

General Description

The SFG08S06GF is a 60V, 300mA, N-channel enhancement mode MOSFET. It is specially designed for use in a wide range of applications, including power supplies, motor drives, and industrial equipment. The device is available in a 5-pin TO-18 package.

Features

- V_{DS} = 60V
- I_D = 300mA
- R_{DS(ON)} = 5.5mΩ
- Q_g = 55.2nC



Applications

- Power supplies
- Motor drives
- Industrial equipment
- Switched mode power supply

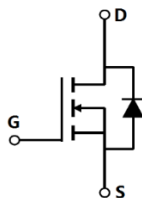
Key Performance Parameters

Parameter	Value	Unit
V _{DS, min} @ T _{j(max)}	80	V
I _{D, pulse}	300	A
R _{DS(ON), max} @ V _{GS} =10V	5.5	mΩ
Q _g	55.2	nC

Marking Information

Product Name	Package	Marking
SFG 8S06GF	PDFN5 6	SFG 8S06G

Package & Pin information



Absolute Maximum Ratings at $T_j=25$ unless otherwise noted

Parameter	Symbol	Value	Unit
Drain-source voltage	V_{DS}	80	V
Gate-source voltage	V_{GS}	± 20	V
Continuous drain current ¹⁾ , $T_C=25$ °C	I_D	100	A
Pulsed drain current ²⁾ , $T_C=25$ °C	$I_{D, pulse}$	300	A
Continuous diode forward current ¹⁾ , $T_C=25$ °C	I_S	100	A
Diode pulsed current ²⁾ , $T_C=25$ °C	$I_{S, pulse}$	300	A
Power dissipation ³⁾ , $T_C=25$ °C	P_D	148	W
Single pulsed avalanche energy ⁵⁾	E_{AS}	101	mJ
Operation and storage temperature	T_{stg}, T_j	-55 to 150	°C

Thermal Characteristics

Parameter	Symbol	Value	Unit
Thermal resistance, junction-case	R	0.84	°C/W
Thermal resistance, junction-ambient ⁴⁾	R	62	°C/W

Electrical Characteristics at $T_j=25$ unless otherwise specified

Parameter	Symbol	Min.	Typ.	Max.	Unit	Test condition
Drain-source breakdown voltage	BV_{DSS}	80			V	$V_{GS}=0$ V, $I_D=250$ A
Gate threshold voltage	$V_{GS(th)}$	1.0		2.5	V	$V_{DS}=V_{GS}$, $I_D=250$

Dynamic Characteristics

Parameter	Symbol	Min.	Typ.	Max.	Unit	Test condition
Input capacitance	C_{iss}		3869.9		pF	$V_{GS}=0\text{ V}$, $V_{DS}=40\text{ V}$, 00 kHz
Output capacitance	C_{oss}		1304.2		pF	
Reverse transfer capacitance	C_{rss}		50.9		pF	
Turn-on delay time	$t_{d(on)}$		22.0		ns	$V_{GS}=10\text{ V}$, $V_{DS}=50\text{ V}$, R_G $I_D=25\text{ A}$
Rise time	t_r		21.5		ns	
Turn-off delay time	$t_{d(off)}$		62.7		ns	
Fall time	t_f		61.4		ns	

Gate Charge Characteristics

Parameter	Symbol	Min.	Max.	Unit	Test condition
-----------	--------	------	------	------	----------------

