GSM8968

100V N-Channel Enhancement Mode MOSFET

Product Description

GSM8968, 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, and low inline power loss are needed in commercial industrial surface mount applications.

Features

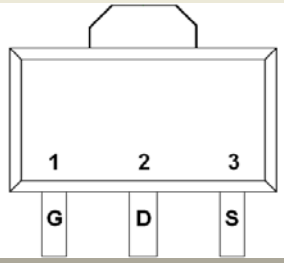
- 100V/3.0A,$R_{DS(ON)}$=300mΩ@V_{GS}=10V
- 100V/2.0A,$R_{DS(ON)}$=310mΩ@ V_{GS}=4.5V
- Super high density cell design for extremely low $R_{DS(ON)}$
- SOT-89-3L package design

Applications

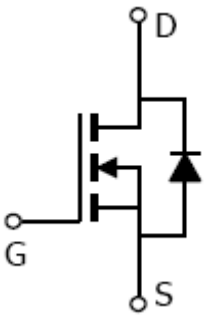
- Motor and Load Control
- Power Management in White LED System
- Push Pull Converter
- LCD TV Inverter & AD/DC Inverter Systems.

Packages & Pin Assignments

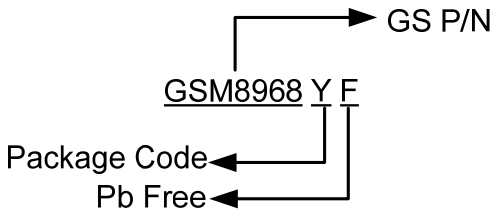
GSM8968YF(SOT-89-3L)



Pin	Description
1	Gate
2	Drain
3	Source

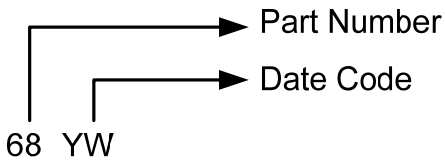


Ordering Information



Part Number	Package	Quantity Reel
GSM8968YF	SOT-89-3L	1000 PCS

Marking Information



Absolute Maximum Ratings

T_A=25ºC Unless otherwise noted

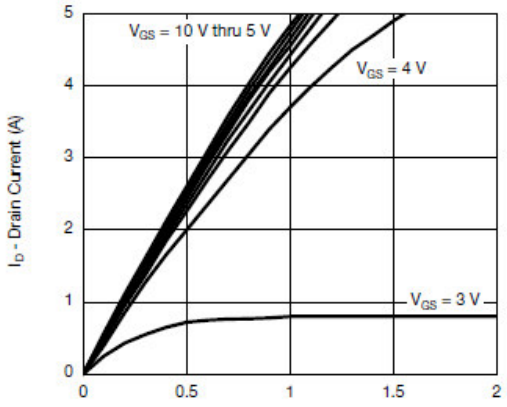
Symbol	Parameter		Typical	Unit
V_{DSS}	Drain-Source Voltage		100	V
V_{GSS}	Gate –Source Voltage		±20	V
I_D	Continuous Drain Current(T_J=150ºC)	T_A =25ºC	3.0	A
		T_A =70ºC	2.0	
I_{DM}	Pulsed Drain Current		6	A
I_S	Continuous Source Current(Diode Conduction)		1.6	A
P_D	Power Dissipation	T_A =25ºC	1.45	W
		T_A =70ºC	0.6	
T_J	Operating Junction Temperature		150	ºC
T_{STG}	Storage Temperature Range		-55 to150	ºC
$R_{\theta JA}$	Thermal Resistance-Junction to Ambient		120	ºC/W

