GSM3368ADF

30V N-Channel Enhancement Mode MOSFET

Product Description

The N-Channel enhancement mode power field effect transistor is using trench DMOS technology. This advanced technology has been especially tailored to minimize on-state resistance, provide superior switching performance, and withstand high energy pulse in the avalanche and commutation mode.

The device is well suited for high efficiency fast switching applications.

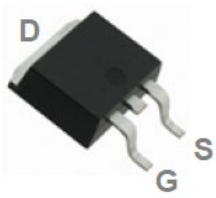
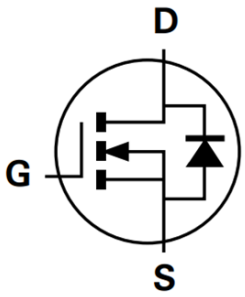
Features

- $R_{DS(ON)}$ =6mΩ @ V_{GS}=10V
- $R_{DS(ON)}$ =9.8mΩ @ V_{GS}=4.5V
- TO-252-2L Package
- RoHS Compliant and Halogen Free

Applications

- MB / VGA / Vcore
- POL Applications
- SMPS

Packages & Pin Assignments

GSM3368ADF (TO-252-2L)	Equivalent Circuit
	

Pin	Description
G	Gate
S	Source
D	Drian

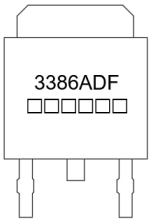
Ordering and Marking Information

Ordering Information			
Part Number	**Package**	**Part Marking**	**Quantity / Reel**
GSM3368ADF	TO-252-2L	3368ADF □□□□□□	2,500 PCS

GSM3368A 1 2

- **Product Code:** GSM3368A
- **Package Code:** 1 is **D** for TO-252-2L
- **Green Level:** 2 is **F** for RoHS Compliant and Halogen Free

Marking Information



- **Product Code:** 3368ADF
- **GS Code:** □□□□□□

Absolute Maximum Ratings (T_J = 25ºC Unless otherwise noted)

Symbol	Parameter		Value	Unit
V_{DSS}	Drain-Source Voltage		30	V
V_{GSS}	Gate-Source Voltage		±20	V
I_D	Continuous Drain Current [1,]	T_C=25ºC	60	A
		T_C=100ºC	40	
I_{DM}	Pulsed Drain Current		180	A
I_{AS}	Single Pulse Avalanche Current, L = 0.5mH		12	A
E_{AS}	Single Pulse Avalanche Energy, L = 0.5mH		72	mJ
P_D	Power Dissipation [1, 2]	T_C=25ºC	40	W
		T_C=100ºC	16	
$R_{\theta JC}$	Thermal Resistance-Junction to Case		3	ºC/W
T_J	Operating Junction Temperature Range		-55 to +150	ºC
T_{STG}	Storage Temperature Range		-55 to +150	ºC

Note:
1.The maximum current rating is limited by P_D.
2.The data tested by surface mounted on a 1 inch2 FR-4 board with 2oz copper.

Electrical Characteristics (T_C=25ºC Unless otherwise noted)

Symbol	Parameter	Test Conditions	Min.	Typ.	Max.	Unit
Static characteristics						
BV_{DSS}	Drain-Source Breakdown Voltage	V_{GS}=0V, I_D=250μA	30	-	-	V
$V_{GS(th)}$	Gate Threshold Voltage	V_{DS}=V_{GS}, I_D=250μA	1.2	-	2.5	V
I_{GSS}	Gate-Source Leakage Current	V_{DS}=0V, V_{GS}=±20V	-	-	±100	nA
I_{DSS}	Drain-Source Leakage Current	V_{DS}=30V, V_{GS}=0V	-	-	1	μA
$R_{DS(ON)}$	Drain-Source On-Resistance	V_{GS}=10V, I_D=15A	-	4.2	6	mΩ
		V_{GS}=4.5V, I_D=10A	-	5.6	9.8	
V_{SD}	Diode Forward Voltage	V_{GS}=0V, I_S=20A	-	-	1.2	V
Dynamic characteristics						
C_{iss}	Input Capacitance	V_{DS}=15V, V_{GS}=0V, f=1MHz	-	2295	-	pF
C_{oss}	Output Capacitance		-	267	-	
C_{rss}	Reverse Transfer Capacitance		-	210	-	
R_g	Gate Resistance	V_{DS}=0V, V_{GS}=0V, f=1MHz	-	1.7	-	Ω
Q_g	Total Gate Charge	V_{DS}=15V, V_{GS}=10V, I_D=15A	-	39	-	nC
Q_{gs}	Gate-Source Charge		-	7.6	-	
Q_{gd}	Gate-Drain Charge		-	7.2	-	
$t_{d(on)}$	Turn-On Delay Time	V_{DS}=15V, V_{GS}=10V, Rg=3.3Ω, I_D=15A	-	7.8	-	ns
t_r	Turn-On Rise Time		-	15	-	
$t_{d(off)}$	Turn-Off Delay Time		-	37	-	
t_f	Turn-Off Fall Time		-	11	-	

