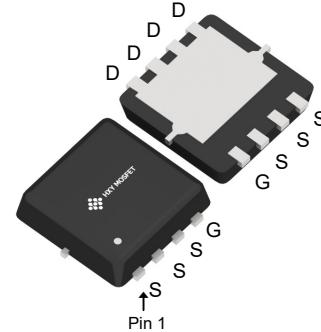




## Description

The DMG7401SFG uses advanced trench technology and design to provide excellent RDS(ON) with low gate charge .Thisdevice is well suited for high currentload applications.



DFN3X3-8L

## General Features

$V_{DS} = -30V, I_D = -32A$

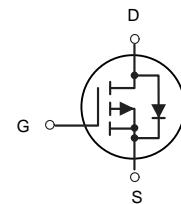
$R_{DS(ON)} < 12m\Omega @ V_{GS} = -10V$

$R_{DS(ON)} < 18m\Omega @ V_{GS} = -4.5V$

## Application

High side switch for full bridge converter

DC/DC converter for LCD display



P-Channel MOSFET

## Package Marking and Ordering Information

Product ID	Pack	Brand	Qty(PCS)
DMG7401SFG	DFN3X3-8L	HXY MOSFET	5000

## Absolute Maximum Ratings@ $T_j=25^\circ C$ (unless otherwise specified)

Symbol	Parameter	Rating	Units
V <sub>DS</sub>	Drain-Source Voltage	-30	V
V <sub>GS</sub>	Gate-Source Voltage	$\pm 25$	V
I <sub>D</sub> @ $T_A=25^\circ C$	Drain Current, $V_{GS} @ 10V$	-32	A
I <sub>D</sub> @ $T_A=70^\circ C$	Drain Current, $V_{GS} @ 10V$	-9.8	A
I <sub>DM</sub>	Pulsed Drain Current <sup>1</sup>	-65	A
P <sub>D</sub> @ $T_A=25^\circ C$	Total Power Dissipation	3.57	W
T <sub>STG</sub>	Storage Temperature Range	-55 to 150	°C
T <sub>J</sub>	Operating Junction Temperature Range	-55 to 150	°C
R <sub>thj-c</sub>	Maximum Thermal Resistance, Junction-case	6	°C/W
R <sub>thj-a</sub>	Maximum Thermal Resistance, Junction-ambient <sup>3</sup>	35	°C/W



**Electrical Characteristics@Tj=25°C(unless otherwise specified)**

Symbol	Parameter	Test Conditions	Min.	Typ.	Max.	Units
BV <sub>DSS</sub>	Drain-Source Breakdown Voltage	V <sub>GS</sub> =0V, I <sub>D</sub> =-250uA	-30	-	-	V
RDS(ON)	Static Drain-Source On-Resistance <sup>2</sup>	V <sub>GS</sub> =-10V, I <sub>D</sub> =-15A	-	10	12	mΩ
		V <sub>GS</sub> =-4.5V, I <sub>D</sub> =-10A	-	14	18	mΩ
V <sub>GS(th)</sub>	Gate Threshold Voltage	V <sub>DS</sub> =V <sub>GS</sub> , I <sub>D</sub> =-250uA	-1	-1.95	-2.5	V
g <sub>fs</sub>	Forward Transconductance	V <sub>DS</sub> =-10V, I <sub>D</sub> =-6A	-	19	-	S
I <sub>DSS</sub>	Drain-Source Leakage Current	V <sub>DS</sub> =-24V, V <sub>GS</sub> =0V	-	-	-30	uA
I <sub>GSS</sub>	Gate-Source Leakage	V <sub>GS</sub> =±20V, V <sub>DS</sub> =0V	-	-	±100	nA
Q <sub>g</sub>	Total Gate Charge	I <sub>D</sub> =-15A	-	12.5	24	nC
Q <sub>gs</sub>	Gate-Source Charge	V <sub>DS</sub> =-15V	-	5.4	-	nC
Q <sub>gd</sub>	Gate-Drain ("Miller") Charge	V <sub>GS</sub> =-4.5V	-	5	-	nC
t <sub>d(on)</sub>	Turn-on Delay Time	V <sub>DS</sub> =-15V	-	4.4	-	ns
t <sub>r</sub>	Rise Time	I <sub>D</sub> =-15A	-	11.2	-	ns
t <sub>d(off)</sub>	Turn-off Delay Time	R <sub>G</sub> =3.3Ω	-	34	-	ns
t <sub>f</sub>	Fall Time	V <sub>GS</sub> =-10V	-	18	-	ns
C <sub>iss</sub>	Input Capacitance	V <sub>GS</sub> =0V	-	1345	2000	pF
C <sub>oss</sub>	Output Capacitance	V <sub>DS</sub> =-15V f=1.0MHz	-	194	-	pF
C <sub>rss</sub>	Reverse Transfer Capacitance		-	158	-	pF
t <sub>rr</sub>	Reverse Recovery Time	I <sub>S</sub> =-15A, V <sub>GS</sub> =0V, dI/dt=100A/μs	-	12.4	-	ns
Q <sub>rr</sub>	Reverse Recovery Charge		-	5	-	nC