Electrical Characteristics

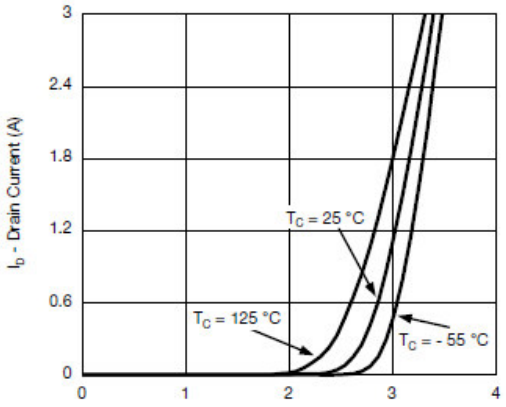
T_A=25ºC Unless otherwise noted

Symbol	Parameter	Conditions	Min	Typ	Max	Unit
Static						
$V_{(BR)DSS}$	Drain-Source Breakdown Voltage	V_{GS}=0V,I_D= 250uA	100			V
$V_{GS(th)}$	Gate Threshold Voltage	V_{DS}=V_{GS},I_D= 250uA	1.0		2.0	
I_{GSS}	Gate Leakage Current	V_{DS}=0V,V_{GS}= ±20V			±100	nA
I_{DSS}	Zero Gate Voltage Drain Current	V_{DS}= 80V,V_{GS}=0V			1	uA
		V_{DS}=80V,V_{GS}=0V, T_J=85℃			10	
$I_{D(on)}$	On-State Drain Current	V_{DS}≧5V,V_{GS}= 4.5V	5			A
$R_{DS(on)}$	Drain-Source On-Resistance	V_{GS}= 10V,I_D= 3.0A		280	300	mΩ
		V_{GS}= 4.5V,I_D= 2.0A		290	310	
g_{FS}	Forward Transconductance	V_{DS}= 20V,I_D= 1.5A		2		S
V_{SD}	Diode Forward Voltage	I_S= 1.3A,V_{GS}=0V		0.85	1.2	V
Dynamic						
Q_g	Total Gate Charge	V_{DS}=50V, V_{GS}=4.5V,I_D=1.6A		2.8	5.8	nC
Q_{gs}	Gate-Source Charge			0.75		
Q_{gd}	Gate-Drain Charge			1.4		
C_{iss}	Input Capacitance	V_{DS}=50V, V_{GS}=0V,f=1MHz		200		pF
C_{oss}	Output Capacitance			22		
C_{rss}	Reverse Transfer Capacitance			13		
$t_{d(on)}$	Turn-On Time	V_{DD}=50V, R_L=39Ω,I_D=1.3A, V_{GEN}=4.5V,R_G=1Ω		25	50	ns
t_r				20	50	
$t_{d(off)}$	Turn-Off Time			15	30	
t_f				10	25	

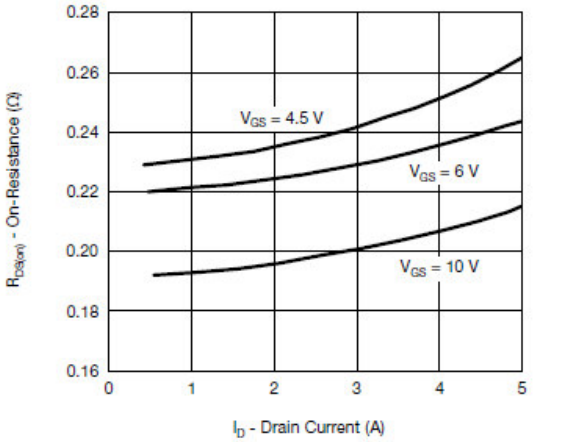
Typical Performance Characteristics



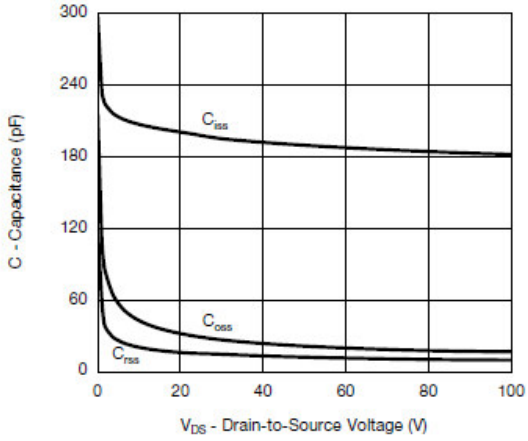
Output Characteristics



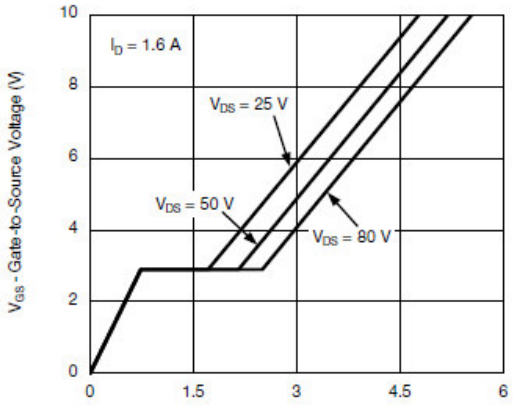
Transfer Characteristics



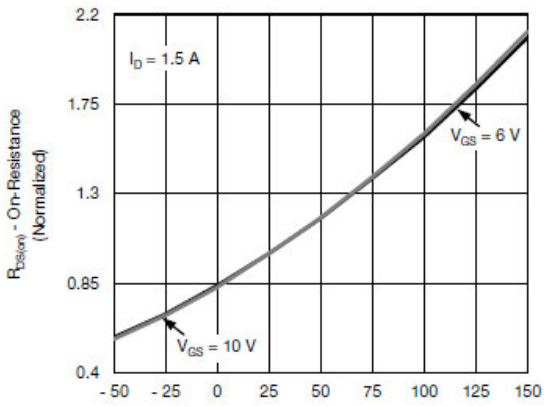
On-Resistance vs. Drain Current and Gate Voltage