Typical Performance Characteristics

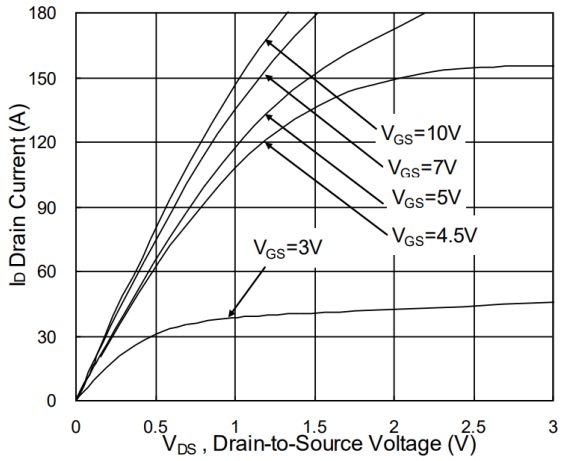


Fig.1 Typical Output Characteristics

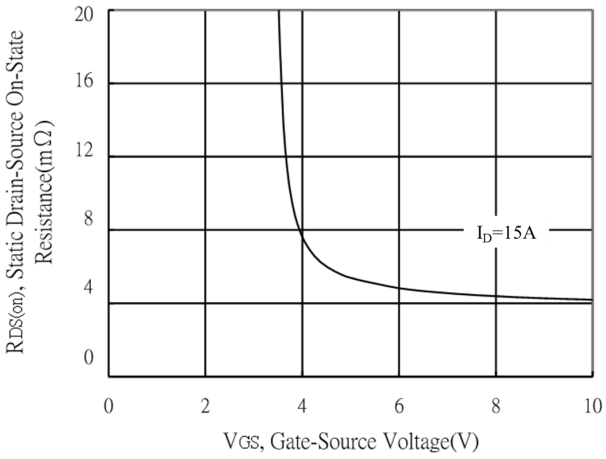


Fig.2 Typical On-Resistance vs. Gate Voltage

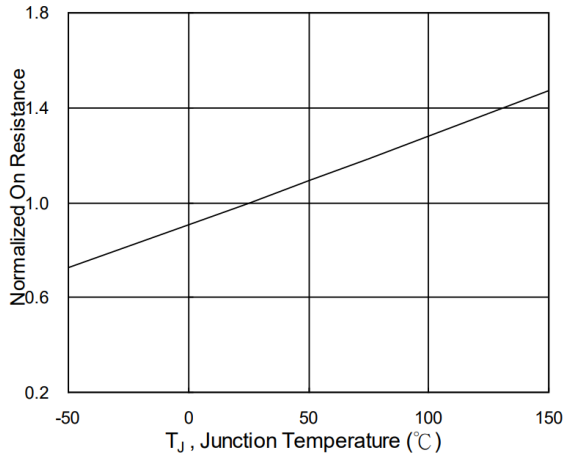


Fig.3 Normalized On-Resistance vs. T_J

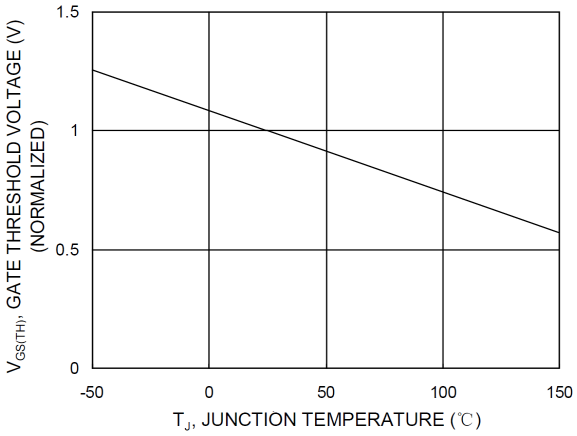


Fig.4 Normalized $V_{GS(th)}$ vs. T_J

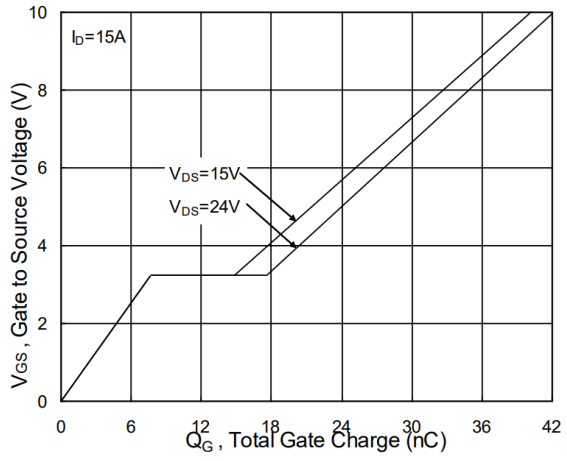


Fig.5 Gate Charge Characteristics

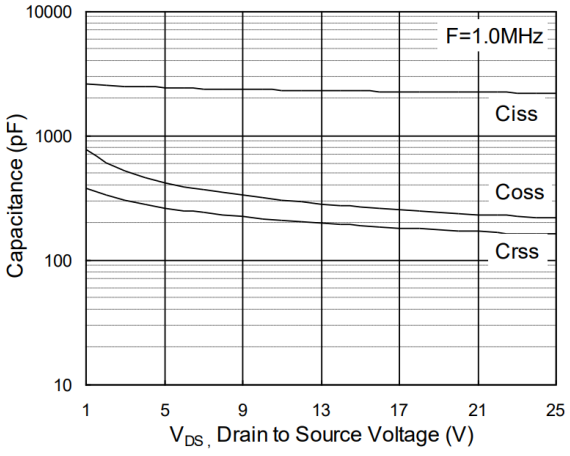


Fig.6 Capacitance Characteristics

Typical Performance Characteristics

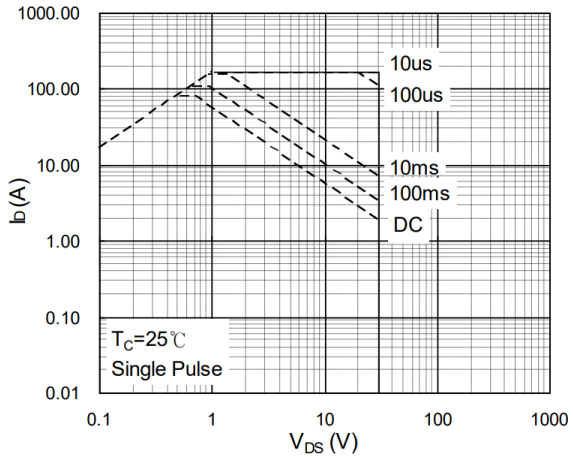


Fig.7 Maximum Safe Operation Area

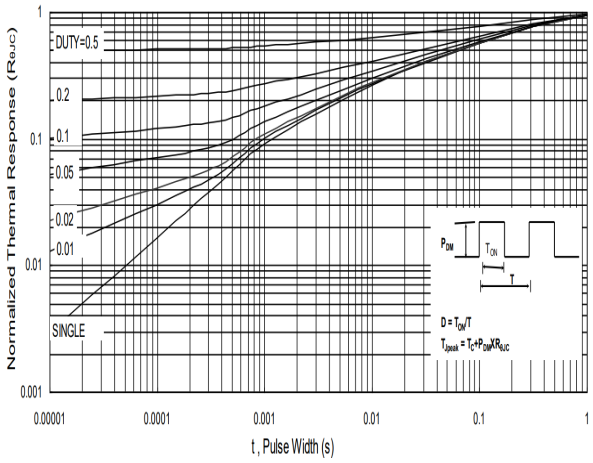
