

GSMBSS84

60V P-Channel Enhancement Mode MOSFET

Product Description

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

These devices are 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.

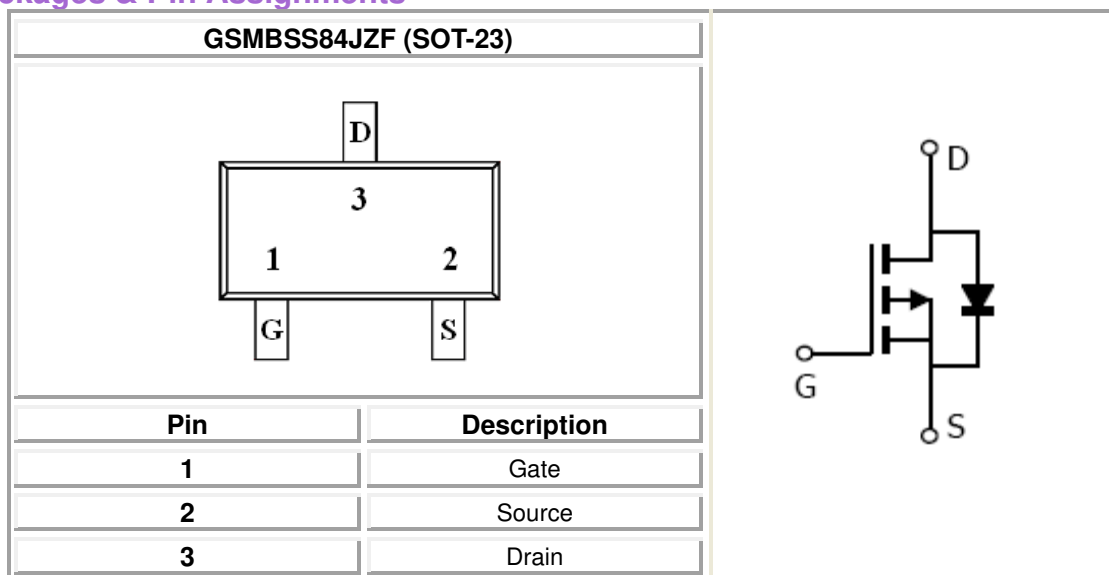
Features

- -60V/-0.13A, $R_{DS(ON)}=10\Omega@V_{GS}=-5V$
- Super high density cell design for extremely low $R_{DS(ON)}$
- Exceptional on-resistance and maximum DC current capability
- SOT-23 package design

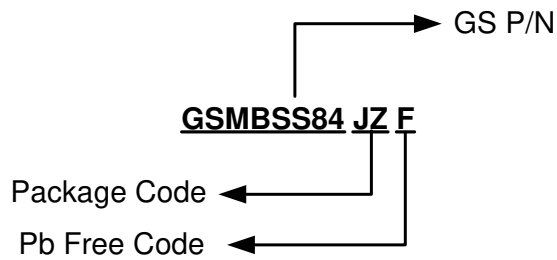
Applications

- DC to DC Converter
- Cellular & PCMCIA Card
- Cordless Telephone
- Power Management in Portable and Battery etc.

Packages & Pin Assignments

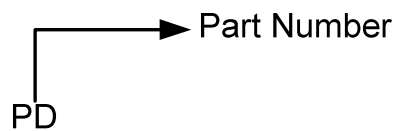


Ordering Information



Part Number	Package	Quantity
GSMBSS84JZF	SOT-23	3000 PCS

Marking Information



Absolute Maximum Ratings

($T_A=25^{\circ}\text{C}$ unless otherwise noted)

Symbol	Parameter	Typical	Unit
V_{DSS}	Drain-Source Voltage	-60	V
V_{GSS}	Gate-Source Voltage	± 20	V
I_D	Continuous Drain Current ($T_A=25^{\circ}\text{C}$)	-130	mA
I_{DM}	Pulsed Drain Current ($t_p \leq 10\mu\text{s}$)	-520	mA
I_S	Continuous Current	-0.13	A
P_D	Power Dissipation ($T_A=25^{\circ}\text{C}$)	225	mW
T_J	Operating Junction Temperature	-55 to 150	$^{\circ}\text{C}$
T_{STG}	Storage Temperature Range	-55 to 150	$^{\circ}\text{C}$
$R_{\theta JA}$	Maximax Junction to Ambient	556	$^{\circ}\text{C}/\text{W}$

Note 1: Pulse Test: $PW \leq 300\mu\text{s}$, Duty Cycle $\leq 2\%$.

