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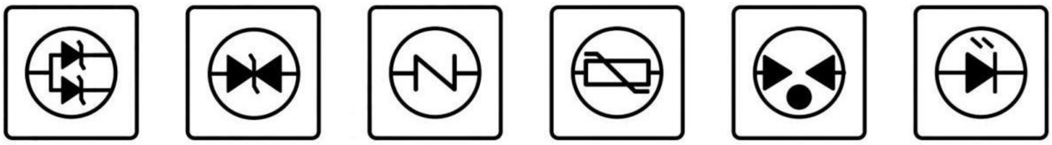


ESD TVS TSS MOV GDT PLED

AON6362-MS

Product specification

Description

The AON6362-MS uses advanced trench technology to provide excellent RDS(ON) , low gate charge and operation with gate voltages as low as 4.5V. This device is suitable for use as a Battery protection or in other Switching application.

Features

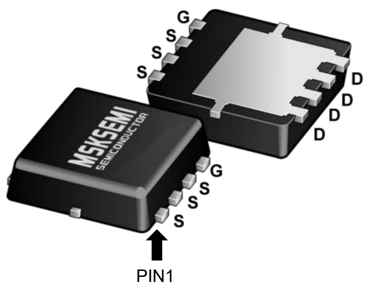
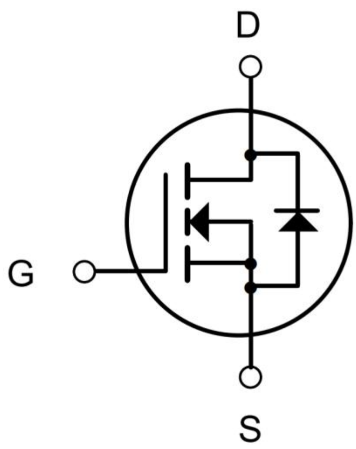
V_{DS} = 30V I_D =70A

$R_{DS(ON)}$ < 7mΩ V_{GS}=10V

Application

- Battery protection
- Load switch
- Uninterruptible power supply

Reference News

PACKAGE OUTLINE	N-Channel MOSFET	Marking
 DFN5X6-8L		

Absolute Maximum Ratings (TC=25℃unless otherwise noted)

Symbol	Parameter	Rating	Units
V_{DS}	Drain- Source Voltage	30	V
V_{GS}	Gate- Source Voltage	±20	V
I_D @T_C=25˚C	Continuous Drain Current, V_{GS} @ 10V [1]	70	A
I_D @T_C=100˚C	Continuous Drain Current, V_{GS} @ 10V [1]	40	A
I_D @T_A=25˚C	Continuous Drain Current, V_{GS} @ 10V [1]	30	A
I_D @T_A=70˚C	Continuous Drain Current, V_{GS} @ 10V [1]	18	A
I_{DM}	Pulsed Drain Current[2]	140	A
EAS	Single Pulse Avalanche Energy[3]	115.2	mJ
I_{AS}	Avalanche Current	48	A
P_D@T_C=25˚C	Total Power Dissipation[4]	59	W
P_D@T_A=25˚C	Total Power Dissipation[4]	2	W
T_{STG}	Storage Temperature Range	-55 to 150	˚C
T_J	Operating Junction Temperature Range	-55 to 150	˚C
$R_{\theta JA}$	Thermal Resistance Junction- Ambient [1]	62	˚C/ W
$R_{\theta JC}$	Thermal Resistance Junction- Case[1]	2.1	˚C/ W

Electrical Characteristics (TC=25°C Unless Otherwise Noted)

