

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.

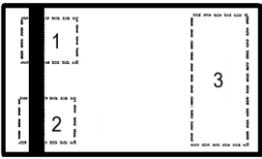
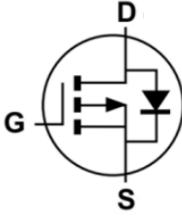
Features

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


Applications

- Relay driver
- Line driver
- Load Switch

Packages & Pin Assignments

DFN1006-3L			Equivalent Circuit		
 <p>Top View</p>					
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			
 <ul style="list-style-type: none"> - Product Code: PD - GS Code: □□ ● Band for Pin1 Side 			

Absolute Maximum Ratings (T_A=25°C 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 =25°C	-220
		T _A =100°C	-140
I _{DM}	Pulsed Drain Current ¹	-610	mA
P _D	Power Dissipation	T _A =25°C	470
		T _A =100°C	188
R _{θJA}	Maximax Thermal Resistance - Junction to Ambient ²	265	°C/ W
T _J	Junction Temperature Range	-55 to 150	°C
T _{STG}	Storage Temperature Range	-55 to 150	°C

NOTE:

1. Single pulse width is limited by max junction temperature.
2. The device mounted on 1in² FR-4 board with 2oz. Copper

Electrical Characteristics (T_A=25°C unless otherwise specified)

Symbol	Parameter	Test Conditions	Min.	Typ.	Max.	Unit
Static Characteristics						
B _V 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