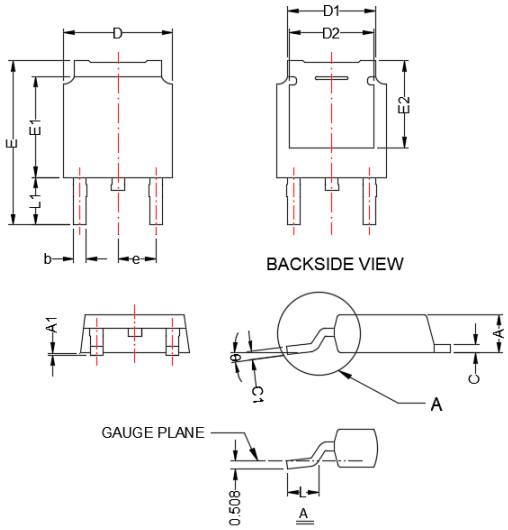


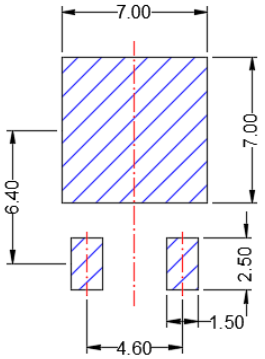
Fig.8 Normalized Transient Impedance

TO-252-2L

Package Dimension



Recommended Land Pattern



Dimensions				
Symbol	Millimeters		Inches	
	MIN	MAX	MIN	MAX
A	2.18	2.40	0.086	0.094
A1	0.00	0.15	0.000	0.006
b	0.64	0.90	0.025	0.035
c	0.40	0.89	0.016	0.035
c1	0.40	0.61	0.016	0.024
D	6.35	6.73	0.250	0.265
D1	4.95	5.46	0.195	0.215
D2	4.32	-	0.170	-
E	9.40	10.41	0.370	0.410
E1	5.97	6.22	0.235	0.245
E2	4.95	-	0.195	-
e	2.286 BSC		0.090 BSC	
L	1.40	1.77	0.055	0.070
L1	2.67	3.07	0.105	0.121
θ	0°	8°	0°	8°

NOTE:
Dimensions are exclusive of Burrs, Mold Flash and Tie Bar extrusions.

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