Symbol	Parameter	Conditions	Min.	Typ.	Max.	Unit
BV_{DSS}	Drain-Source Breakdown Voltage	V_{GS}=0V , I_D=250uA	30	---	---	V
$\triangle BV_{DSS}/\triangle T_J$	BVDSS Temperature Coefficient	Reference to 25˚C , I_D=1mA	---	0.028	---	V/˚C
$R_{DS(ON)}$	Static Drain-Source On-Resistance[2]	V_{GS}=10V , I_D=30A	---	5.7	7	mΩ
		V_{GS}=4.5V , I_D=15A	---	11	13	mΩ
$V_{GS(th)}$	Gate Threshold Voltage	V_{GS}=V_{DS} , I_D =250uA	1.2	---	2.5	V
$\triangle V_{GS(th)}$	$V_{GS(th)}$ Temperature Coefficient		---	-6.16	---	Mv/˚C
I_{DSS}	Drain-Source Leakage Current	V_{DS}=24V , V_{GS}=0V , T_J =25˚C	---	---	1	uA
		V_{DS}=24V , V_{GS}=0V , T_J =55˚C	---	---	5	uA
I_{GSS}	Gate-Source Leakage Current	V_{GS}= ±20V , V_{DS}=0V	---	---	± 100	nA
gfs	Forward Transconductance	V_{DS}=5V , I_D=30A	---	43	---	S
R_g	Gate Resistance	V_{DS}=0V , V_{GS}=0V , f=1MHz	---	1.7	---	Ω
Q_g	Total Gate Charge (4.5V)	V_{DS}=15V , V_{GS}=4.5V , I_D=15A	---	20	---	nC
Q_{gs}	Gate-Source Charge		---	7.6	---	nC
Q_{gd}	Gate-Drain Charge		---	7.2	---	nC
$T_{d(on)}$	Turn-On Delay Time	V_{DD}=15V , V_{GS}=10V , R_G=3.3 I_D=15A	---	7.8	---	ns
T_r	Rise Time		---	15	---	ns
$T_{d(off)}$	Turn-Off Delay Time		---	37.3	---	ns
T_f	Fall Time		---	10.6	---	ns
C_{iss}	Input Capacitance	V_{DS}=15V , V_{GS}=0V , f=1MHz	---	2295	---	pF
C_{oss}	Output Capacitance		---	267	---	pF
C_{rss}	Reverse Transfer Capacitance		---	210	---	pF
I_S	Continuous Source Current[1,5]	V_G=V_D=0V , Force Current	---	---	81	A
I_{SM}	Pulsed Source Current[2,5]		---	---	160	A
V_{SD}	Diode Forward Voltage[2]	V_{GS}=0V , I_S=1A , T_J =25˚C	---	---	1	V
t_{rr}	Reverse Recovery Time	I_F=30A , dI/dt=100A/µs ,T_J =25 ˚C	---	14	---	nS
Q_{rr}	Reverse Recovery Charge		---	5	---	nC

Note :

1.The data tested by surface mounted on a 1 inch^2 FR-4 board with 2OZ copper.

2.The data tested by pulsed , pulse width ≦ 300us , duty cycle ≦ 2%

3.The EAS data shows Max. rating . The test condition is V_{DD}=25V,V_{GS}=10V,L=0. 1mH,I_{AS}=48A

4.The power dissipation is limited by 150C junction temperature

5.The data is theoretically the same as I_D and I_{DM} , in real applications , should be limited by total power dissipation.

