GSMBSS84TFF

60V P-Channel MOSFET

Product Description

GSMBSS84, P-Channel enhancement mode MOSFET, uses Advanced Trench Technology to provide excellent $R_{DS(ON)}$, low gate charge.

The device is 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.

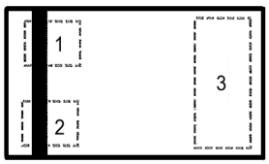
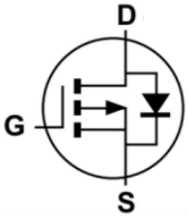
Features

- $R_{DS(ON)}$ = 5Ω @ V_{GS}=-10V
- DFN1006-3L Package
- RoHS Compliant and Halogen Free

Applications

- Relay driver
- Line driver
- Load Switch

Packages & Pin Assignments

DFN1006-3L	Equivalent Circuit
 Top View	

Pin	Symbol	Description	Pin	Symbol	Description
1	G	Gate	3	D	Drain
2	S	Source			

Ordering and Marking Information

Ordering Information			
Part Number	**Package**	**Part Marking**	**Quantity / Reel**
GSMBSS84TFF	DFN1006-3L	PD□□	10,000 PCS

GSMBSS84 1 1 2

- **Product Code:** GSMBSS84
- **Package Code:** 1 1 is **TF** for DFN1006-3L
- **Green Level:** 2 is **F** for RoHS Compliant and Halogen Free

Marking Information

- **Product Code:** PD
- **GS Code:** □□
  - Band for Pin1 Side

Absolute Maximum Ratings (T_A=25ºC unless otherwise specified)

Symbol	Parameter		Value	Unit
V_{DSS}	Drain-Source Voltage		-60	V
V_{GSS}	Gate-Source Voltage		±20	V
I_D	Continuous Drain Current	T_A=25ºC	-220	mA
		T_A=100ºC	-140	
I_{DM}	Pulsed Drain Current [1]		-610	mA
P_D	Power Dissipation	T_A=25ºC	470	mW
		T_A=100ºC	188	
$R_{\theta JA}$	Maximax Thermal Resistance - Junction to Ambient [2]		265	ºC/ W
T_J	Junction Temperature Range		-55 to 150	ºC
T_{STG}	Storage Temperature Range		-55 to 150	ºC

NOTE:
1. Single pulse width is limited by max junction temperature.
2. The device mounted on 1in^2 FR-4 board with 2oz. Copper

Electrical Characteristics (T_A=25ºC unless otherwise specified)

Symbol	Parameter	Test Conditions	Min.	Typ.	Max.	Unit
Static Characteristics						
BV_{DSS}	Drain-Source Breakdown Voltage	V_{GS}=0V, I_D=-250μA	-60	-	-	V
I_{DSS}	Drain-Source Leakage Current	V_{DS}=-60V, V_{GS}=0V	-	-	-1	μA
I_{GSS}	Gate-Source Leakage Current	V_{DS}=0V, V_{GS}=±20V	-	-	±100	nA
$V_{GS(th)}$	Gate Threshold Voltage	V_{DS}=V_{GS}, I_D=-250μA	-0.8	-	-2.5	V
$R_{DS(ON)}$	Drain-Source On-Resistance	V_{GS}=-10V, I_D=-100mA	-	2.5	5	Ω
		V_{GS}=-4.5V, I_D=-100mA	-	3	6	
Dynamic Characteristics						
C_{iss}	Input Capacitance	V_{DS}=-30V, V_{GS}=0V, f=1MHz	-	23	-	pF
C_{oss}	Output Capacitance		-	2.9	-	
C_{rss}	Reverse Transfer Capacitance		-	1.5	-	
Q_g	Total Gate Charge	V_{DS}=-30V, I_D=-100mA V_{GS}=-10V	-	2.7	-	nC
Q_{gs}	Gate-Source Charge		-	0.7	-	
Q_{gd}	Gate-Drain Charge		-	0.9	-	
$t_{d(on)}$	Turn-On Delay Time	V_{DD}=-30V, I_D=100mA V_{GS}=10V, R_g=3Ω	-	8	-	ns
t_r	Turn-On Rise Time		-	10	-	
$t_{d(off)}$	Turn-Off Delay Time		-	15	-	
t_f	Turn-Off Fall Time		-	46	-	
Diode Characteristics						
V_{SD}	Diode Forward Voltage	V_{GS}=0V, I_S=-100mA	-	-	-1.2	V

