

GSM3112ANCF

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.

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

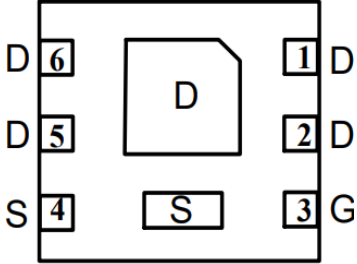
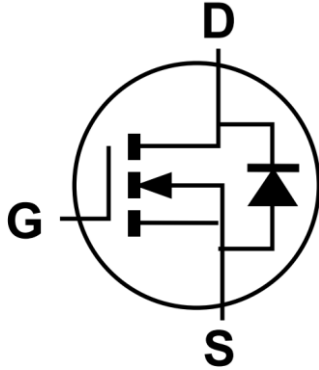
Features

- $R_{DS(ON)}=12m\Omega@V_{GS}=10V$
- $R_{DS(ON)}=18m\Omega@V_{GS}=4.5V$
- Improved dv/dt capability
- Fast switching
- RoHS Compliant and Halogen Free

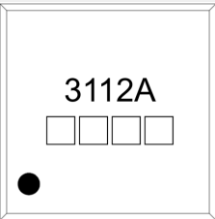
Applications

- MB / VGA / Vcore
- DC-DC Converters
- Power Management Functions

Packages & Pin Assignments

GSM3112ANCF (DFN2x2-6L(C))		Equivalent Circuit
 (Bottom View)		
Pin	Description	
1	Drain	
2	Drain	
3	Gate	
4	Source	
5	Drain	
6	Drain	

Ordering and Marking Information

Ordering Information			
Part Number	Package	Part Marking	Quantity / Reel
GSM3112ANCF	DFN2x2-6L(C)	3112A □□□□	4,000 PCS
GSM3112A ① ② - Product Code: GSM3112A - Package Code: ① is NC for DFN2x2-6L(C) - Green Level: ② is F for RoHS Compliant and Halogen Free			
Marking Information			
 - Product Code: 3112A - GS Code: □□□□			

Absolute Maximum Ratings

T_A=25°C, unless otherwise specified

Symbol	Parameter		Value	Unit
V _{DSS}	Drain-Source Voltage		30	V
V _{GSS}	Gate-Source Voltage		±20	V
I _D	Continuous Drain Current	T _A =25°C	10	A
		T _A =70°C	8	
I _{DM}	Pulsed Drain Current		27	A
P _D	Power Dissipation	T _A =25°C	1.7	W
		T _A =70°C	1.1	
T _J	Operating Junction Temperature Range		-55 to +150	°C
T _{STG}	Storage Temperature Range		-55 to +150	°C
R _{θJA}	Thermal Resistance, Junction to Ambient		71	°C/W

Electrical Characteristics

T_A=25°C, unless otherwise specified

Symbol	Parameter	Test Conditions	Min.	Typ.	Max.	Unit
Static characteristics						
BV _{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	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	uA
R _{DS(ON)}	Drain-Source On-Resistance	V _{GS} =10V, I _D =10A	-	9.5	12	mΩ
		V _{GS} =4.5V, I _D =5A,	-	14	18	
g _{FS}	Forward Transconductance	V _{DS} =10V, I _D =3A	-	-	12	S
V _{SD}	Diode Forward Voltage	V _{GS} =0V, I _S =1A	-	-	1	V
Dynamic characteristics						
Q _g	Total Gate Charge	V _{DS} =15V, V _{GS} =4.5V, I _D =10A	-	8	-	nC
Q _{gs}	Gate-Source Charge		-	4	-	
Q _{gd}	Gate-Drain Charge		-	2	-	
C _{iss}	Input Capacitance	V _{DS} =15V, V _{GS} =0V, f=1MHz	-	1040	-	pF
C _{oss}	Output Capacitance		-	445	-	
C _{rss}	Reverse Transfer Capacitance		-	40	-	
t _{d(on)}	Turn-On Time	V _{DD} =15V, I _D =10A, V _{GS} =10V, R _G =6Ω	-	10	-	ns
t _r	Rise Time		-	9	-	
t _{d(off)}	Turn-Off Time		-	24	-	
t _f	Fall Time		-	8	-	
R _g	Gate Resistance	V _{GS} =0V, V _{DS} =0V, f=1MHz	-	1.1	-	Ω

