

GSMDS3807

30V Dual P-Channel MOSFETs

Product Description

These Dual P-Channel enhancement mode power field effect transistors are 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.

These devices are well suited for high efficiency fast switching applications.

Features

- -30V, -7.9A, $R_{DS(ON)}=23m\Omega@V_{GS}=-10V$
- Improved dv/dt capability
- Fast switching
- Suit for -4.5V Gate Drive Applications
- Green Device Available
- SOP-8 package design

Applications

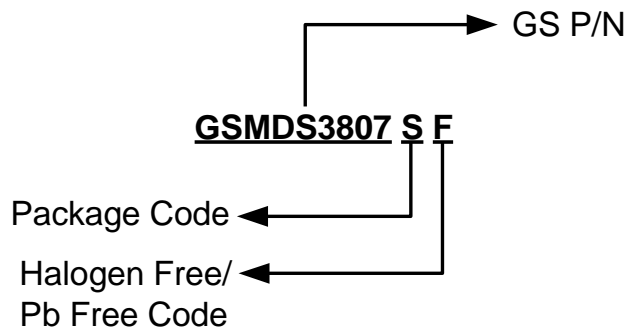
- MB / VGA / Vcore
- Load Switch
- LED Applications
- POL Applications

Packages & Pin Assignments

GSMDS3807SF (SOP-8)

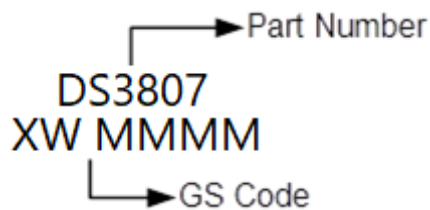
Pin No	Description	Pin No	Description
1	Source 1	5	Drain 2
2	Gate 1	6	Drain 2
3	Source 2	7	Drain 1
4	Gate 2	8	Drain 1

Ordering Information



Part Number	Package	Quantity Reel
GSMDS3807SF	SOP-8	4000 PCS

Marking Information



Absolute Maximum Ratings

(T_A=25°C unless otherwise noted)

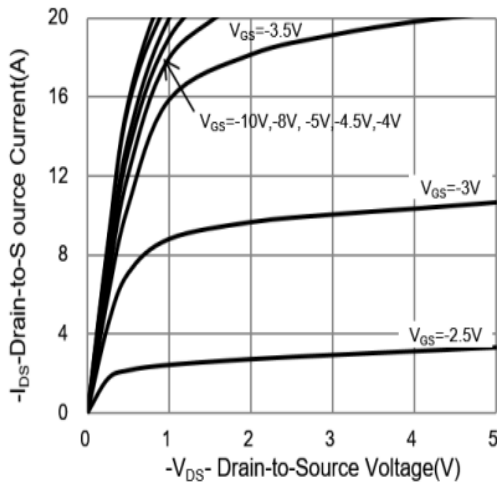
Symbol	Parameter	Typical	Unit
V _{DS}	Drain-Source Voltage	-30	V
V _{GS}	Gate-Source Voltage	±20	V
I _D	Continuous Drain Current	T _A =25°C	-7.9
		T _A =70°C	-6.3
I _{DM}	Pulsed Drain Current	-28	A
P _D	Power Dissipation	T _A =25°C	2.1
		T _A =70°C	1.4
T _J	Operating Junction Temperature Range	-55 to 150	°C
T _{STG}	Storage Temperature Range	-55 to 150	°C
R _{θJA}	Thermal Resistance-Junction to Ambient	60	°C/W