Typical Performance Characteristics

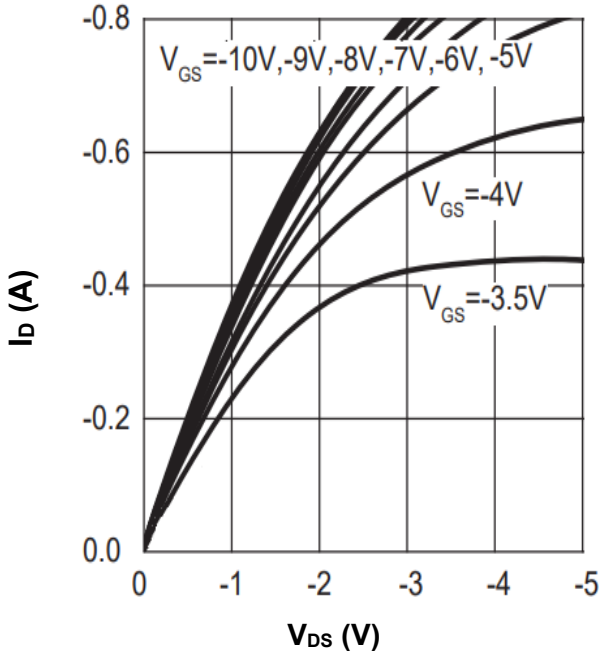


FIG.1 Output Characteristics

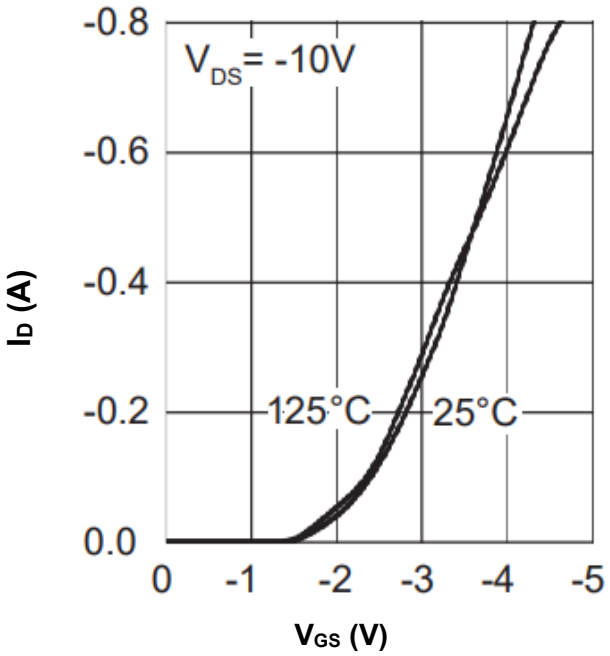


FIG.2 Transfer Characteristics

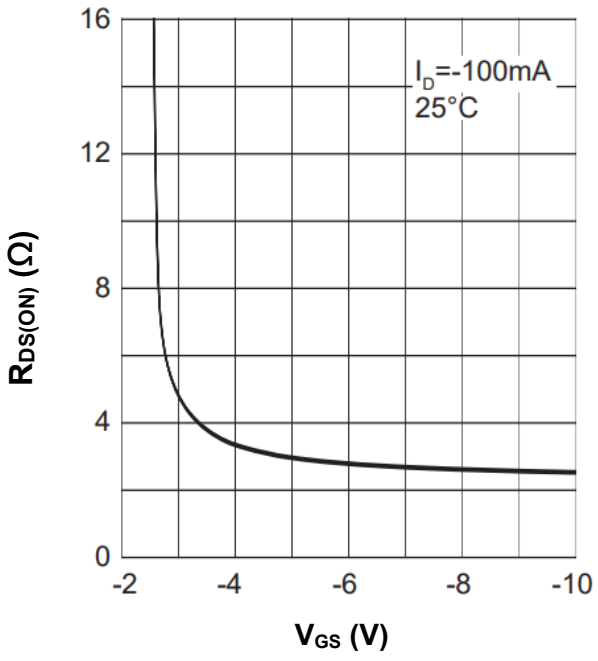


FIG.3 On-Resistance vs. Gate Voltage

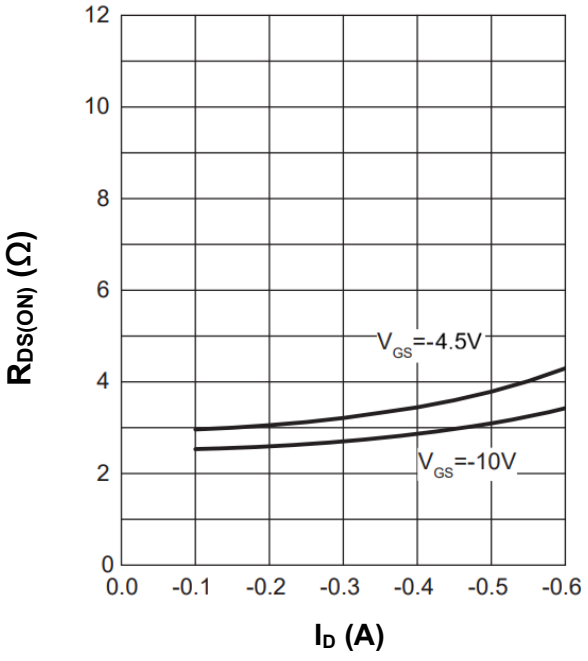


FIG.4 On-Resistance vs. Drain Current

Typical Performance Characteristics

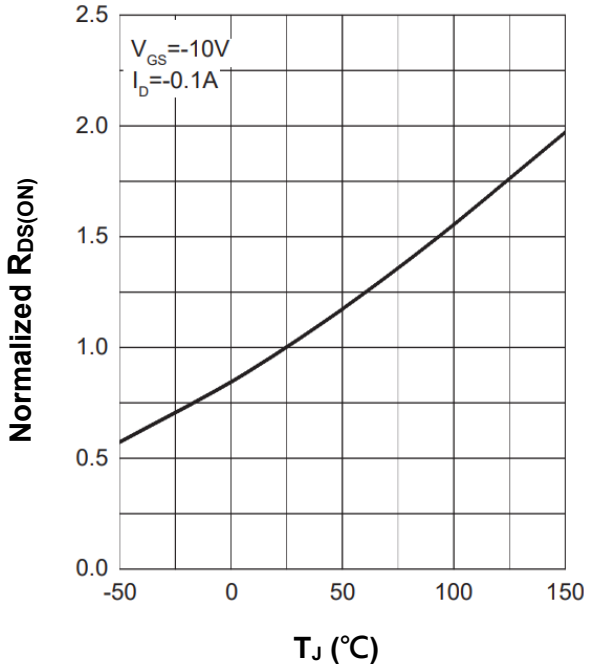