Typical Characteristics

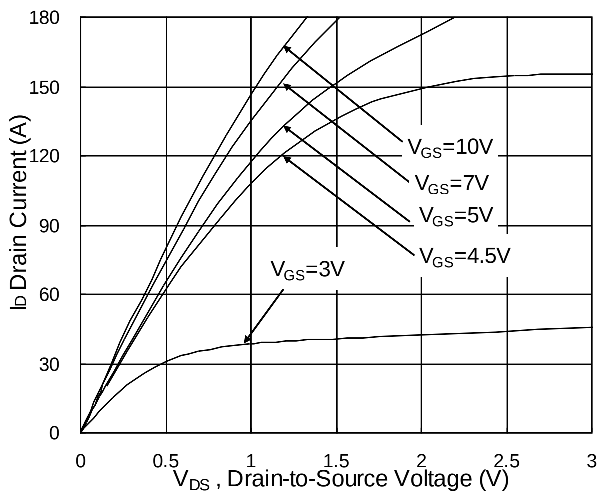


Fig.1 Typical Output Characteristics

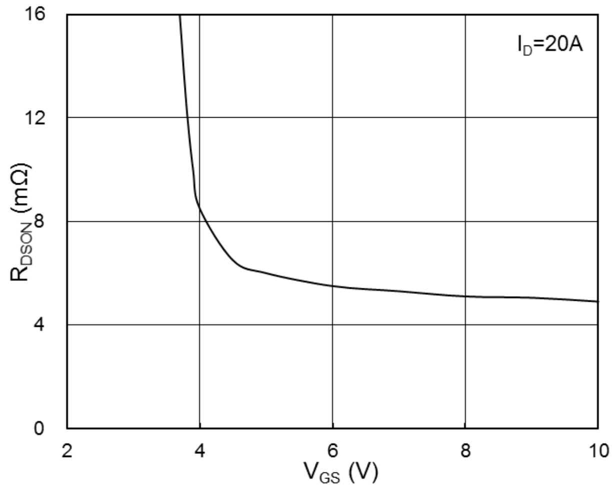


Fig.2 On-Resistance vs. G-S Voltage

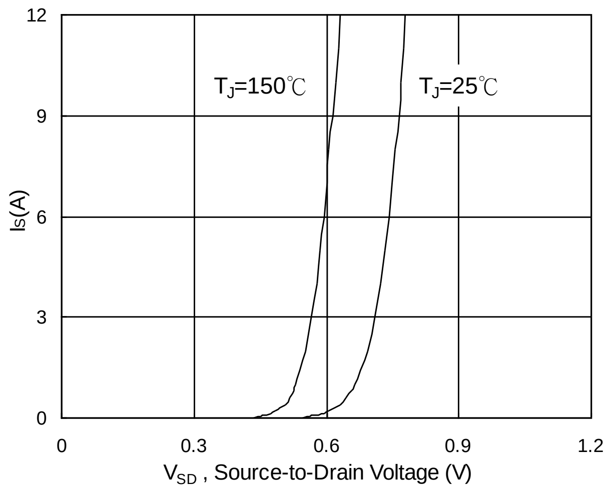


Fig.3 Forward Characteristics of Reverse

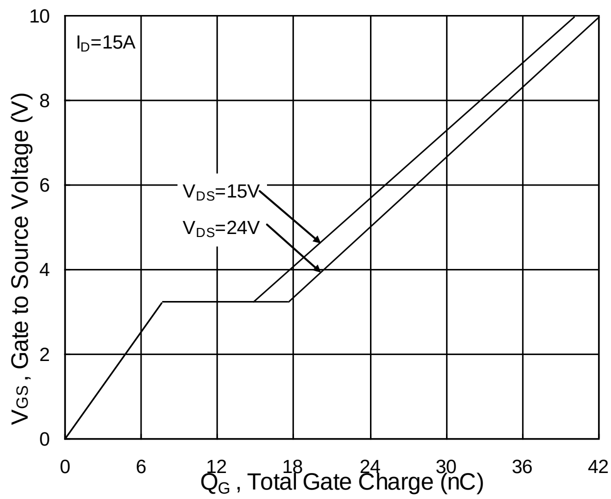


Fig.4 Gate-Charge Characteristics

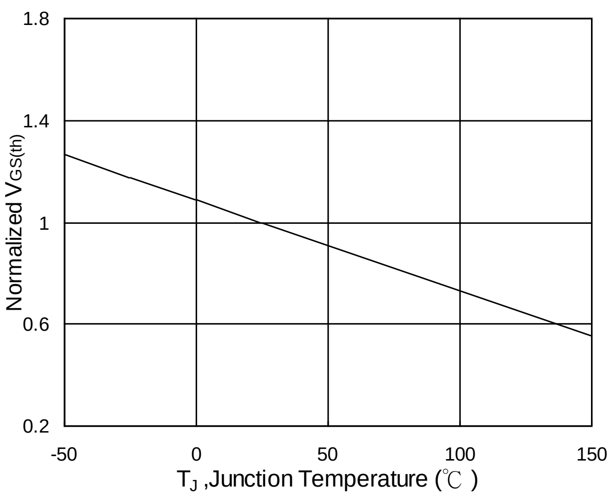