Electrical Characteristics

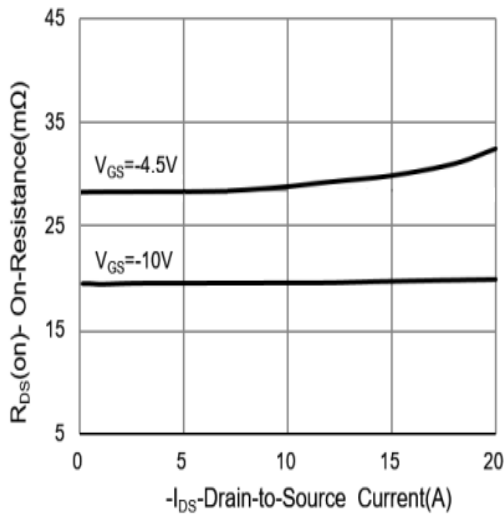
($T_A=25^\circ\text{C}$ unless otherwise noted)

Symbol	Parameter	Conditions	Min	Typ	Max	Unit
Static						
$V_{(BR)DSS}$	Drain-Source Breakdown Voltage	$V_{GS}=0V, I_D=-250\mu A$	-30			V
$V_{GS(th)}$	Gate Threshold Voltage	$V_{DS}=V_{GS}, I_D=-250\mu A$	-1.2	-1.6	-2.5	V
I_{GSS}	Gate Leakage Current	$V_{DS}=0V, V_{GS}=\pm 20V$			± 100	nA
I_{DSS}	Zero Gate Voltage Drain Current	$V_{DS}=-30V, V_{GS}=0V$			-1	uA
		$V_{DS}=-24V, V_{GS}=0V, T_J=125^\circ\text{C}$			-10	
$R_{DS(on)}$	Drain-Source On-Resistance	$V_{GS}=-10V, I_D=-5A$		20	23	m Ω
		$V_{GS}=-4.5V, I_D=-3A$		30	36	
g_{FS}	Forward Transconductance	$V_{DS}=-10V, I_D=-3A$		6.8		S
V_{SD}	Diode Forward Voltage	$V_{GS}=0V, I_S=-1A$			-1	V
Dynamic						
Q_g	Total Gate Charge	$V_{DS}=-15V, V_{GS}=-4.5V, I_D=-5A$		11	17	nC
Q_{gs}	Gate-Source Charge			3.4	6	
Q_{gd}	Gate-Drain Charge			4.2	8	
C_{iss}	Input Capacitance	$V_{DS}=-15V, V_{GS}=0V, f=1\text{MHz}$		1250	1820	pF
C_{oss}	Output Capacitance			160	235	
C_{rss}	Reverse Transfer Capacitance			90	130	
$t_{d(on)}$	Turn-On Time	$V_{DD}=-15V, I_D=-1A, V_{GS}=-10V, R_G=6\Omega$		5.8	11	ns
t_r				18.8	36	
$t_{d(off)}$	Turn-Off Time			46.9	89	
t_f				12.3	23	

