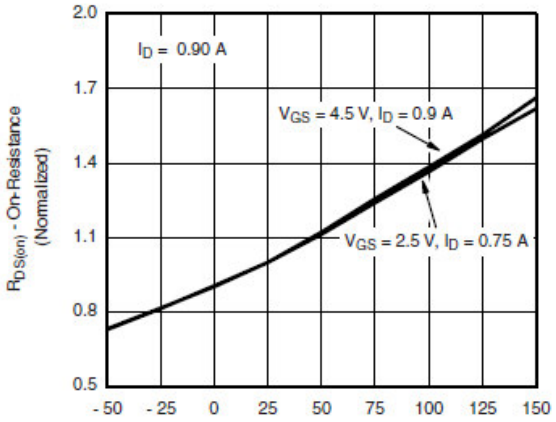
On-Resistance vs. Drain Current



Capacitance

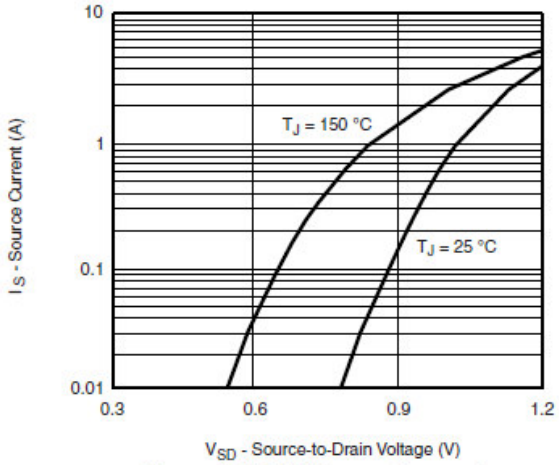


Gate Charge

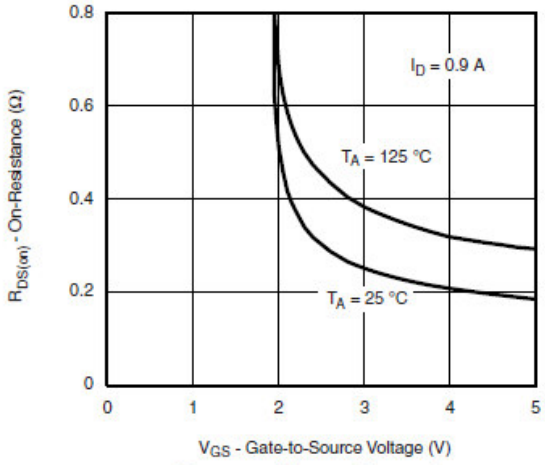


On-Resistance vs. Junction Temperature

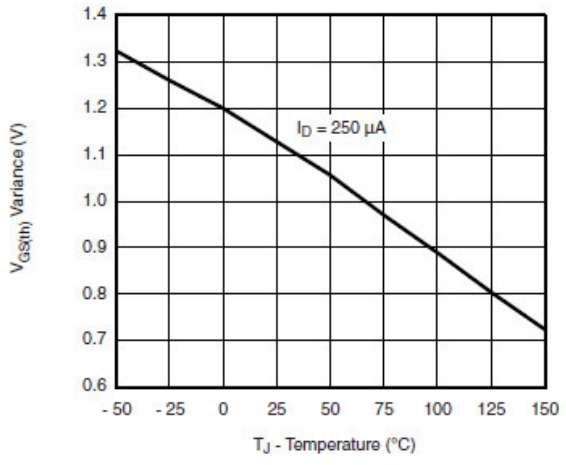
Typical Performance Characteristics (continue)