Fig.5 Normalized $V_{GS(th)}$ vs. T_J

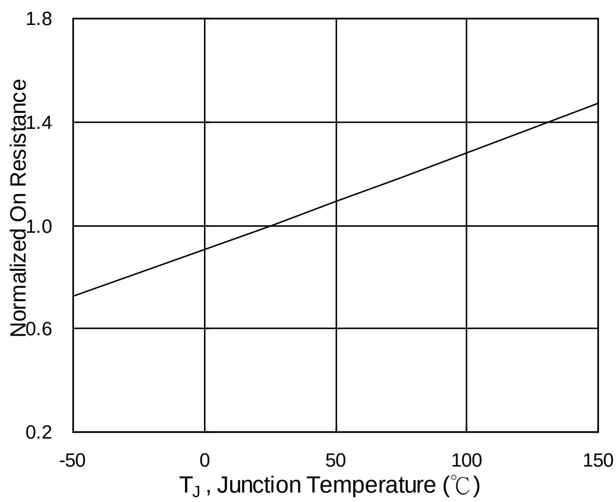


Fig.6 Normalized R_{DSON} vs. T_J

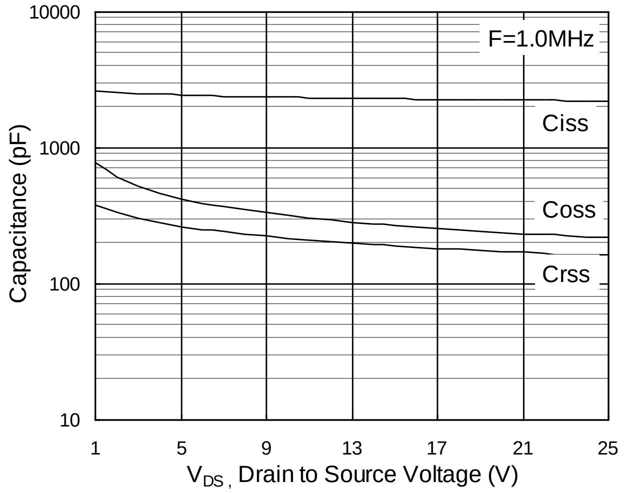


Fig.7 Capacitance

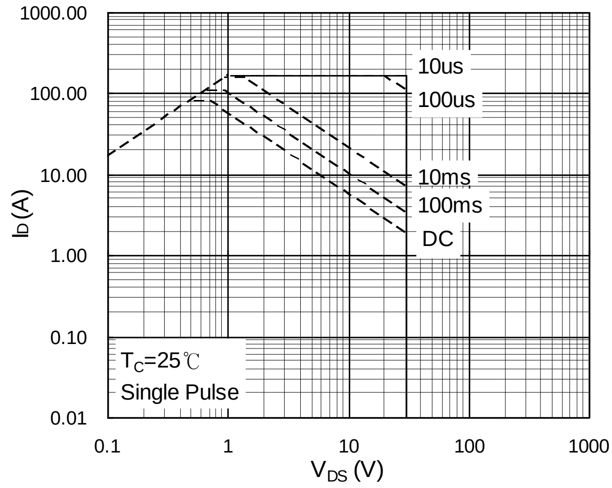


Fig.8 Safe Operating Area

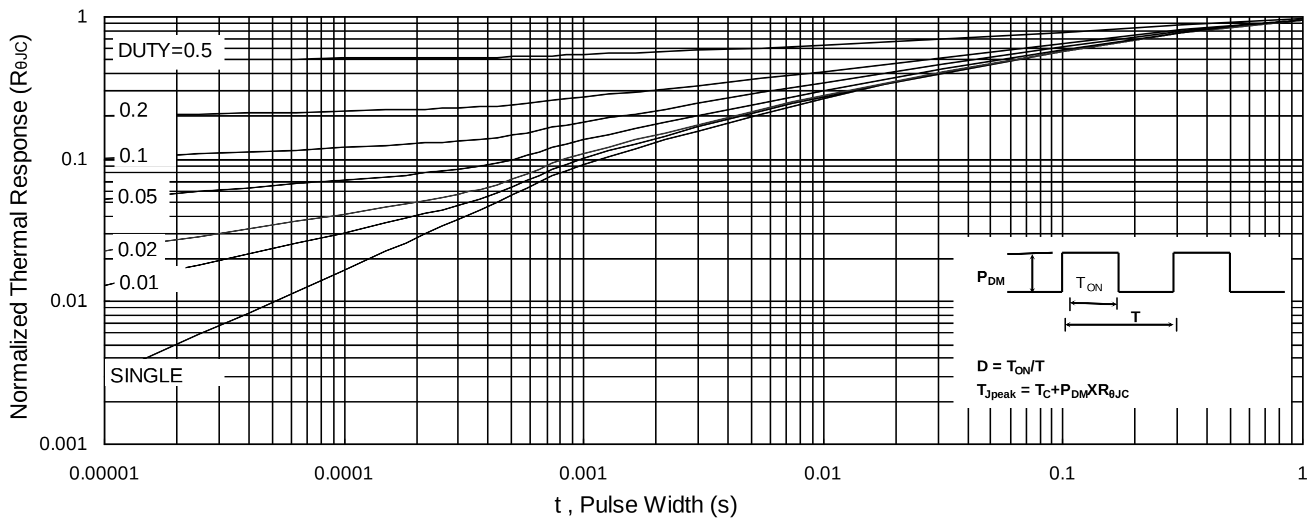


Fig.9 Normalized Maximum Transient Thermal Impedance

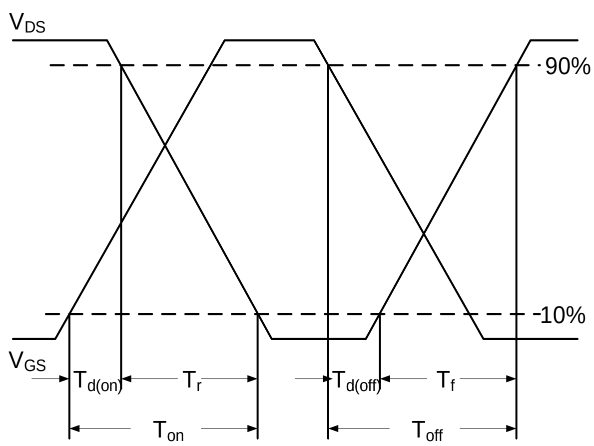