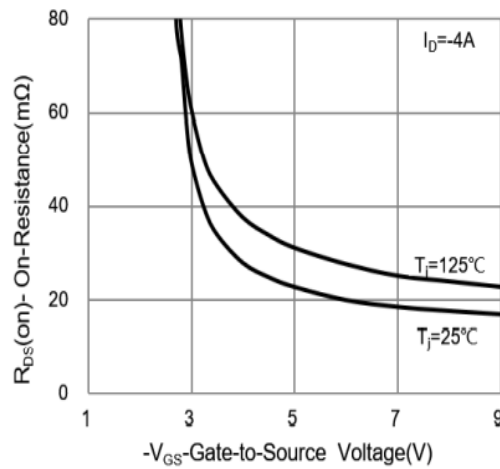
Typical Performance Characteristics



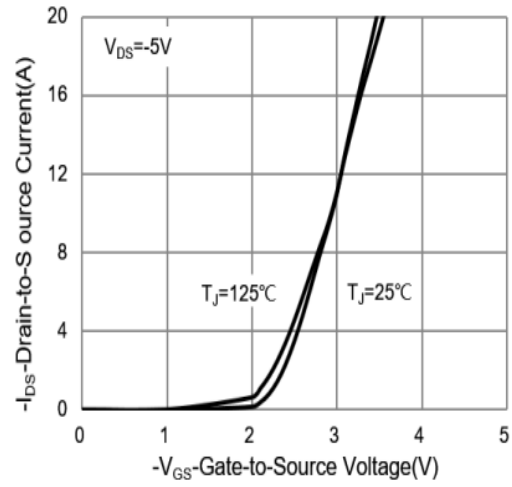
Output Characteristics



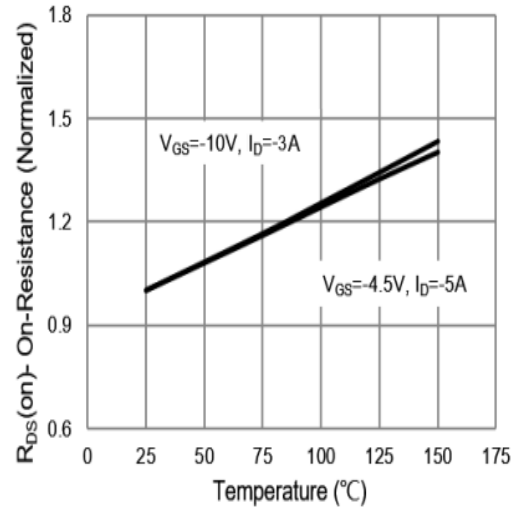
On-Resistance vs. Drain Current



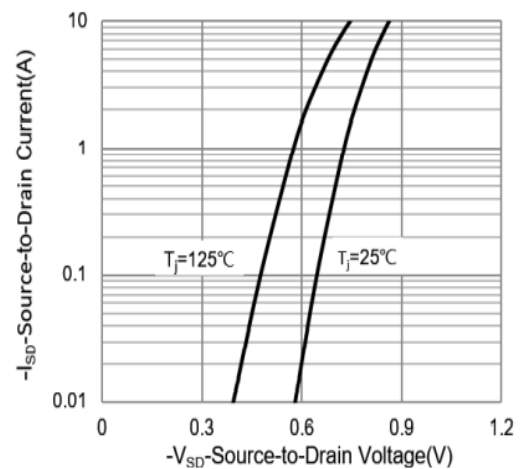
On-resistance vs. Gate-to-Source Voltage



Transfer Characteristics

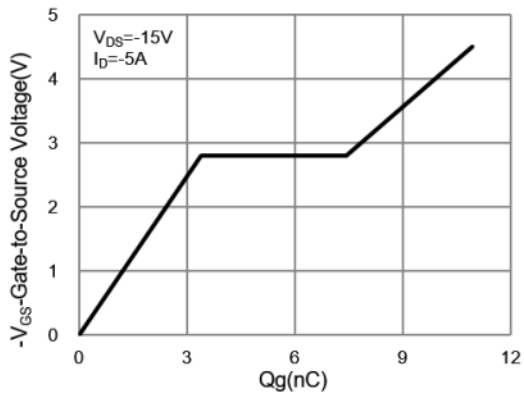


On-Resistance vs. Junction temperature

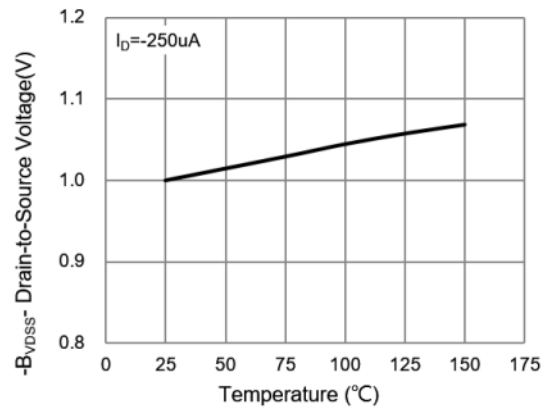


Source-Drain Diode Forward Voltage

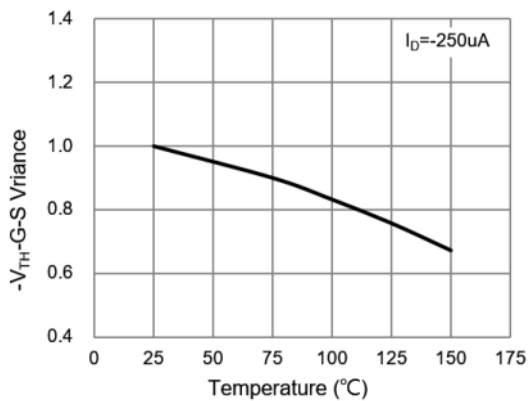
Typical Performance Characteristics (continue)