FIG.5 Normalized On-Resistance vs. T_J

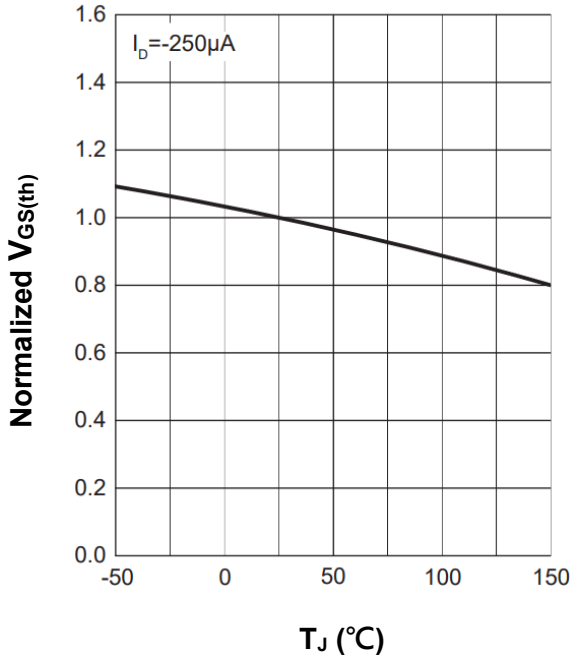


FIG.6 Normalized $V_{GS(th)}$ vs. T_J

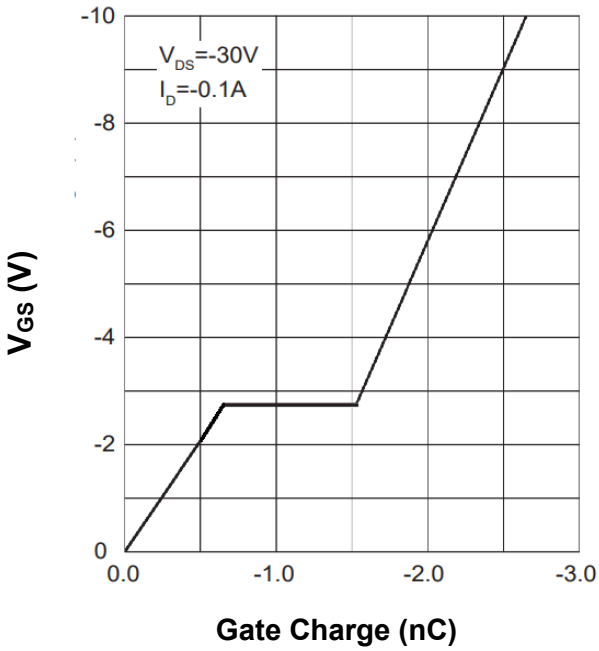


FIG.7 Gate Charge Characteristics

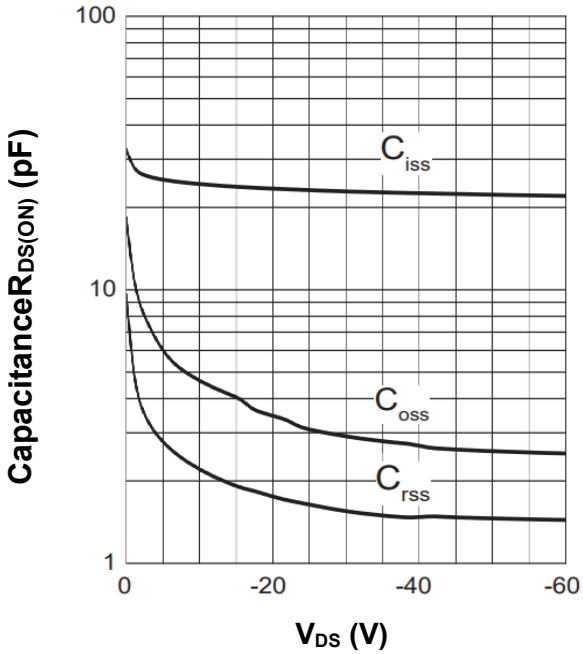


FIG.8 Capacitance Characteristics

Typical Performance Characteristics

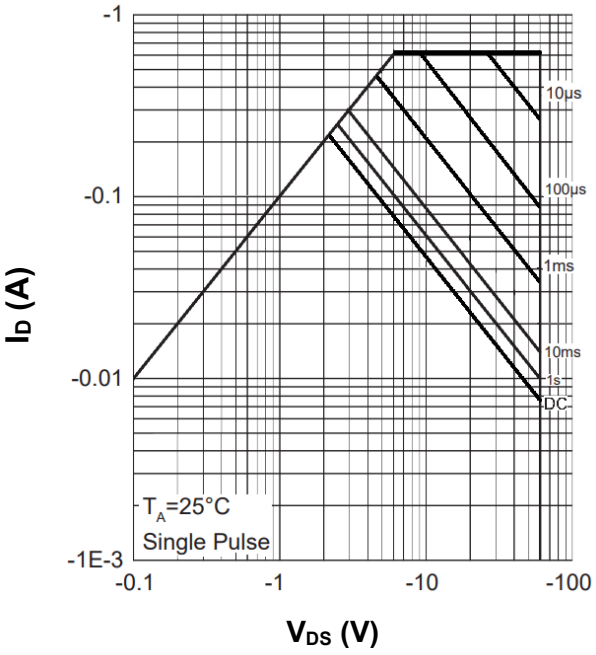


FIG.9 Maximum Safe Operation Area