Capacitance

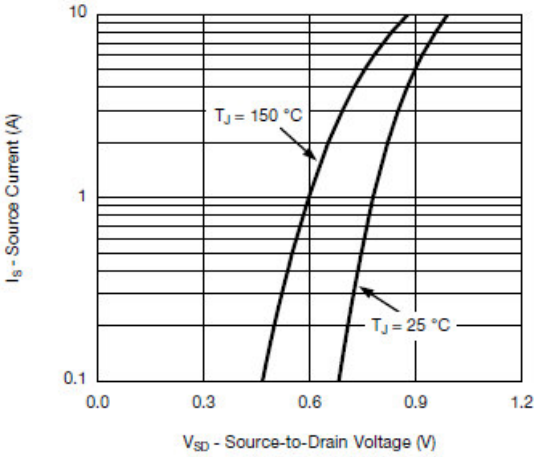


Gate Charge

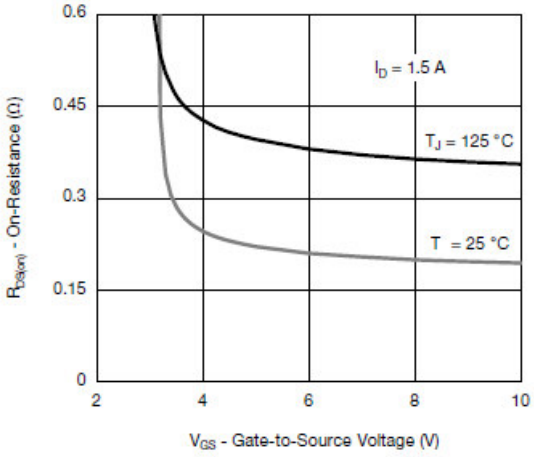


On-Resistance vs. Junction Temperature

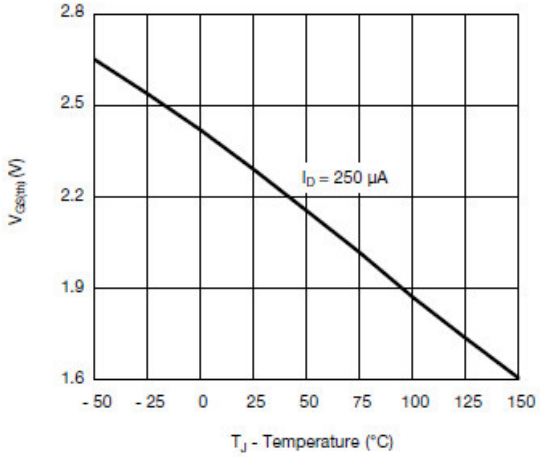
Typical Performance Characteristics (continue)



