

MSKSEMI 美森科

SEMICONDUCTOR



ESD



TVS



TSS



MOV



GDT



PLED

AON3419-MS

Product specification

Description

The AON3419-MS uses advanced trench technology and design to provide excellent $R_{DS(ON)}$ with low gate charge. This device is well suited for high current load applications.

Features

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

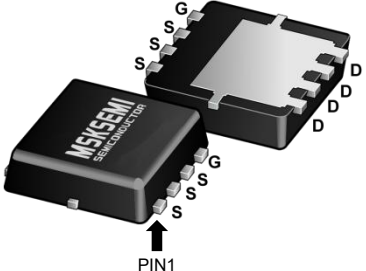
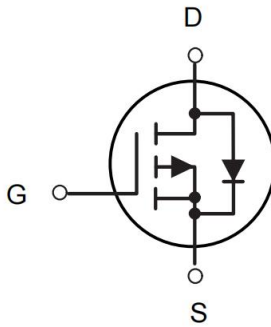

$R_{DS(ON)} < 12m\Omega @ V_{GS} = -10V$

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

Application

- High side switch for full bridge converter
- DC/DC converter for LCD display

Reference News

PACKAGE OUTLINE	P-Channel MOSFET	Marking
 <p>DFN3X3-8L</p>		

Absolute Maximum Ratings (TC=25°C unless otherwise specified)

Symbol	Parameter	Rating	Units
V_{DS}	Drain-Source Voltage	-30	V
V_{GS}	Gate-Source Voltage	± 25	V
$I_D @ T_A = 25^\circ C$	Drain Current ³ , $V_{GS} @ 10V$	-32	A
$I_D @ T_A = 70^\circ C$	Drain Current ³ , $V_{GS} @ 10V$	-9.8	A
I_{DM}	Pulsed Drain Current ¹	-65	A
$P_D @ T_A = 25^\circ C$	Total Power Dissipation	3.57	W
T_{STG}	Storage Temperature Range	-55 to 150	°C
T_J	Operating Junction Temperature Range	-55 to 150	°C
R_{thj-c}	Maximum Thermal Resistance, Junction-case	6	°C/W
R_{thj-a}	Maximum Thermal Resistance, Junction-ambient ³	35	°C/W

Electrical Characteristics (TJ=25 °C, unless otherwise noted)

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

Notes:

- 1.Pulse width limited by Max. junction temperature.
- 2.Pulse test

Typical Characteristics

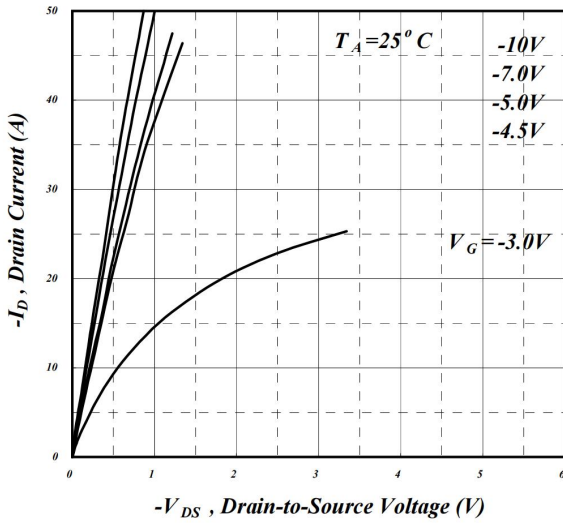


Fig.1 Typical Output Characteristics

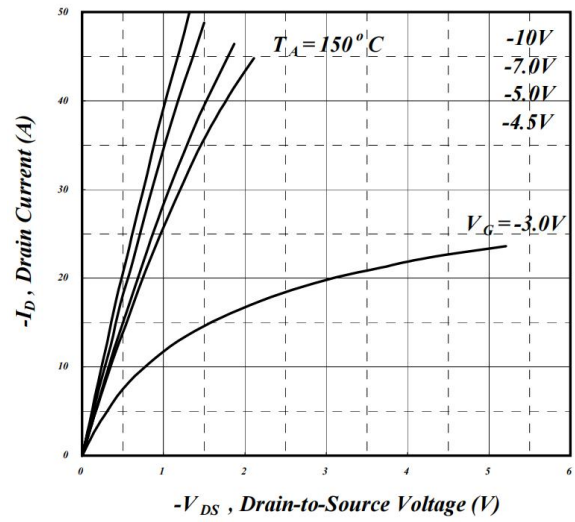


Fig 2. Typical Output Characteristics

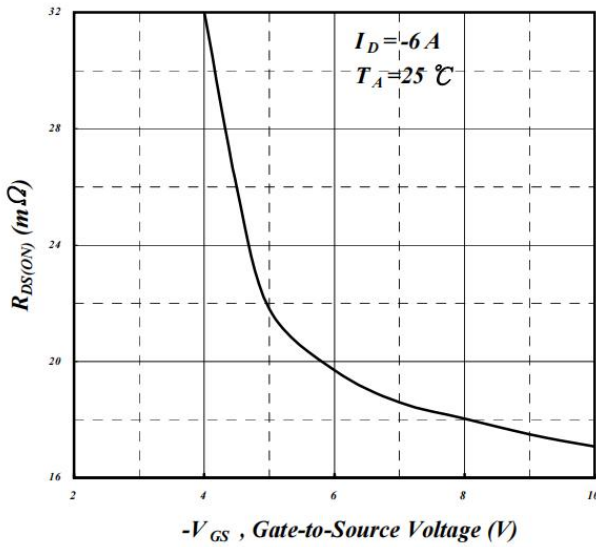


Fig 3. On-Resistance v.s. Gate Voltage

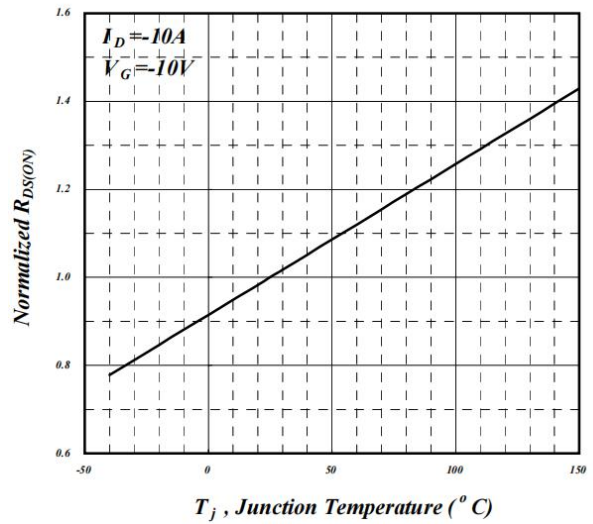


Fig 4. Normalized On-Resistance
v.s. Junction Temperature