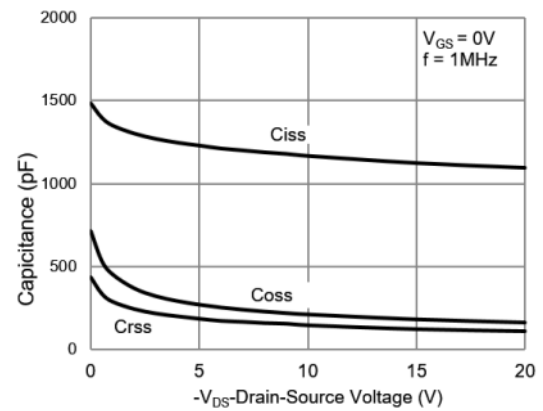
Gate-Charge



Breakdown Voltage vs. Temperature



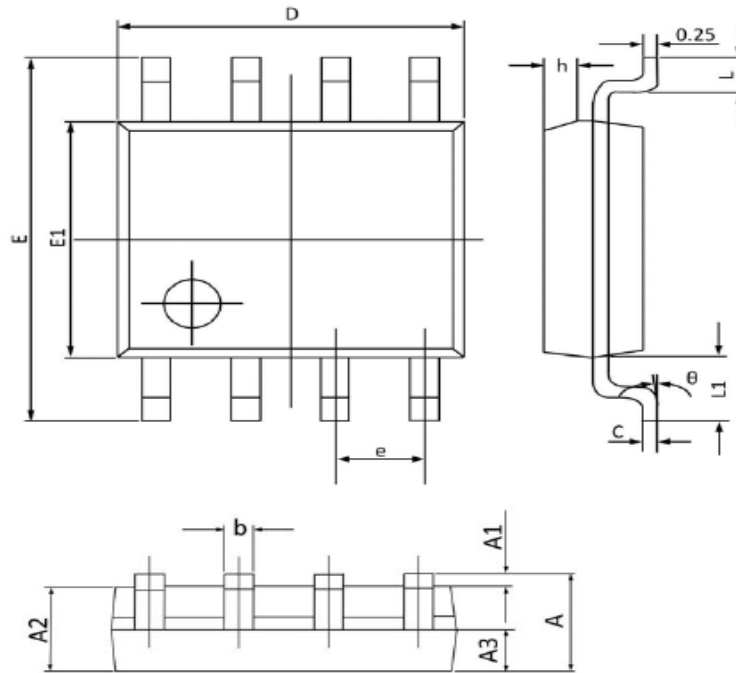
Threshold Voltage



Capacitance

Package Dimension

SOP-8







Dimensions



Symbol	Millimeters		Inches	
	Min	Max	Min	Max
A	1.350	1.750	0.053	0.068
A1	0.100	0.250	0.004	0.009
A2	1.300	1.500	0.052	0.059
A3	0.600	0.700	0.024	0.027
b	0.390	0.480	0.016	0.018
c	0.210	0.260	0.009	0.010
D	4.700	5.100	0.186	0.200
E	5.800	6.200	0.229	0.244
E1	3.700	4.100	0.146	0.161
e	1.270 (BSC)		0.050 (BSC)	
h	0.250	0.500	0.010	0.019
L	0.500	0.800	0.019	0.031
L1	1.050 (BSC)		0.041 (BSC)	
θ	0°	8°	0°	8°

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