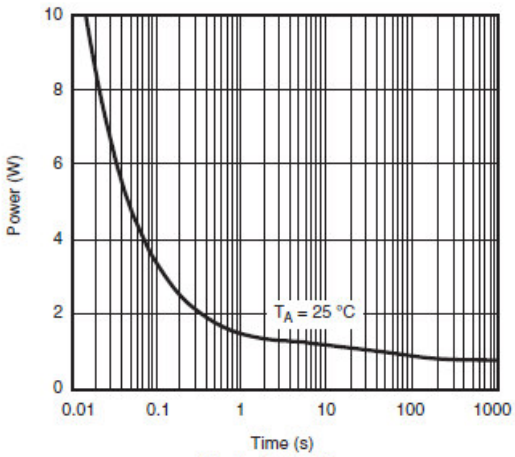
Source-Drain Diode Forward Voltage



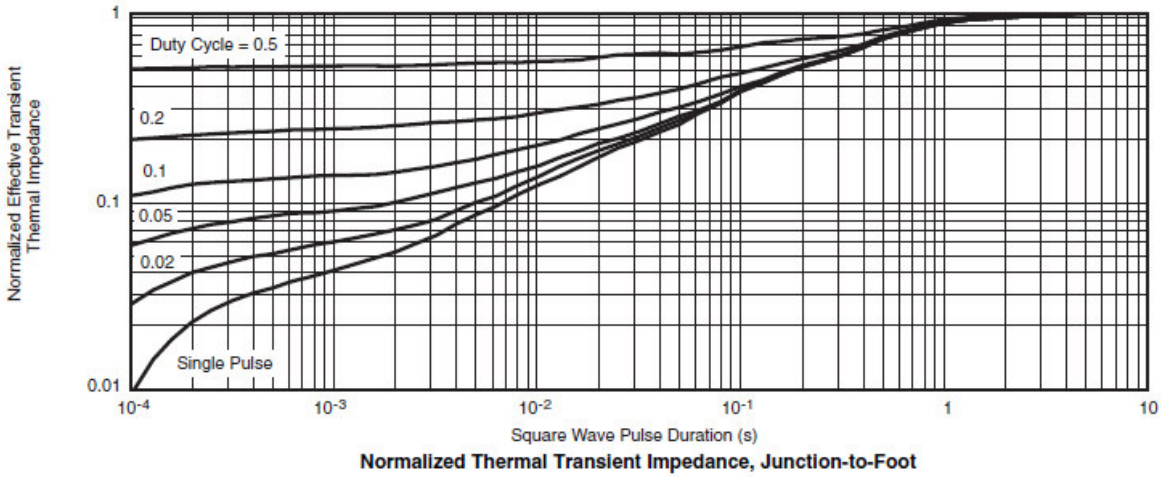
On-Resistance vs. Gate-to-Source Voltage



Threshold Voltage



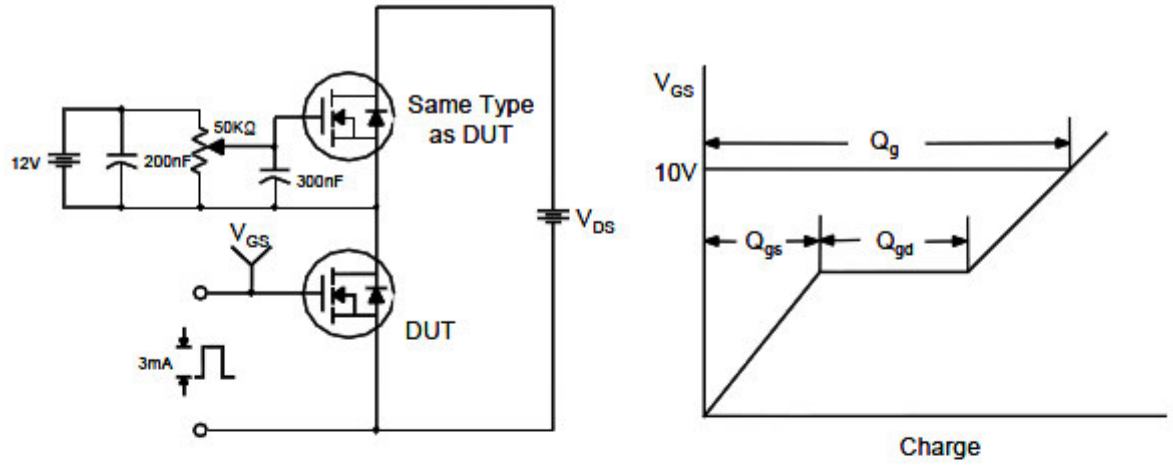
Single Pulse Power



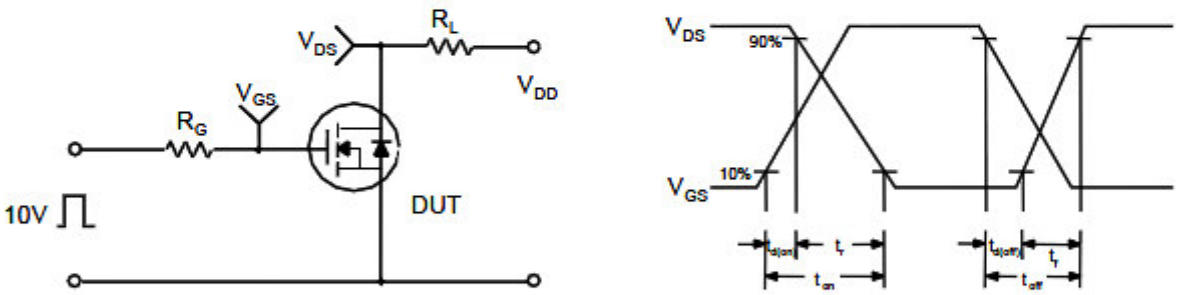
Normalized Thermal Transient Impedance, Junction-to-Foot

Typical Performance Characteristics (continue)