Fig.10 Switching Time Waveform

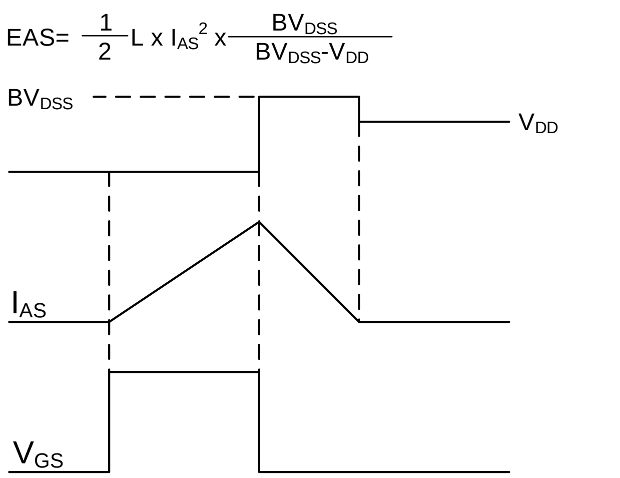
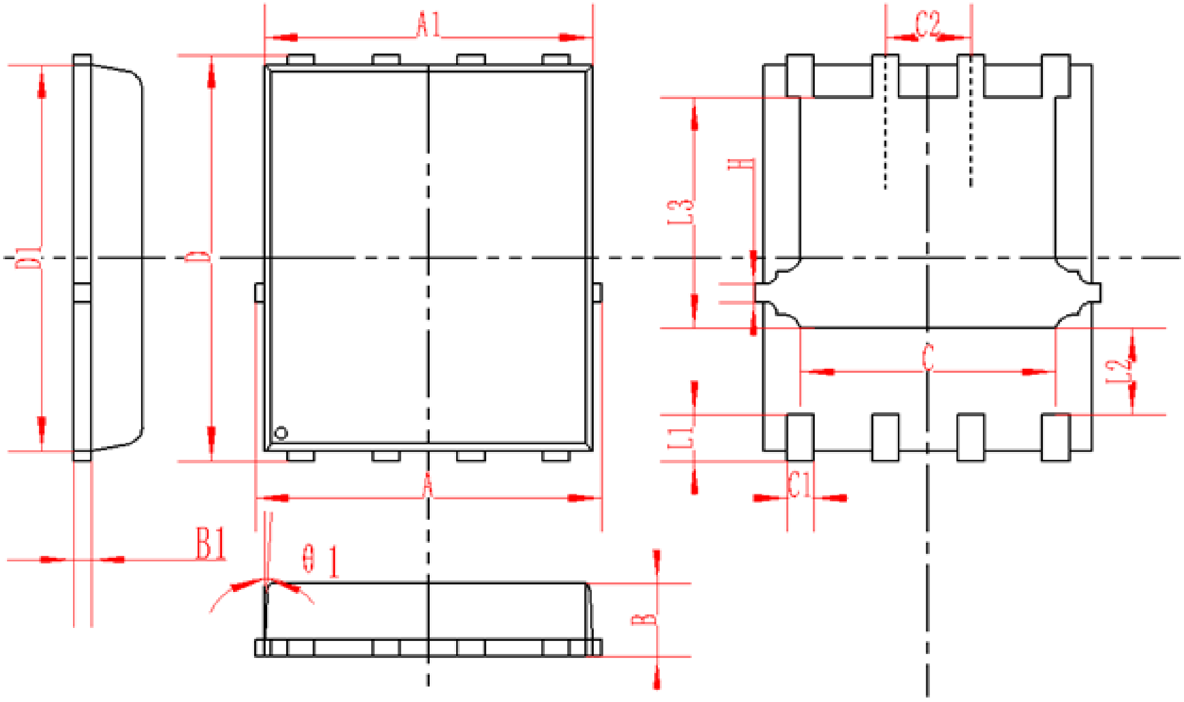


Fig.11 Unclamped Inductive Switching Waveform

DFN5X6-8L Package Information



SYMBOL	MM			INCH		
	MIN	NOM	MAX	MIN	NOM	MAX
A	4.95	5	5.05	0.195	0.197	0.199
A1	4.82	4.9	4.98	0.190	0.193	0.196
D	5.98	6	6.02	0.235	0.236	0.237
D1	5.67	5.75	5.83	0.223	0.226	0.230
B	0.9	0.95	1	0.035	0.037	0.039
B1	0.254REF			0.010REF		
C	3.95	4	4.05	0.156	0.157	0.159
C1	0.35	0.4	0.45	0.014	0.016	0.018
C2	1.27TYP			0.5TYP		
θ1	8。	10。	12。	8。	10。	12。
L1	0.63	0.64	0.65	0.025	0.025	0.026
L2	1.2	1.3	1.4	0.047	0.051	0.055
L3	3.415	3.42	3.425	0.134	0.135	0.135
H	0.24	0.25	0.26	0.009	0.010	0.010

REEL SPECIFICATION

P/N	PKG	QTY
AON6362-MS	DFN5X6-8L	5000

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