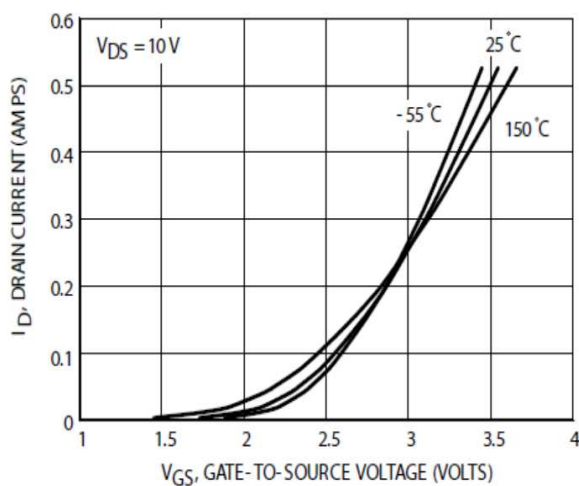
2: Switching Time is Essentially Independent of Operating Temperature.

Electrical Characteristics

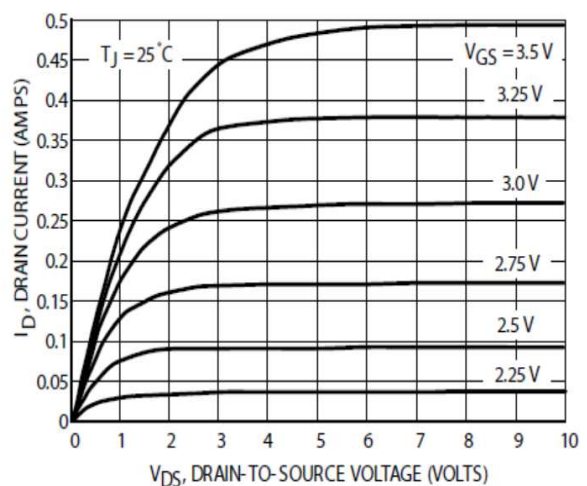
($T_A=25^\circ\text{C}$ unless otherwise noted)

Symbol	Parameter	Conditions	Min	Typ	Max	Unit
Static						
$V_{(BR)DSS}$	Drain-Source Breakdown Voltage	$V_{GS}=0V, I_D=-250\mu A$	-60			V
$V_{GS(th)}$	Gate Threshold Voltage	$V_{DS}=V_{GS}, I_D=-1.0mA$	-0.8		-2.0	V
I_{GSS}	Gate-Source Leakage Current	$V_{DS}=0V, V_{GS}=\pm 20V$			± 60	μA
I_{DSS}	Zero Gate Voltage Drain Current	$V_{DS}=-25V, V_{GS}=0V$			-0.1	μA
		$V_{DS}=-50V, V_{GS}=0V$			-15	
$R_{DS(on)}$	Drain-Source On-Resistance	$V_{GS}=-5V, I_D=-100mA$			10	Ω
g_{fs}	Forward Transconductance	$V_{DS}=-25V, I_D=-100mA, f=1.0KHz$	50			mS
V_{SD}	Forward Voltage			-2.5		V
Dynamic						
C_{iss}	Input Capacitance	$V_{DS}=-5V, V_{GS}=0V, f=1MHz$		30		μF
C_{oss}	Output Capacitance			10		
C_{rss}	Reverse Transfer Capacitance			5.0		
Q_G	Gate Charge			6		nC
$t_{d(on)}$	Turn-On Time	$V_{DD}=-15V, R_L=50\Omega, I_D=-2.5A$		25		ns
t_r				1.0		
$t_{d(off)}$	Turn-Off Time			16		
t_f				8.0		