**Notes:**

1.Pulse width limited by Max. junction temperature.

2.Pulse test



## Typical Characteristics

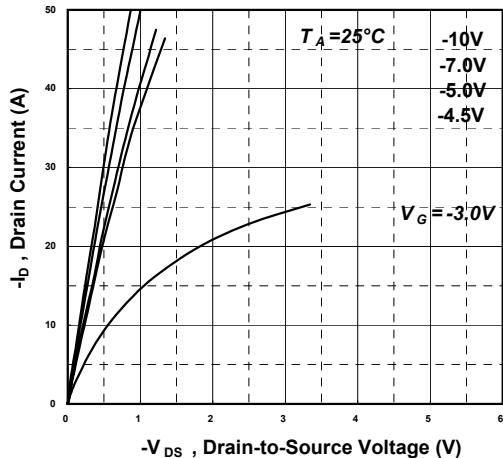


Fig 1. Typical Output Characteristics

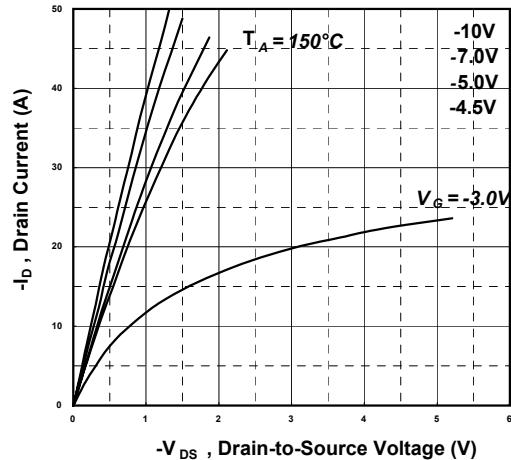


Fig 2. Typical Output Characteristics

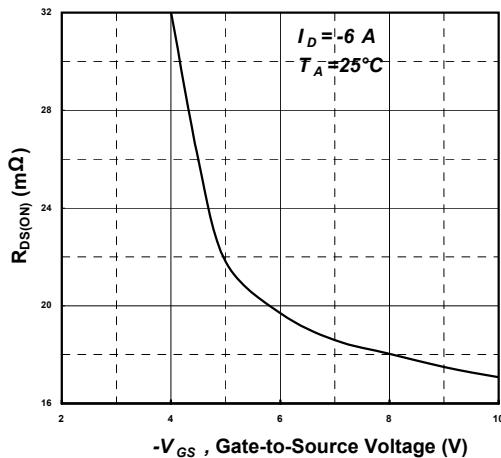


Fig 3. On-Resistance v.s. Gate Voltage

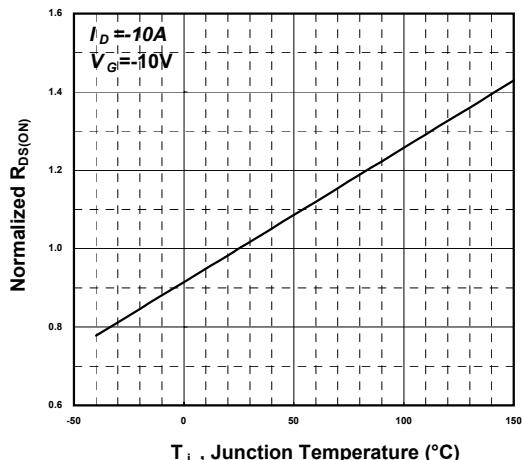


Fig 4. Normalized On-Resistance v.s. Junction Temperature

