

GSM3350ADF

30V N-Channel 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.

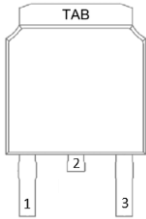
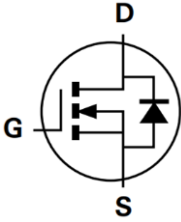
Features

- $R_{DS(ON)} = 5m\Omega @ V_{GS}=10V$
- $R_{DS(ON)} = 7m\Omega @ V_{GS}=4.5V$
- TO-252-2L Package
- RoHS Compliant and Halogen Free

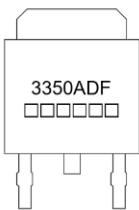
Applications

- MB / VGA / Vcore
- POL Applications
- SMPS

Packages & Pin Assignments

GSM3350ADF (TO-252-2L)			Equivalent Circuit
			
Pin	Symbol	Description	
1	G	Gate	
2/TAB	D	Drain	
3	S	Source	

Ordering and Marking Information

Ordering Information			
Part Number	Package	Part Marking	Quantity / Reel
GSM3350ADF	TO-252-2L	3350ADF □□□□□□	2,500 PCS
GSM3350A 1 2			
- Product Code: GSM3350A - Package Code: 1 is D for TO-252-2L - Green Level: 2 is F for RoHS Compliant and Halogen Free			
Marking Information			
 - Product Code: 3350ADF - GS Code: □□□□□□			

Absolute Maximum Ratings (T_J = 25°C 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 =25°C	75	A
		T _C =100°C	45	
I _{DM}	Pulsed Drain Current		150	A
I _{AS}	Single Pulse Avalanche Current, L = 0.5mH		15	A
E _{AS}	Single Pulse Avalanche Energy, L = 0.5mH		168	mJ
P _D	Power Dissipation ^{1, 2}	T _C =25°C	50	W
		T _C =100°C	20	
R _{θJC}	Thermal Resistance-Junction to Case		2.5	°C/W
T _J	Operating Junction Temperature Range		-55 to +150	°C
T _{STG}	Storage Temperature Range		-55 to +150	°C

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=25°C 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 =20A	-	3.8	5	mΩ
		V _{GS} =4.5V, I _D =15A	-	5.6	7	
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	-	2461	-	pF
C _{oss}	Output Capacitance		-	383	-	
C _{rss}	Reverse Transfer Capacitance		-	298	-	
Q _g	Total Gate Charge	V _{DS} =15V, V _{GS} =10V, I _D =20A	-	46	-	nC
Q _{gs}	Gate-Source Charge		-	11.4	-	
Q _{gd}	Gate-Drain Charge		-	8.2	-	
t _{d(on)}	Turn-On Delay Time	V _{DS} =15V, V _{GS} =10V, R _g =3.3Ω, I _D =20A	-	12.6	-	ns
t _r	Turn-On Rise Time		-	12	-	
t _{d(off)}	Turn-Off Delay Time		-	55	-	
t _f	Turn-Off Fall Time		-	15.6	-	