Typical Performance Characteristics

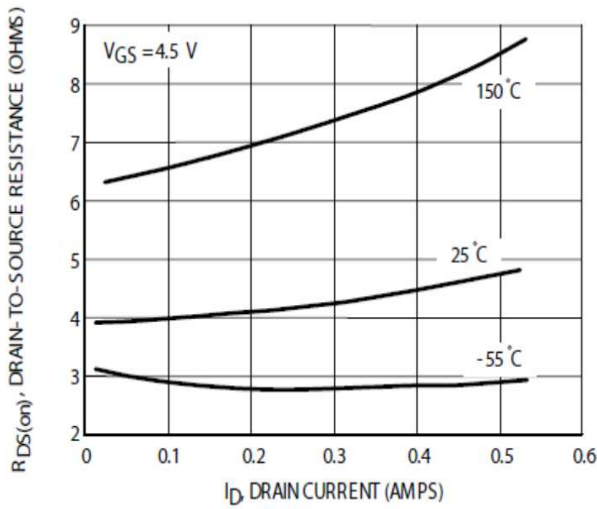


Transfer Characteristics

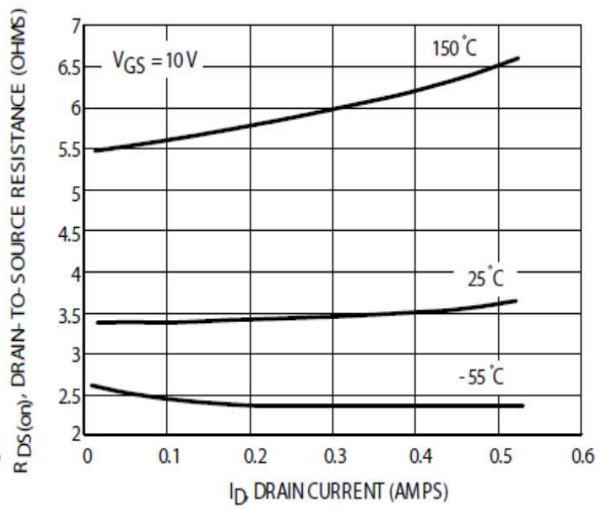


On-Region Characteristics

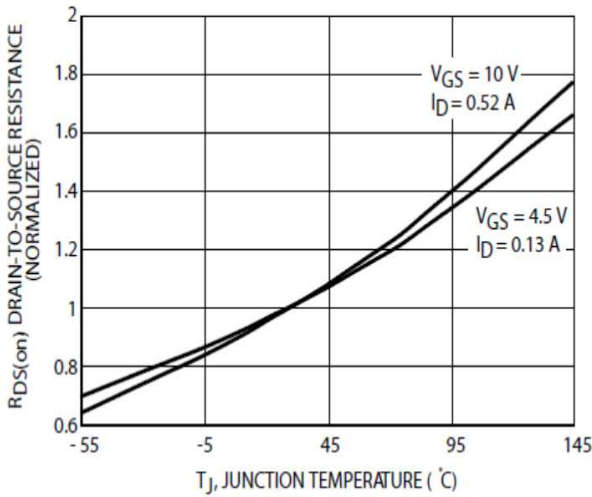
Typical Performance Characteristics (continue)