Typical Performance Characteristics

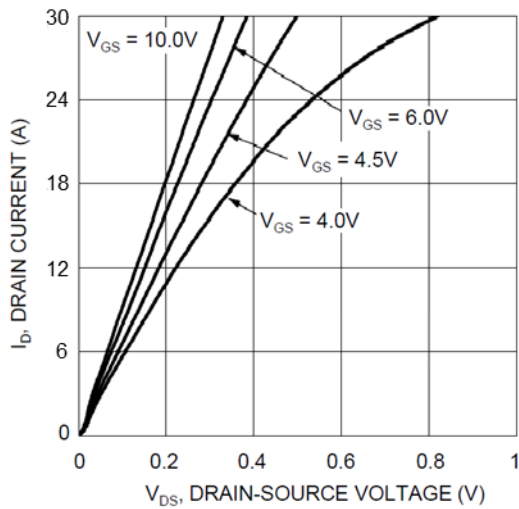


Fig. 1 Typical Output Characteristics

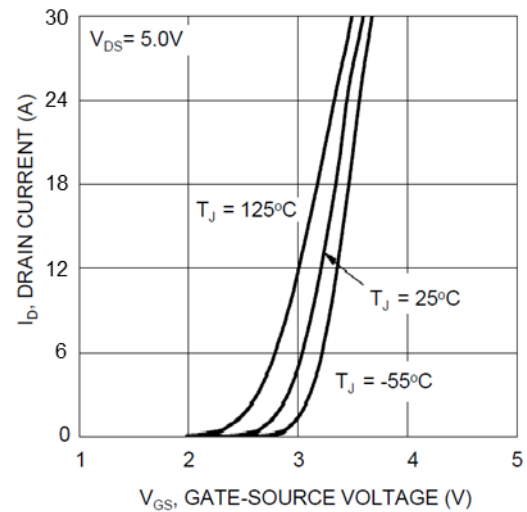


Fig. 2 Typical Transfer Characteristics

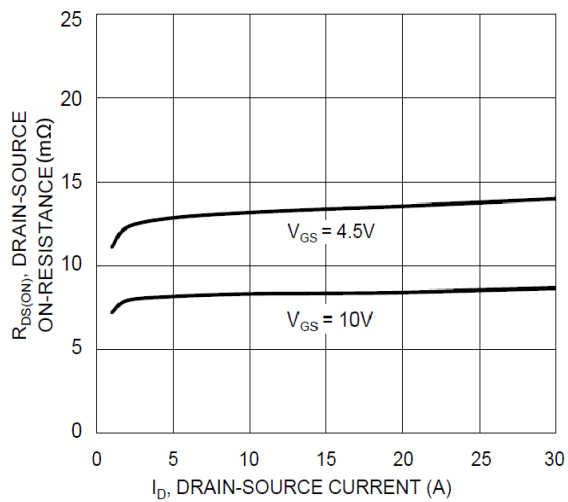


Fig. 3 Typical On-Resistance vs I_D and V_{GS}

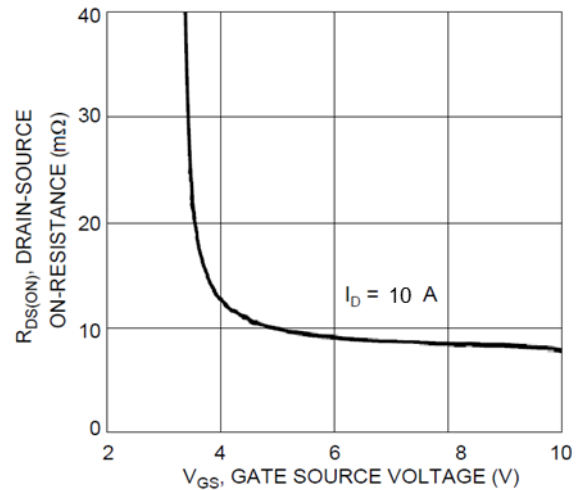


Fig. 4 Typical Transfer Characteristic

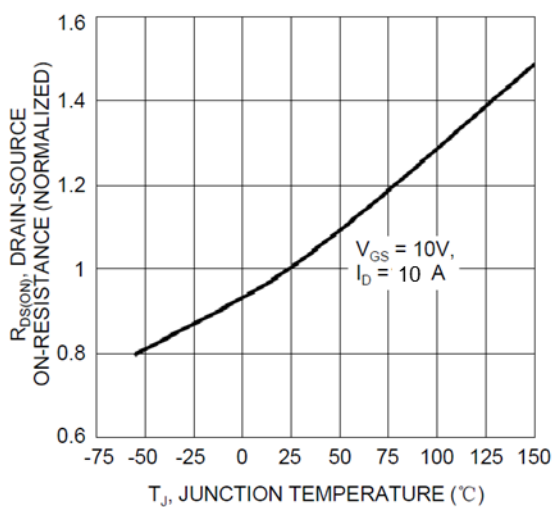


Figure 5 On-Resistance Variation with T_J

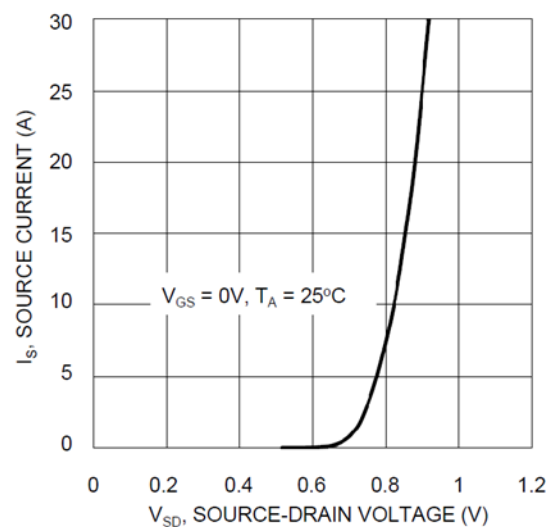


Fig. 6 Diode Forward Voltage vs. Current

Typical Performance Characteristics

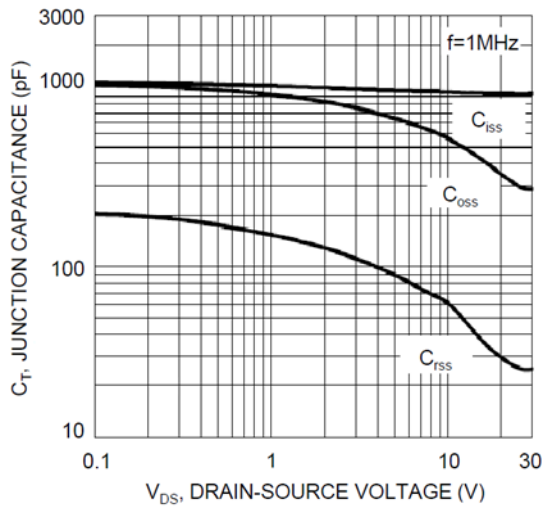


Fig. 7 Typical Capacitance

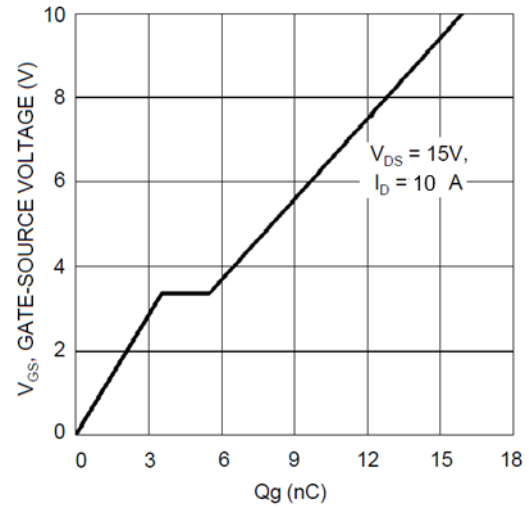


Fig. 8 Gate Charge

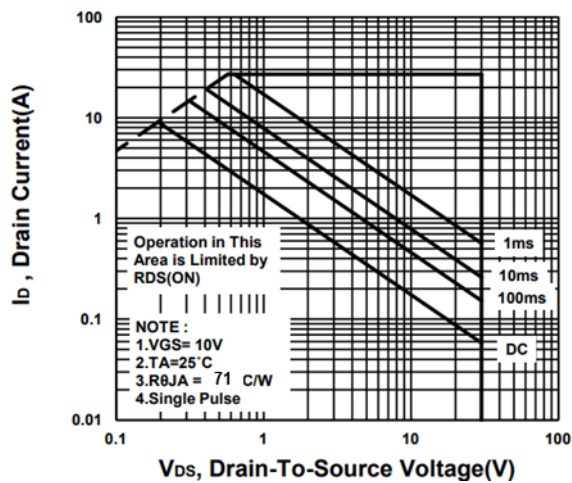


Fig. 9 Safe Operating Area

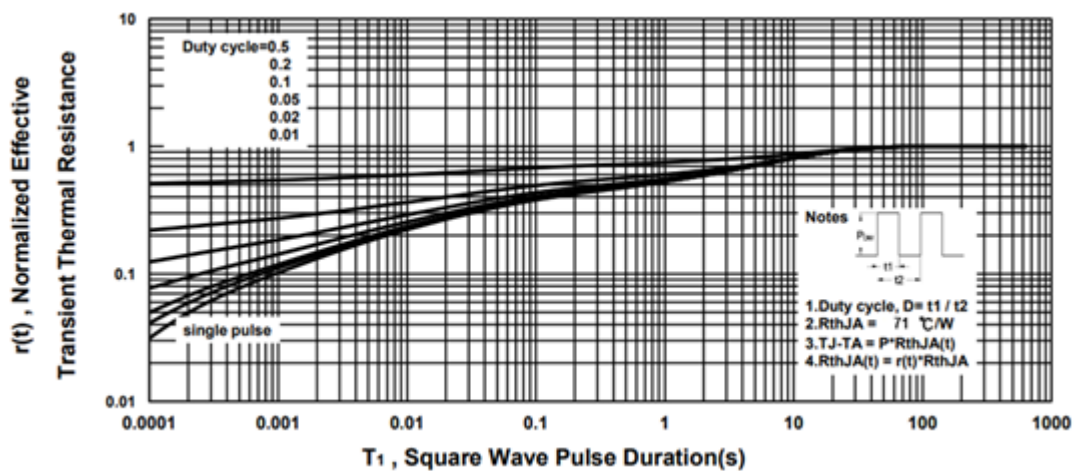
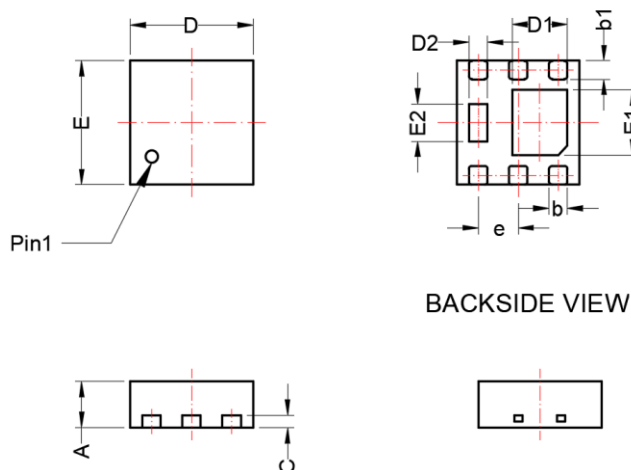


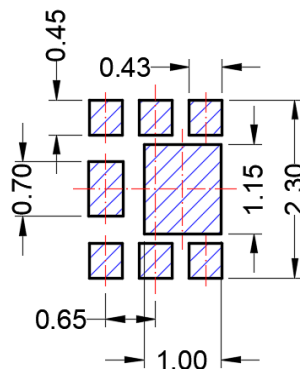
Fig. 9 Transient Thermal Response Curve

DFN2x2-6L(C)

Package Dimension



Recommended Land Pattern



Dimensions				
Symbol	Millimeters		Inches	
	Min	Max	Min	Max