Electrical Characteristics Diagrams

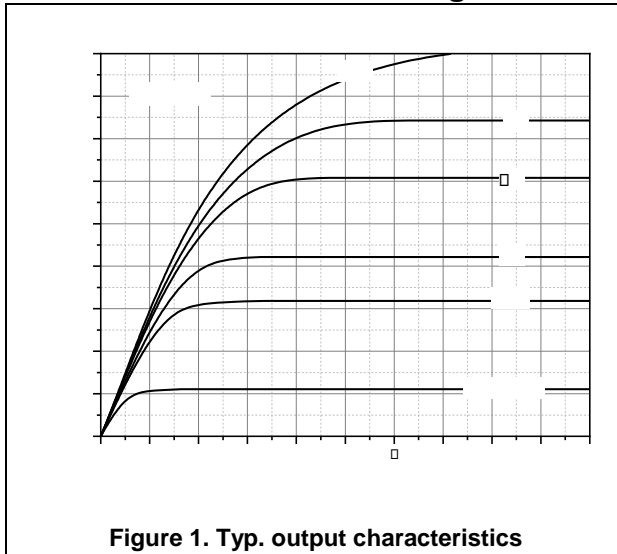


Figure 1. Typ. output characteristics

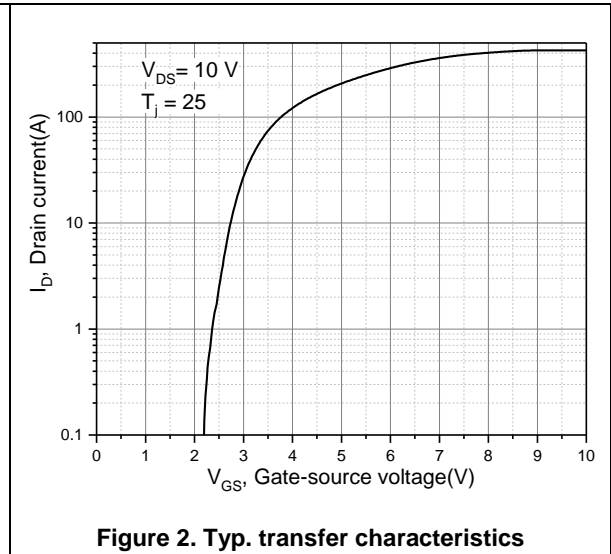


Figure 2. Typ. transfer characteristics

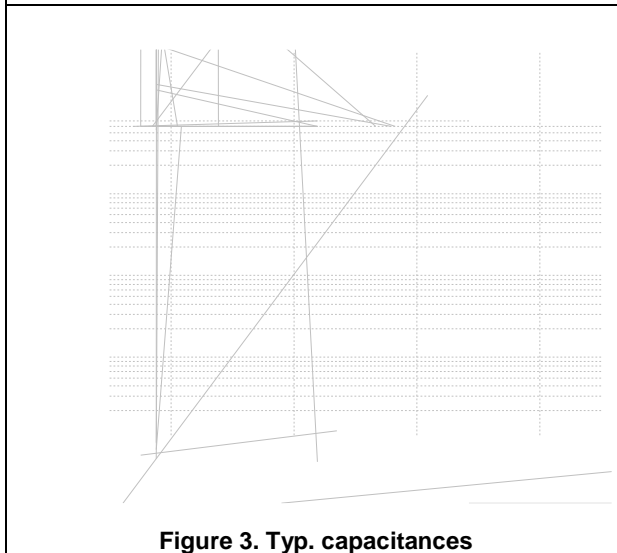


Figure 3. Typ. capacitances

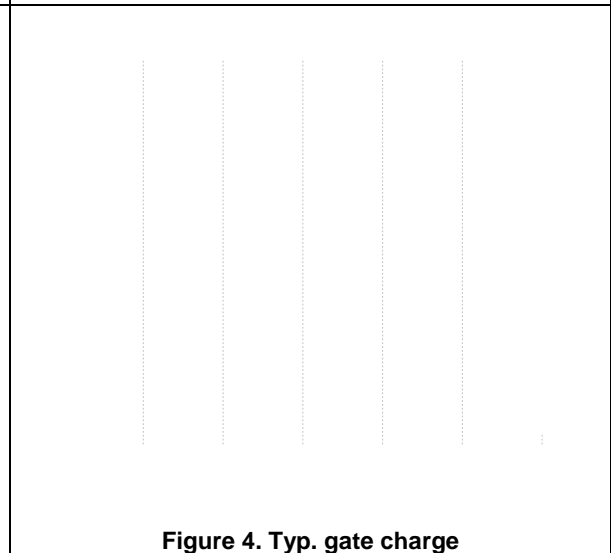


Figure 4. Typ. gate charge

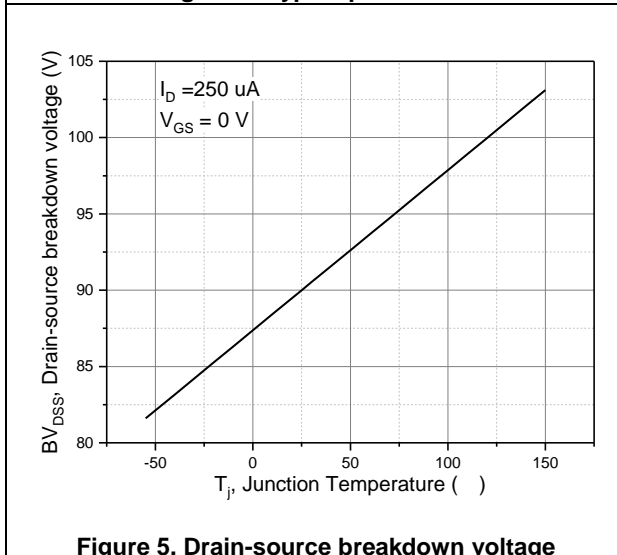


Figure 5. Drain-source breakdown voltage

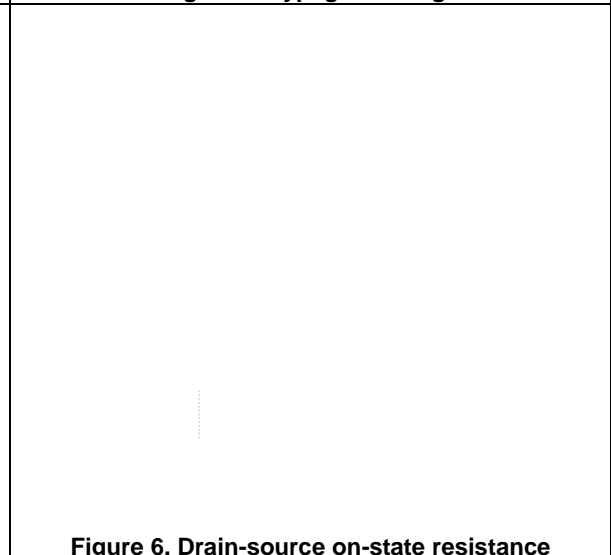



Figure 6. Drain-source on-state resistance

SFG08S06GF
Enhancement Mode N-Channel Power MOSFET 

Test circuits and waveforms