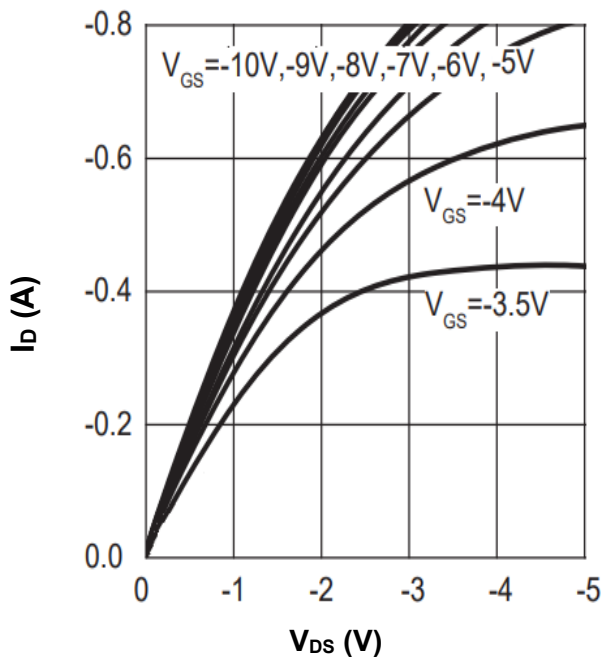


FIG.1 Output Characteristics

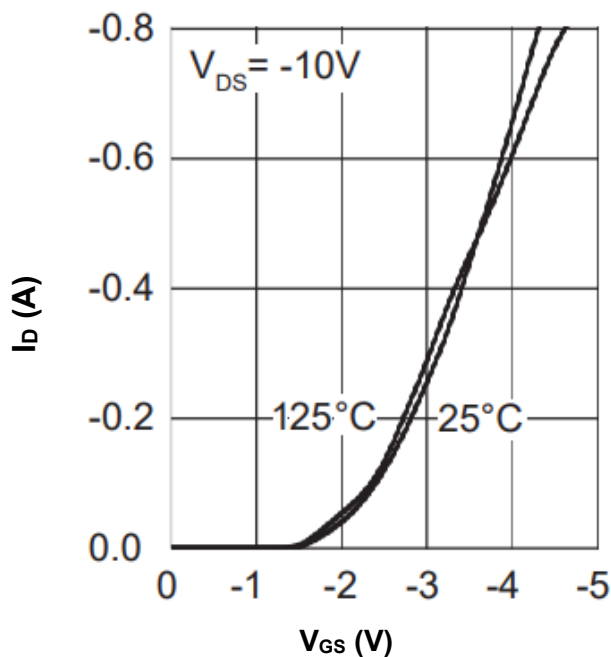


FIG.2 Transfer Characteristics

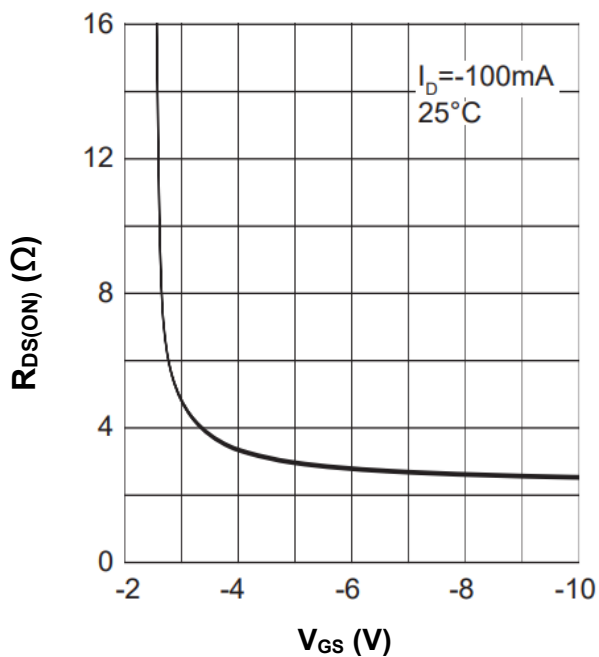


FIG.3 On-Resistance vs. Gate Voltage

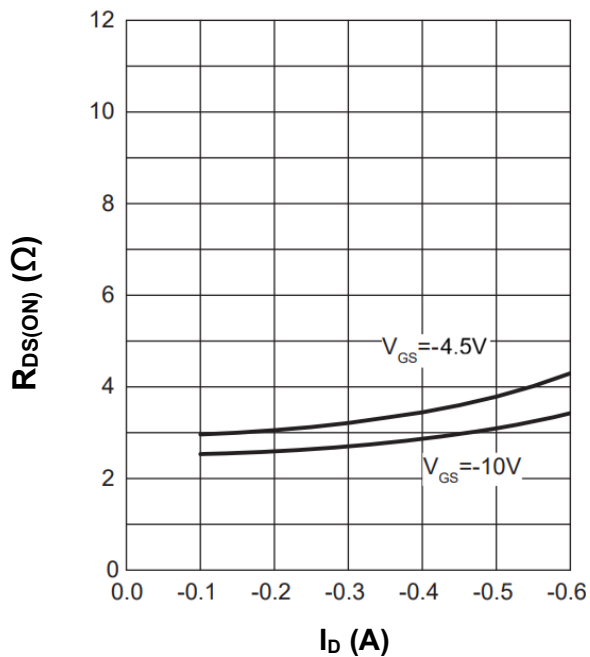


FIG.4 On-Resistance vs. Drain Current

Typical Performance Characteristics

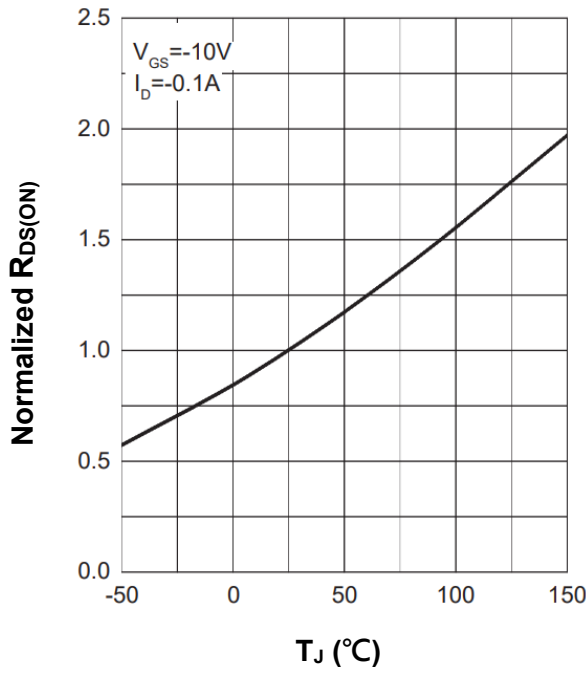