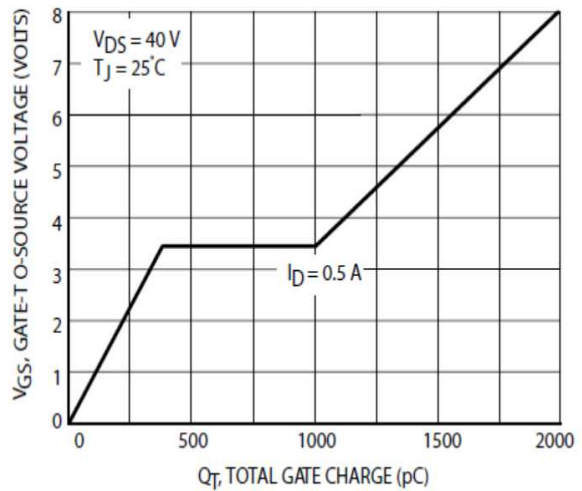
On-Resistance versus Drain Current



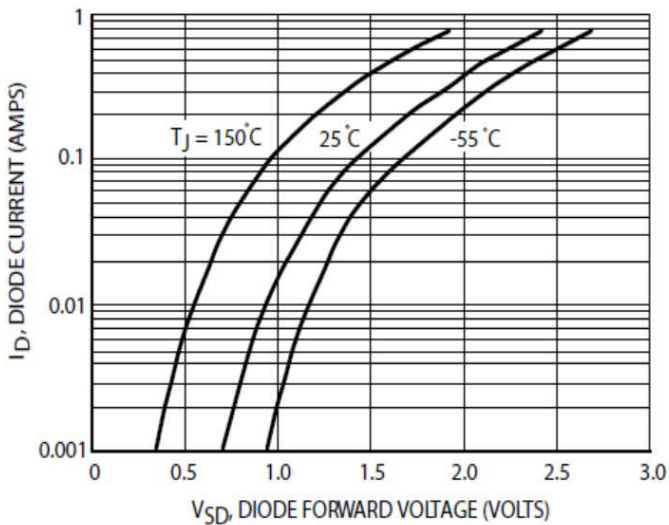
On-Resistance versus Drain Current



On-Resistance Variation with Temperature



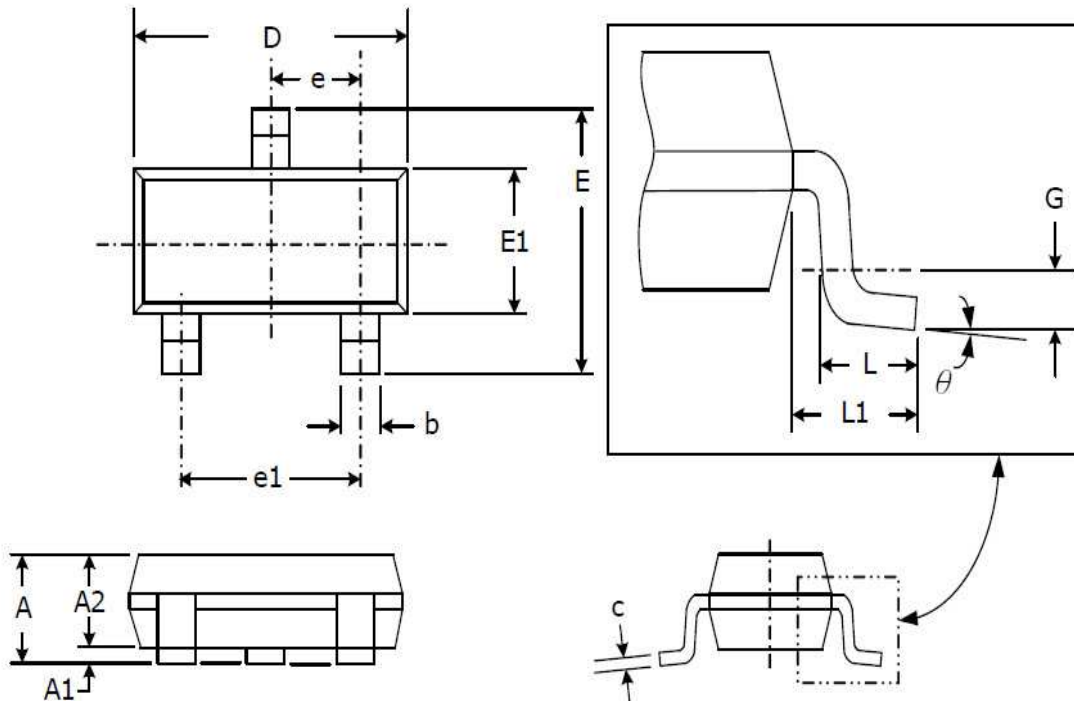
Gate Charge



Body Diode Forward Voltage

Package Dimension

SOT-23







Dimensions



SYMBOL	Millimeters		Inches	
	MIN	MAX	MIN	MAX
A	0.75	1.17	0.030	0.046
A1	0.05	0.15	0.002	0.006
A2	0.70	1.02	0.028	0.040
b	0.30	0.50	0.012	0.020
c	0.08	0.20	0.003	0.008
D	2.80	3.04	0.110	0.120
E	2.10	2.64	0.083	0.104
E1	1.20	1.40	0.047	0.055
e	0.95 (TYP)		0.037 (TYP)	
e1	1.90 (TYP)		0.075 (TYP)	
L	0.40	0.60	0.016	0.024
L1	0.54 (TYP)		0.021 (TYP)	
G	0.25 (TYP)		0.010 (TYP)	
theta	0°	8°	0°	8°

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