Typical Performance Characteristics

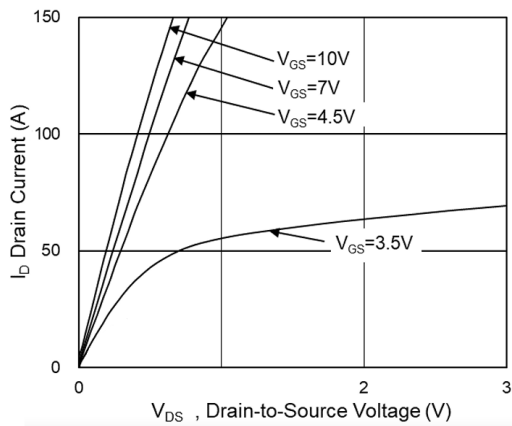


Fig.1 Output Characteristics

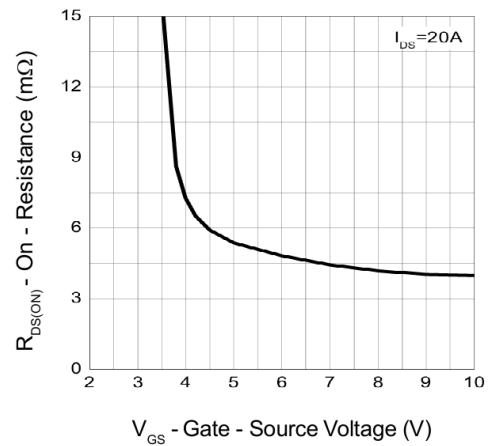


Fig.2 On-Resistance vs. Gate Voltage

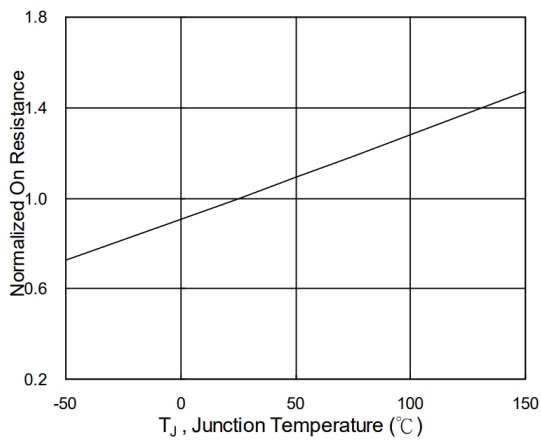


Fig.3 Normalized On-Resistance vs. T_J

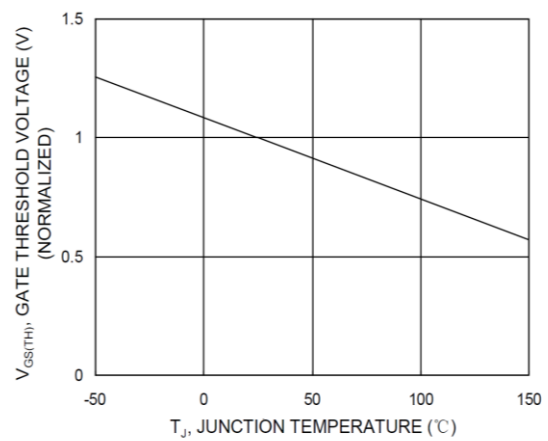


Fig.4 Normalized $V_{GS(th)}$ vs. T_J

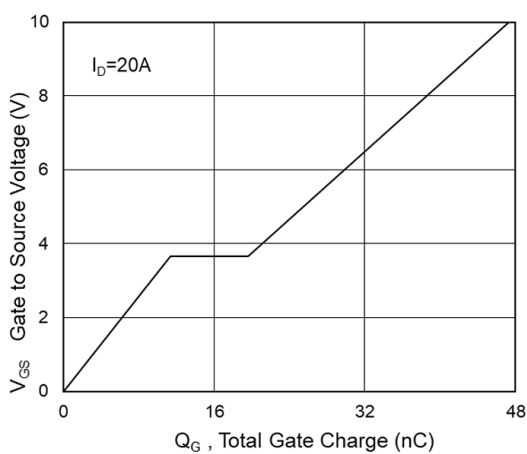


Fig.5 Gate Charge Characteristics

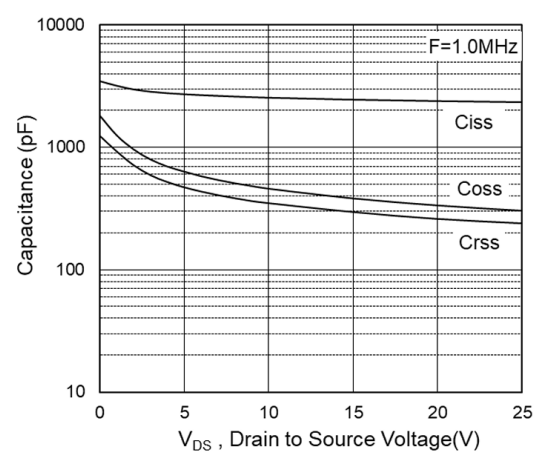


Fig.6 Capacitance Characteristics

Typical Performance Characteristics

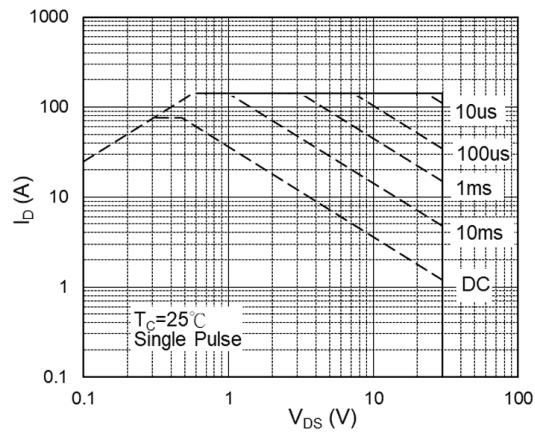


Fig.7 Maximum Safe Operation Area

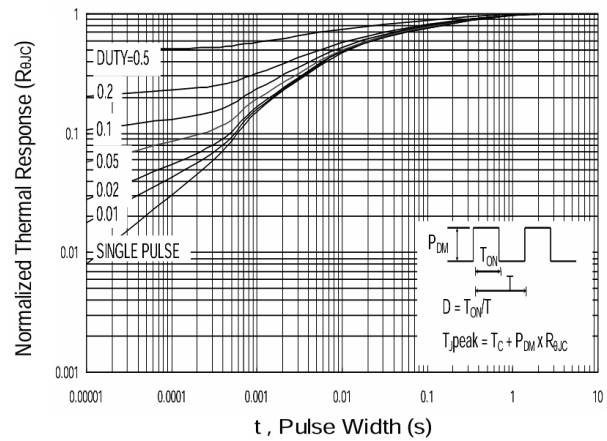
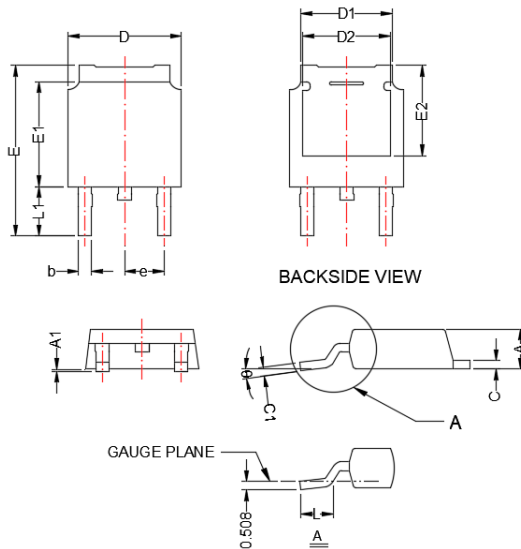


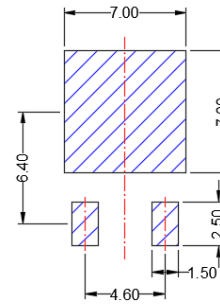
Fig.8 Normalized Transient Impedance

TO-252-2L (AA)

Package Dimension



Recommended Land Pattern



Unit: mm

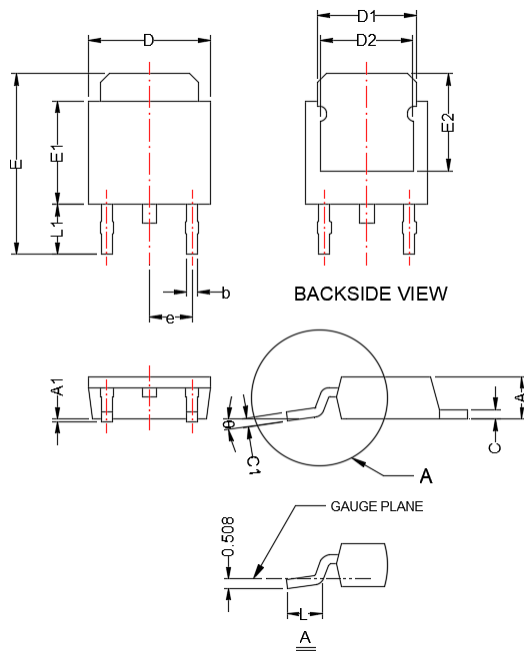
Dimensions				
Symbol	Millimeters		Inches	
	MIN	MAX	MIN	MAX