FIG.5 Normalized On-Resistance vs. T_J

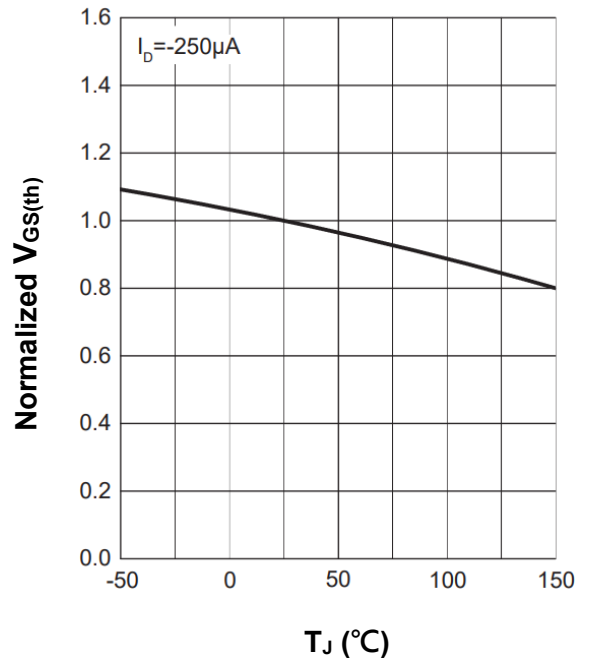


FIG.6 Normalized $V_{GS(th)}$ vs. T_J

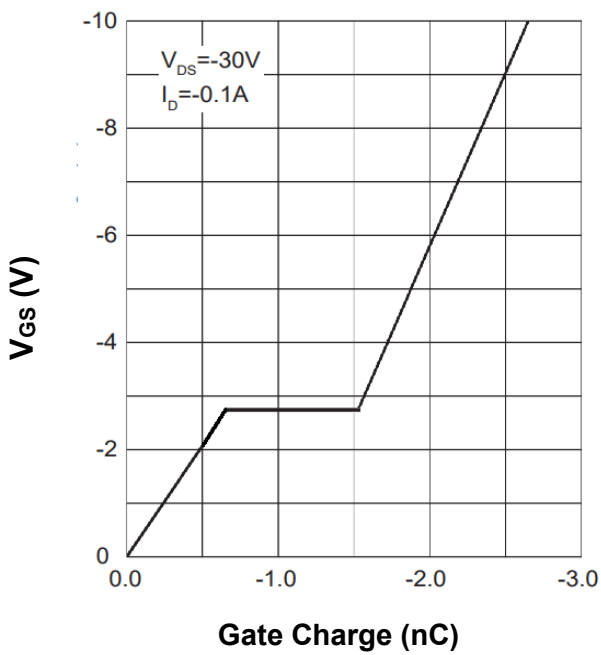


FIG.7 Gate Charge Characteristics

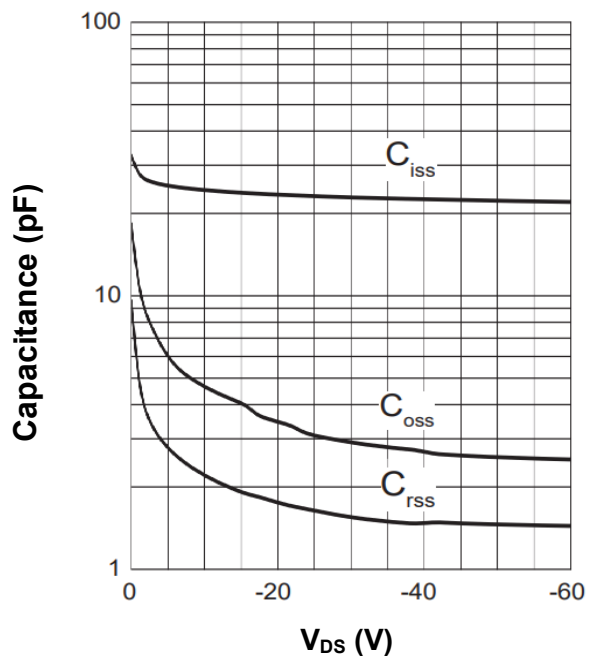


FIG.8 Capacitance Characteristics

Typical Performance Characteristics

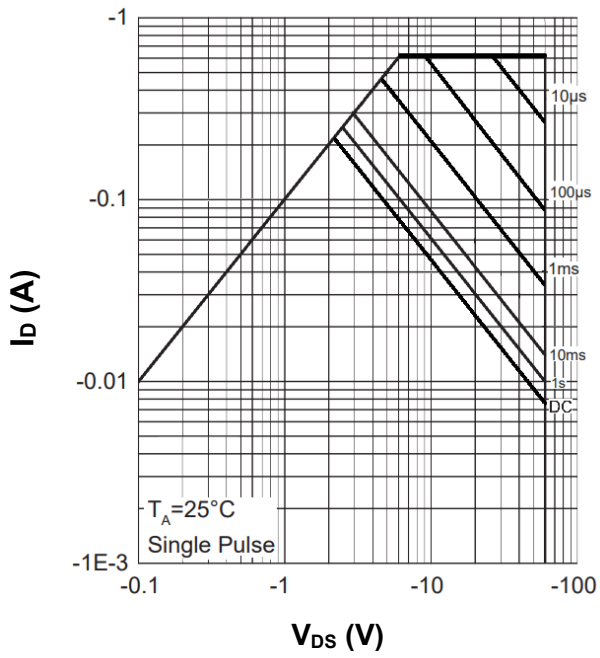


FIG.9 Maximum Safe Operation Area