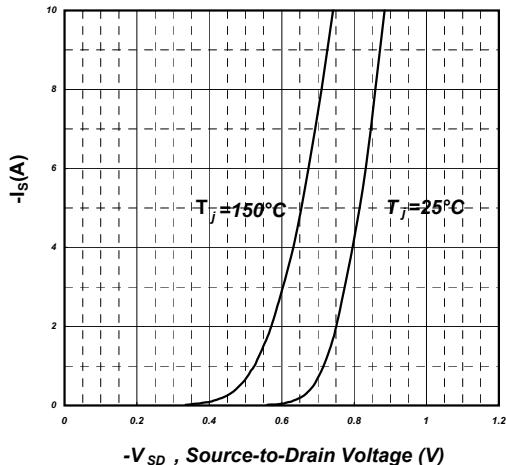


Fig 5. Forward Characteristic of Reverse Diode

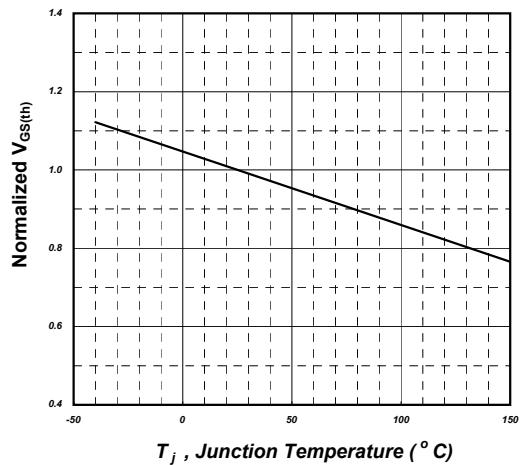
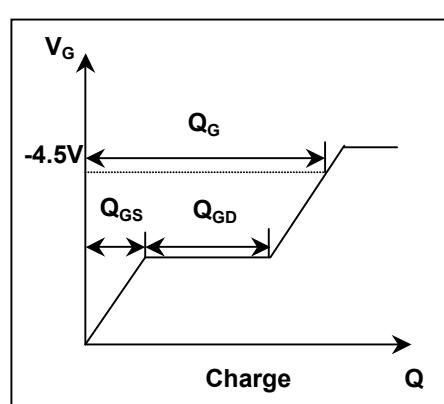
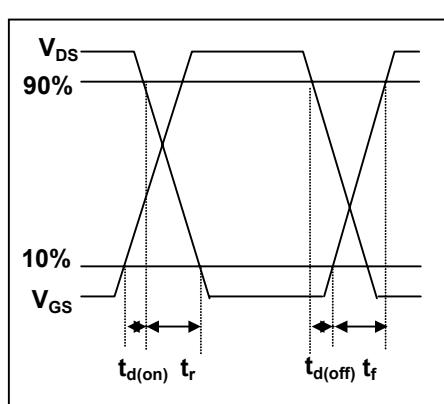
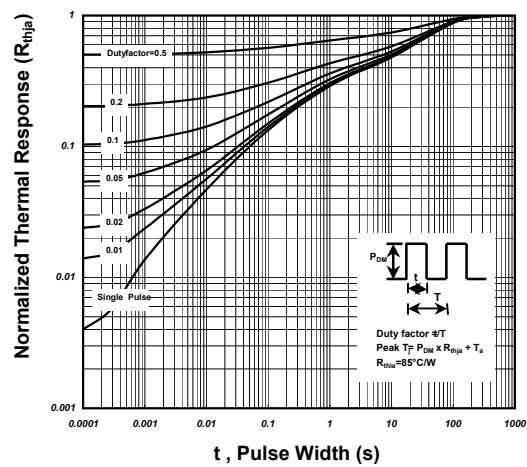
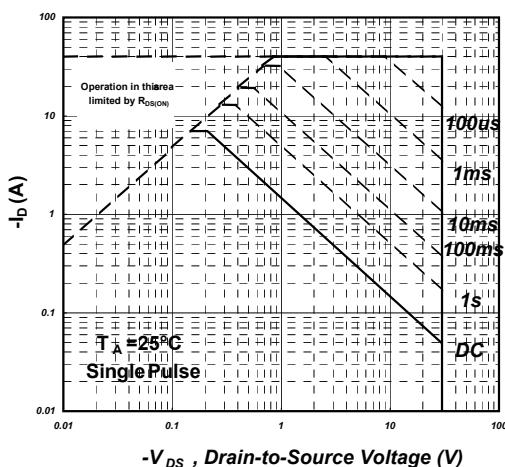
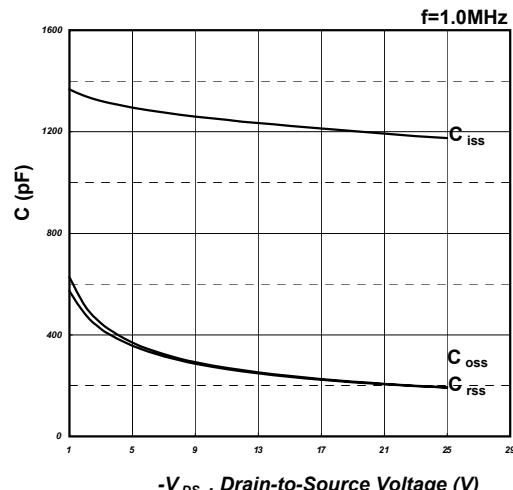
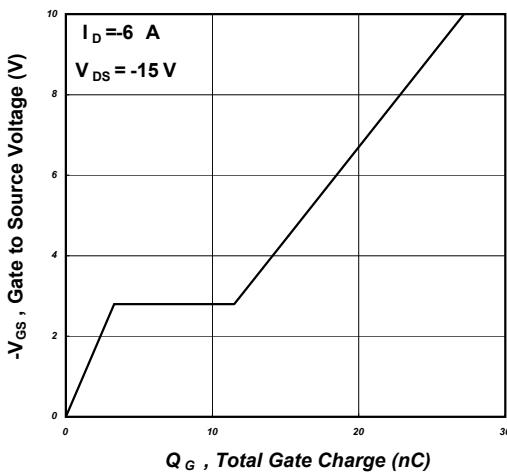
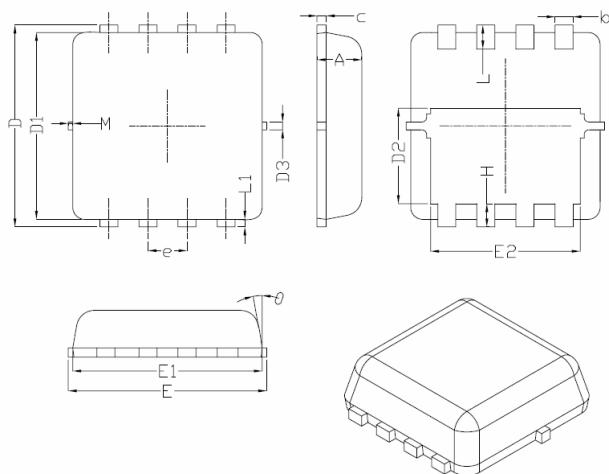


Fig 6. Gate Threshold Voltage v.s. Junction Temperature





## DFN3X3-8L Package Information



Symbol	Dimensions In Millimeters		
	Min.	Nom.	Max.
A	0.70	0.75	0.80
b	0.25	0.30	0.35
c	0.10	0.15	0.25
D	3.25	3.35	3.45
D1	3.00	3.10	3.20
D2	1.48	1.58	1.68
D3	-	0.13	-
E	3.20	3.30	3.40
E1	3.00	3.15	3.20
E2	2.39	2.49	2.59
e	0.65BSC		
H	0.30	0.39	0.50
L	0.30	0.40	0.50
L1	-	0.13	-
M	*	*	0.15
θ		10°	12°



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