A	2.18	2.40	0.086	0.094
A1	0.00	0.15	0.000	0.006
b	0.64	0.90	0.025	0.035
c	0.40	0.89	0.016	0.035
c1	0.40	0.61	0.016	0.024
D	6.35	6.73	0.250	0.265
D1	4.95	5.46	0.195	0.215
D2	4.32	-	0.170	-
E	9.40	10.41	0.370	0.410
E1	5.97	6.22	0.235	0.245
E2	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:

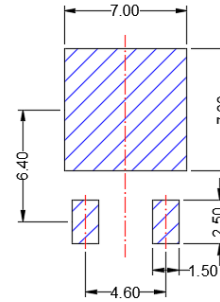
Dimensions are exclusive of Burrs, Mold Flash and Tie Bar extrusions.

TO-252-2L (AB)

Package Dimension



Recommended Land Pattern



Unit: mm

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	0.50	0.90	0.020	0.035
c	0.45	0.89	0.018	0.035
c1	0.40	0.61	0.016	0.024
D	6.35	6.80	0.250	0.268
D1	4.95	5.50	0.195	0.217
D2	3.81	---	0.150	---
E	9.40	10.41	0.370	0.410
E1	5.33	5.80	0.210	0.228
E2	4.57	---	0.180	---
e	2.286 BSC		0.090 BSC	
L	1.40	1.78	0.055	0.070
L1	2.40	3.00	0.094	0.118
θ	0°	8°	0°	8°

NOTE:

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

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