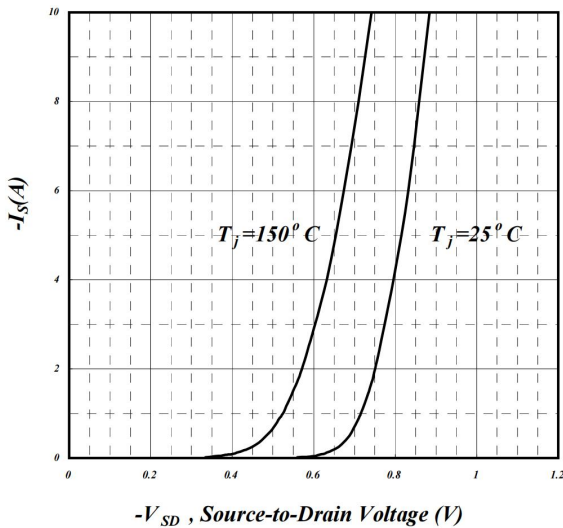


Fig 5. Forward Characteristic of
Reverse Diode

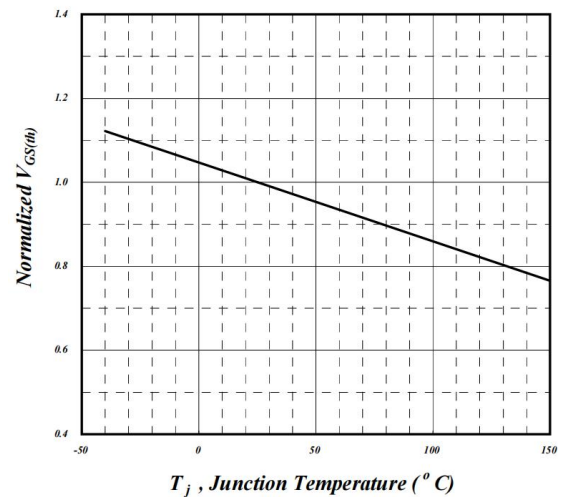


Fig 6. Gate Threshold Voltage v.s.
Junction Temperature

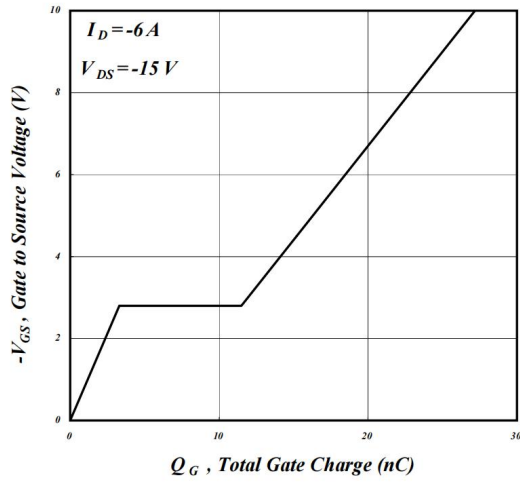


Fig 7. Gate Charge Characteristics

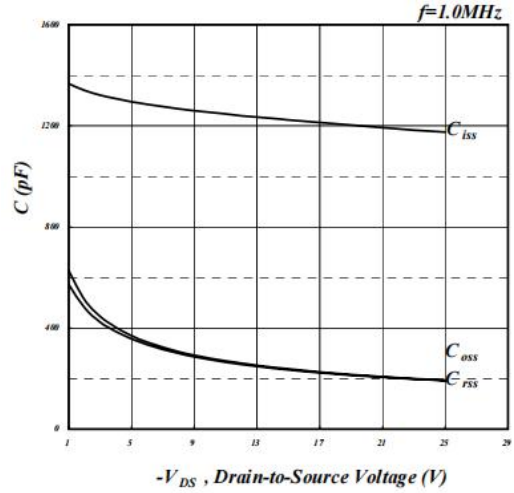


Fig 8. Typical Capacitance Characteristics

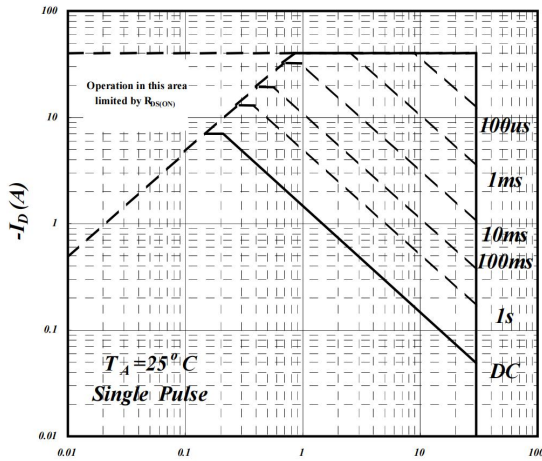


Fig 9. Maximum Safe Operating Area