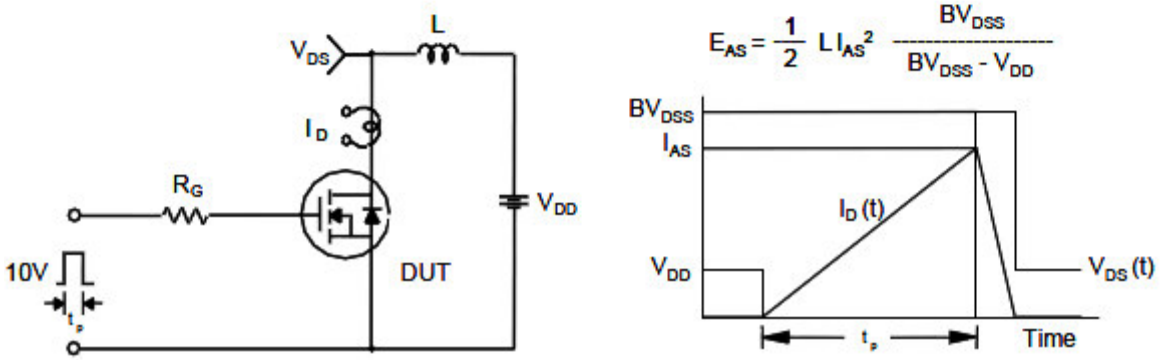
Gate Charge Test Circuit & Waveform



Resistive Switching Test Circuit & Waveforms

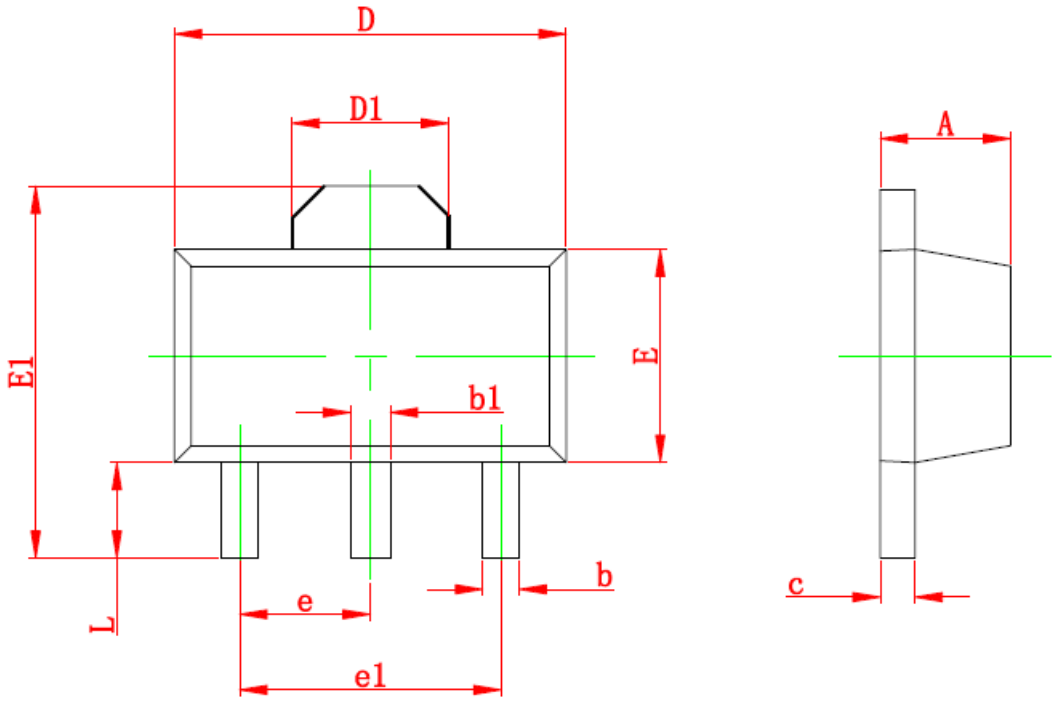


Unclamped Inductive Switching Test Circuit & Waveforms



Package Dimension

SOT-89-3L



Dimensions				
Symbol	Millimeters		Inches	
	Min	Max	Min	Max
A	1.400	1.600	0.055	0.063
b	0.320	0.520	0.013	0.197
b1	0.400	0.580	0.016	0.023
c	0.350	0.440	0.014	0.017
D	4.400	4.600	0.173	0.181
D1	1.550 (REF)		0.061 (REF)	
E	2.30	2.600	0.091	0.102
E1	3.940	4.250	0.155	0.167
e	1.50 (TYP)		0.060 (TYP)	
e1	3.00 (TYP)		0.118 (TYP)	
L	0.900 (TYP)	1.200	0.035	0.047

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