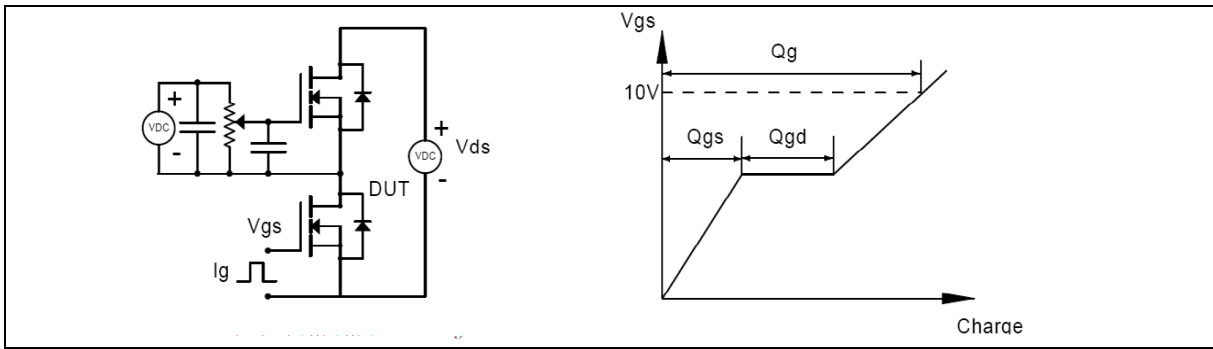


Figure 1. Gate charge test circuit & waveform



Figure 2. Switching time test circuit & waveforms

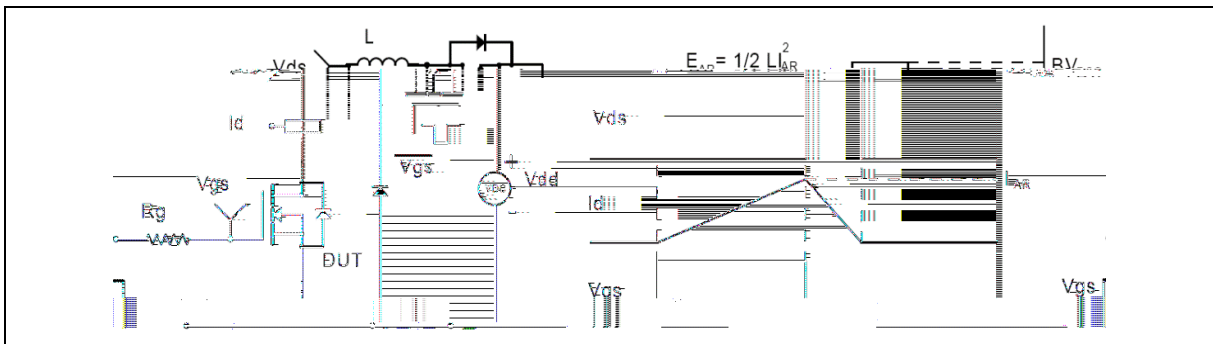


Figure 3. Unclamped inductive switching (UIS) test circuit & waveforms

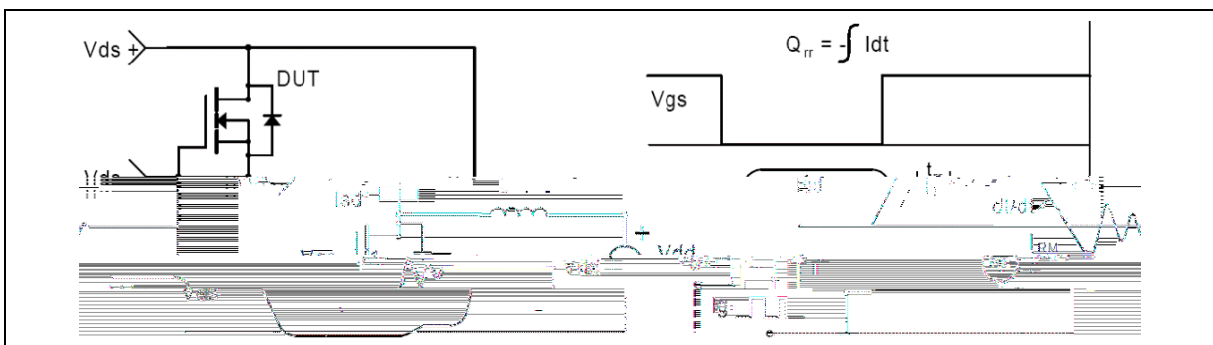


Figure 4. Diode reverse recovery test circuit & waveforms

Package Information

Symbol	mm		
	Min	Nom	Max
A	1.0	1.1	1.2
b	0.3	0.4	0.5
c		0.254	0.354
D1	5.0	5.2	5.4



Ordering Information

Package Type	Units/ Reel	Reels/ Inner Box	Units/ Inner Box	Inner Boxes/ Carton Box	Units/ Carton Box
PDFN5 6-C	5000	2	10000	5	50000

Product Information

Product	Package	Pb Free	RoHS	Halogen Free
SFG08S06GF	PDFN5 6	yes	yes	yes

Legal Disclaimer

96 : 7@ 2E@ 8:G6 : E9:D5@F 6 ED92=: @6G6 E36 G82G65 2D2 8F2G E66 @ 4@5:E@D @492G24E6DE4D :E9 GDA64E@2 6 2 A6D @9: E8:G6 96G: 2 E A42=G2F6DDE2E65 96G: 2 5 @2 : 7@ 2E@ G82G: 8 E96 2AA=42E@ @E96 56G46 G6 E= 6 :4@5F4E@96G3 5:D42: D2 2 5 2= 2G2 E6D2 5 =23:E6D@2 : 5 : 4F5: 8 :E@E= :E@ 2G2 E6D@ @-: 7C 86 6 E@: E6=64E2=A@A6E C89E@ 2 E9:G A2E

@7F@6C: 7@ 2E@ @ E649 @G 56=G6 E6C D2 5 4@5:E@D 2 5 AC46D A62D6 4@E24EE6 G6 E= 6 :4@5F4E@D26D GAGD6 E2EGD [@G E2E6 :4@](#)

© Oriental Semiconductor Co.,Ltd. All Rights Reserved