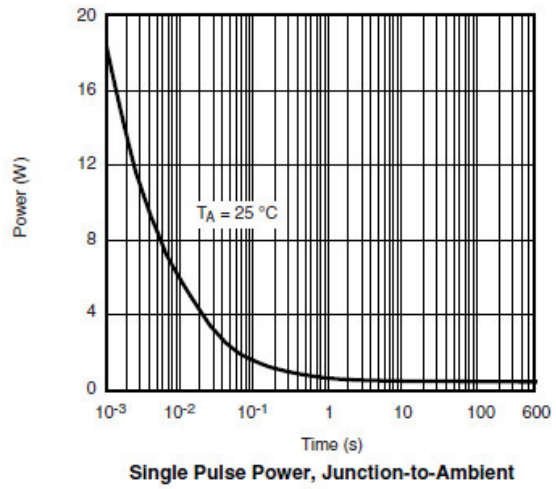
Forward Diode Voltage vs. Temperature



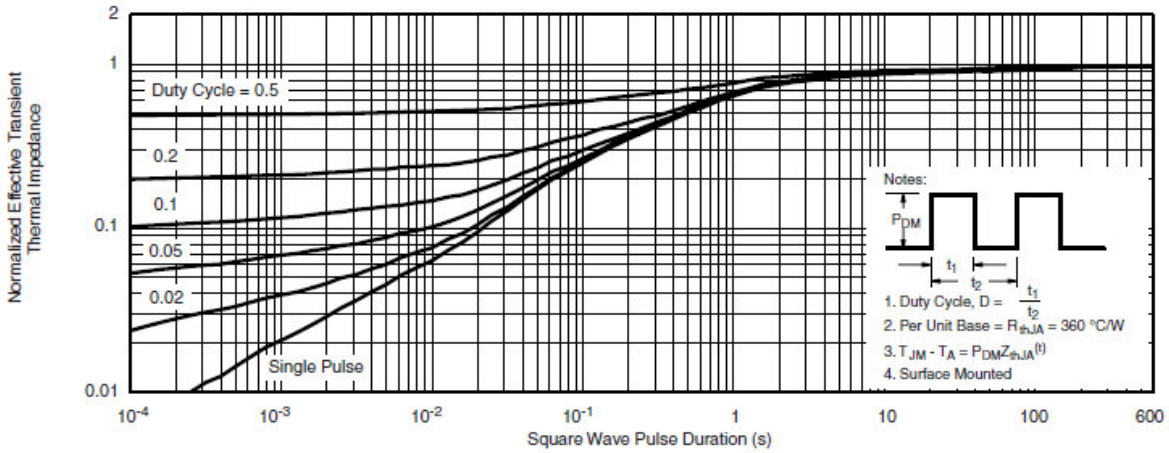
$R_{DS(on)}$ vs. V_{GS} vs. Temperature



Threshold Voltage



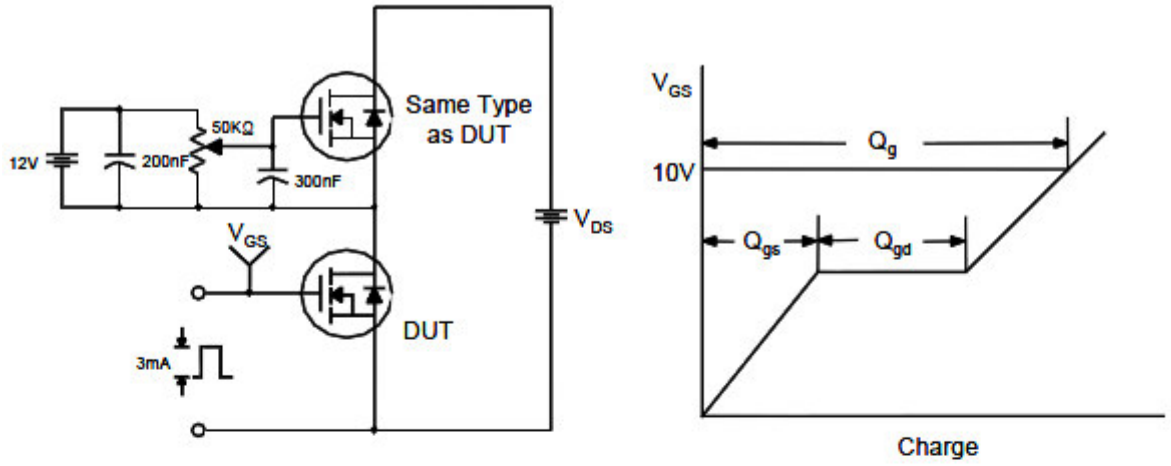
Single Pulse Power, Junction-to-Ambient



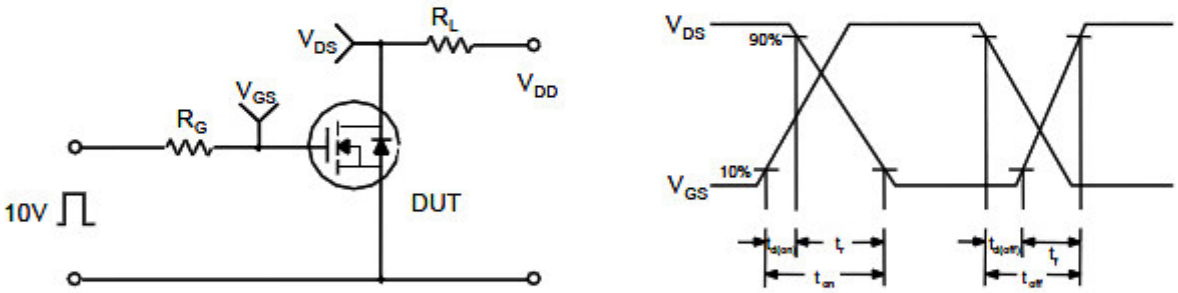
Normalized Thermal Transient Impedance, Junction-to-Ambient

Typical Performance Characteristics (continue)