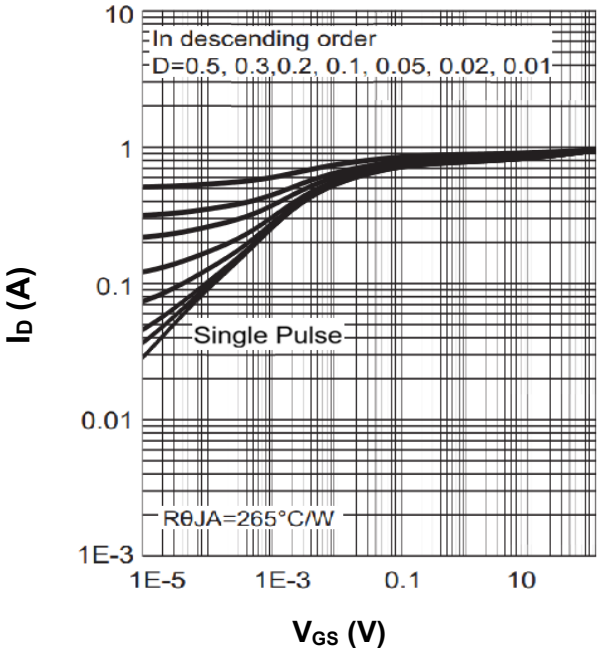
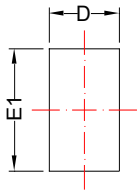
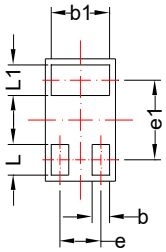


FIG.10 Normalized Transient Impedance

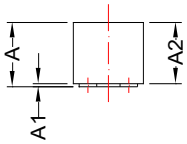
DFN1006-3L

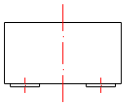
Package Dimension



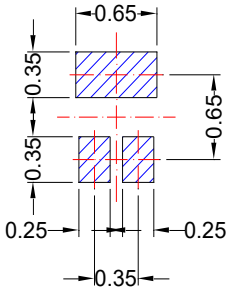


BACKSIDE VIEW





Recommended Land Pattern



Unit:mm

Dimensions				
Symbol	**Millimeters**		**Inches**	
	MIN	**MAX**	**MIN**	**MAX**
A	0.45	0.60	0.018	0.024
A1	0.00	0.05	0.000	0.002
A2	0.40	0.60	0.016	0.024
b	0.10	0.20	0.004	0.008
b1	0.45	0.55	0.018	0.022
D	0.55	0.65	0.022	0.026
E1	0.95	1.05	0.037	0.041
e	0.35 BSC		0.014 BSC	
e1	0.65 BSC		0.026 BSC	
L	0.20	0.30	0.008	0.012
L1	0.20	0.30	0.008	0.012

NOTE:

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

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