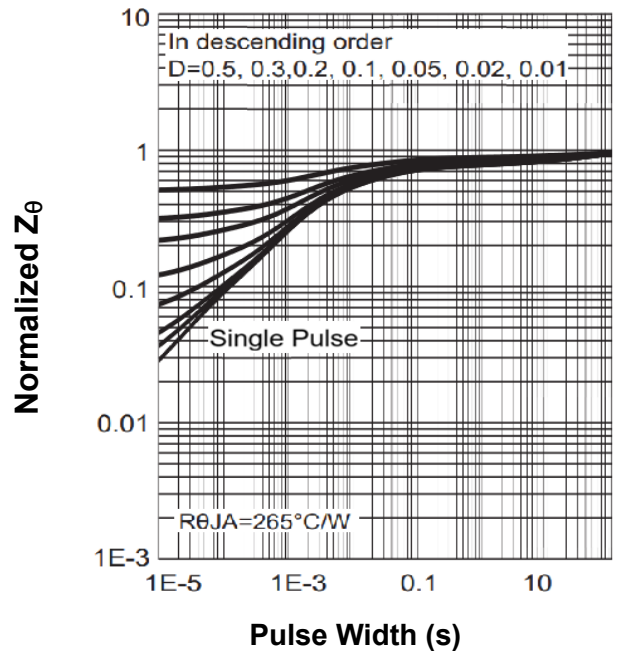
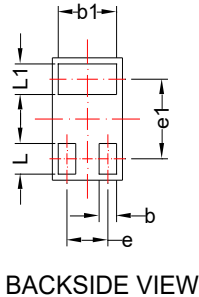
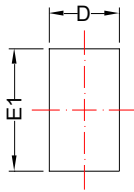


FIG.10 Normalized Transient Impedance

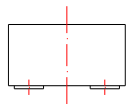
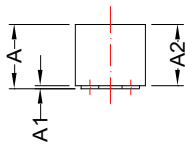
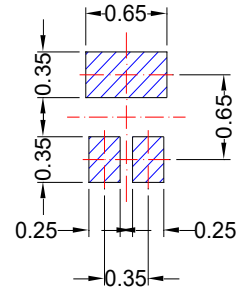
DFN1006-3L

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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