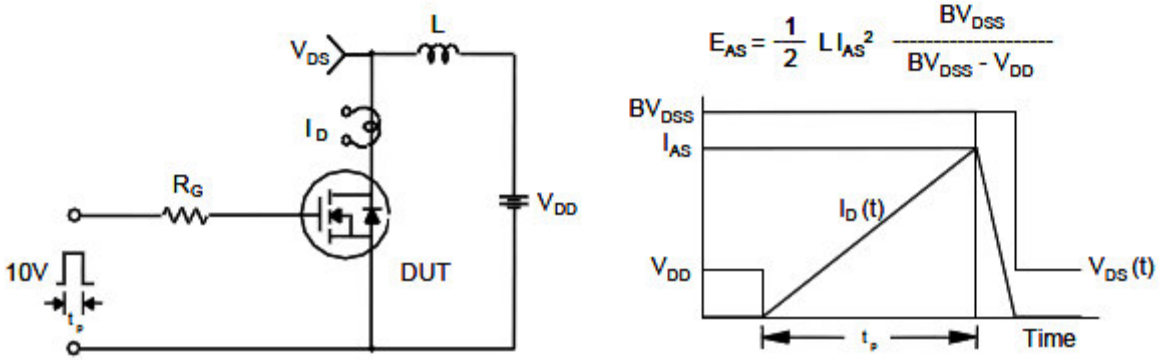
Gate Charge Test Circuit & Waveform



Resistive Switching Test Circuit & Waveforms

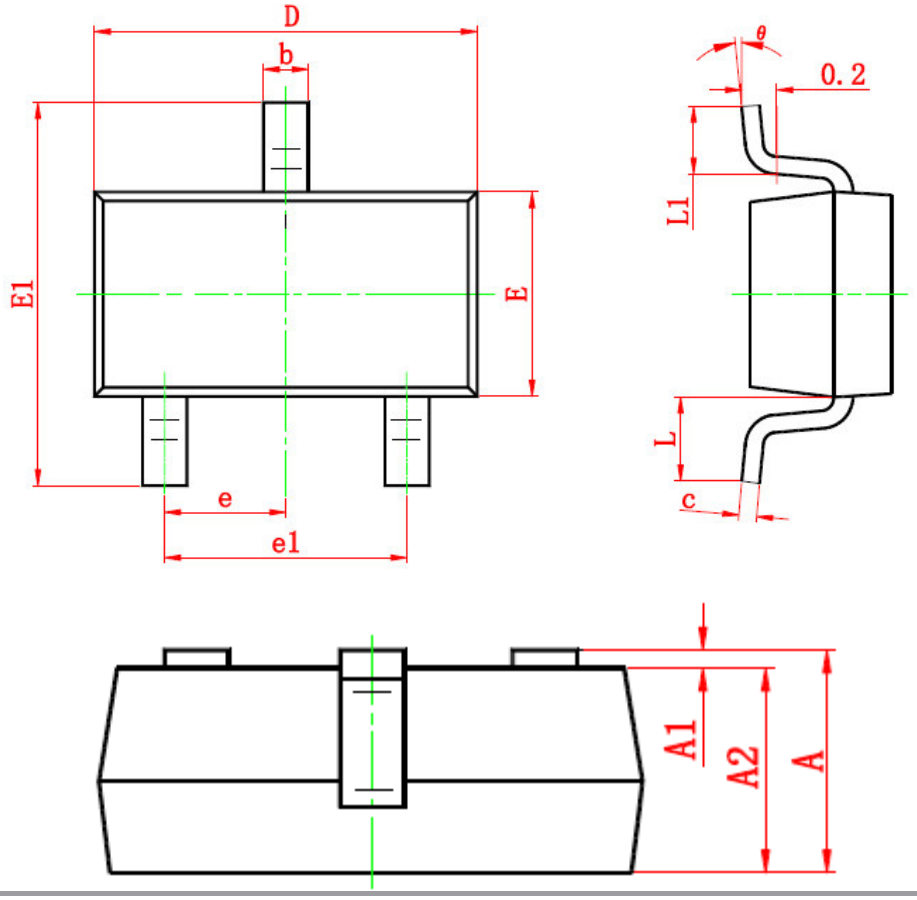


Unclamped Inductive Switching Test Circuit & Waveforms



Package Dimension

SOT-23 PLASTIC PACKAGE



Dimensions				
SYMBOL	Millimeters		Inches	
	MIN	MAX	MIN	MAX
A	0.90	1.20	0.035	0.043
A1	0.00	0.10	0.000	0.004
A2	0.90	1.10	0.035	0.039
b	0.30	0.50	0.012	0.020
c	0.08	0.15	0.003	0.006
D	2.80	3.00	0.110	0.118
E	1.20	1.40	0.047	0.055
E1	2.25	2.55	0.089	0.100
e	0.950 (TYP)		0.037 (TYP)	
e1	1.80	2.00	0.071	0.079
L	0.550 (REF)		0.022 (REF)	
L1	0.30	0.50	0.012	0.020
Q	0°	8°	0°	8°

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