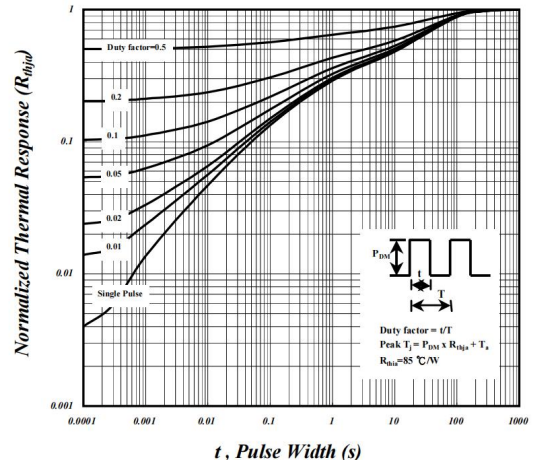


Fig 10. Effective Transient Thermal Impedance

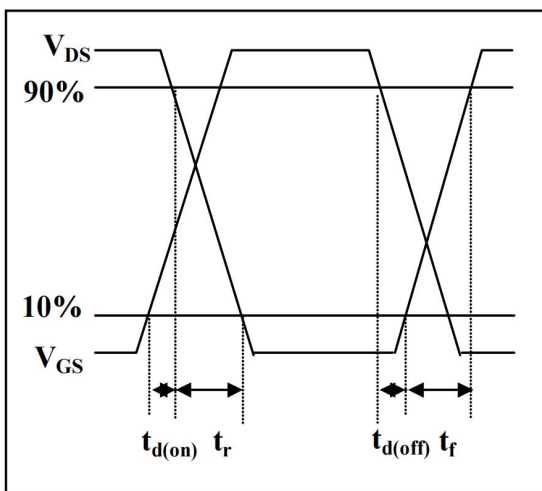


Fig 11. Switching Time Waveform

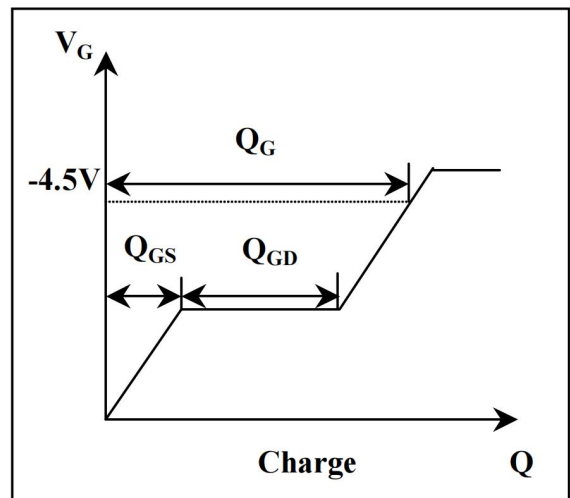
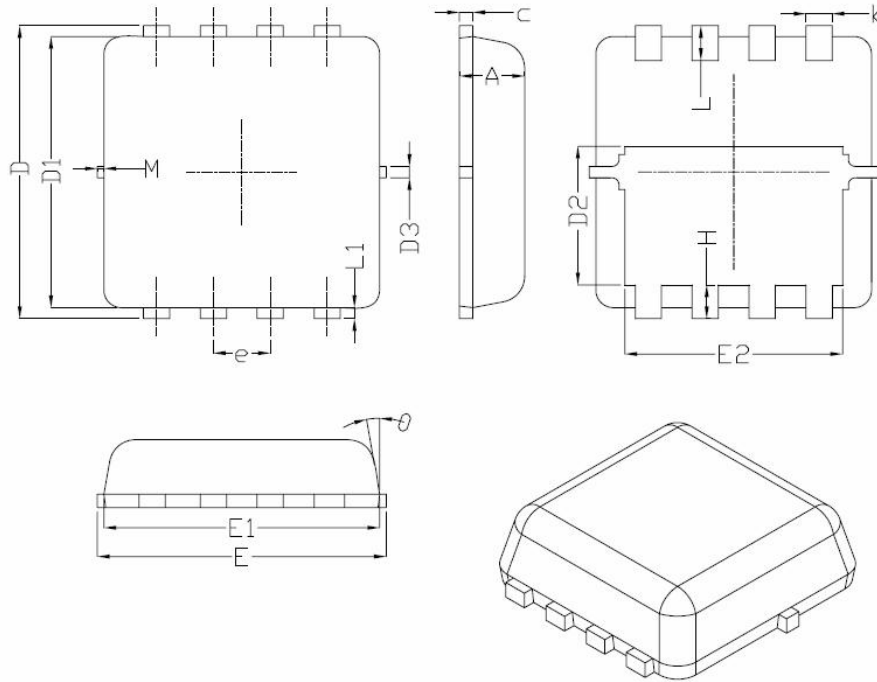


Fig 12. Gate Charge Waveform

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°

REEL SPECIFICATION

P/N	PKG	QTY
AON3419-MS	DFN3X3-8L	5000

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