A	0.70	0.80	0.028	0.031
b	0.25	0.35	0.010	0.014
b1	0.25	0.35	0.010	0.014
c	0.15	0.26	0.006	0.010
D	1.90	2.10	0.075	0.083
D1	0.80	1.00	0.031	0.039
D2	0.25	0.35	0.010	0.014
E	1.95	2.05	0.077	0.081
E1	0.90	1.10	0.035	0.043
E2	0.50	0.65	0.020	0.026
e	0.65 BSC		0.026 BSC	

NOTE:

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

NOTICE

- Globaltech Semiconductor assumes no responsibility for equipment failures that result from using products at values that exceed, even momentarily, rated values (such as maximum ratings, operating condition ranges, or other parameters) listed in products specifications of any and all Globaltech Semiconductor products described or contained herein. Globaltech Semiconductor products are not designed for use in life support appliances, devices or systems where malfunction of these products can be reasonably expected to result in personal injury. Reproduction in whole or in part is prohibited without the prior written consent of the copyright owner.
- Applications shown on the herein document are examples of standard use and operation. Customers are responsible in comprehending the suitable use in particular applications. Globaltech Semiconductor makes no representation or warranty that such applications will be suitable for the specified use without further testing or modification.
- The information furnished is believed to be accurate and reliable. However, Globaltech Semiconductor assumes no responsibility for the consequences of use of such information nor for any infringement of patents or other rights of third parties, which may result from its use. No license is granted by implication or otherwise under any patent or patent rights of Globaltech Semiconductor. Specifications mentioned in this publication are subject to change without notice. This publication supersedes and replaces all information without express written approval of Globaltech Semiconductor.

CONTACT US

GS Headquarter	
	4F.,No.43-1,Lane11,Sec.6,Minquan E.Rd NeiHu District Taipei City 114, Taiwan (R.O.C)
	886-2-2657-9980
	886-2-2657-3630
	sales_twn@gs-power.com

RD Division	
	824 Bolton Drive Milpitas. CA. 95035
	1-408-457-0587