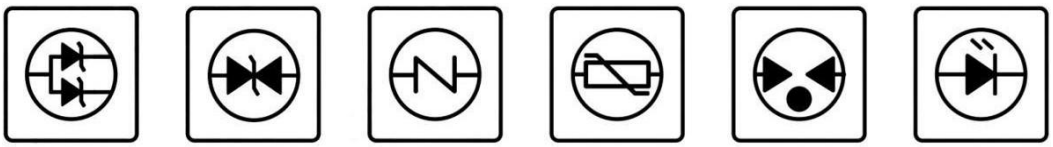
MSKSEMI 美森科
SEMICONDUCTOR



AON6566-MS

Product specification

Description

The AON6566-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

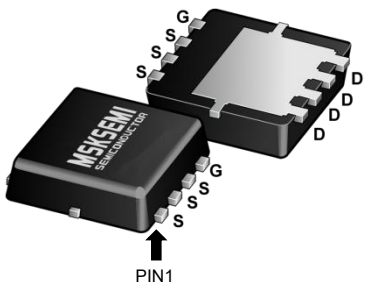
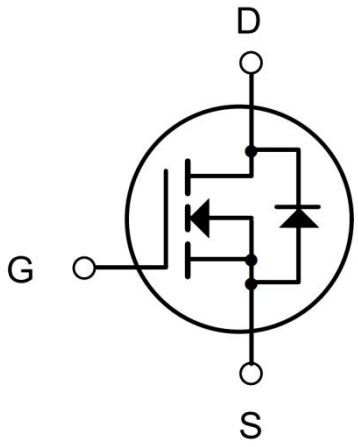
V_{DS} = 30V I_D =80A

$R_{DS(ON)}$ < 6mΩ V_{GS}=10V

Application

- Battery protection
- Load switch
- Uninterruptible power supply

Reference News

PACKAGE OUTLINE	N-Channel MOSFET	Marking
 DFN5X6-8L		

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

Symbol	Parameter	Rating	Units
V_{DS}	Drain- Source Voltage	40	V
V_{GS}	Gate- Source Voltage	±20	V
I_D @T_C=25℃	Continuous Drain Current, V_{GS} @ 10V [1]	50	A
I_D @T_C=70℃	Continuous Drain Current, V_{GS} @ 10V [1]	45	A
I_{DM}	Pulsed Drain Current[2]	280	A
EAS	Single Pulse Avalanche Energy[3]	56	mJ
T_{STG}	Storage Temperature Range	-55 to 175	℃
T_J	Operating Junction Temperature Range	-55 to 175	℃
$R_{\theta JA}$	Thermal Resistance Junction-Ambient [1]	30	℃/W

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

Symbol	Parameter	Condition	Min.	Typ.	Max.	Unit
Static Electrical Characteristics @ T_j=25°C (unless otherwise stated)						
$V_{(BR)DSS}$	Drain- Source Breakdown Voltage	V_{GS}=0V I_D=250μA	30	--	--	V
I_{DSS}	Zero Gate Voltage Drain Current	V_{DS}=30V, V_{GS}=0V	--	--	0.1	μA
	Zero Gate Voltage Drain Current(T_j=125℃)	V_{DS}=30V, V_{GS}=0V	--	--	100	μA
I_{GSS}	Gate- Body Leakage Current	V_{GS}=±20V, V_{DS}=0V	--	--	±100	nA
$V_{GS(TH)}$	Gate Threshold Voltage	V_{DS}=V_{GS}, I_D=250μA	1.0	1.7	2.5	V
$R_{DS(ON)}$	Drain- Source On- State Resistance③	V_{GS}=10V, I_D=20A	--	4.7	6	mΩ
$R_{DS(ON)}$	Drain- Source On- State Resistance③	V_{GS}=4.5V, I_D=16A	--	5.4	8	mΩ
Dynamic Electrical Characteristics @ T_j = 25°C (unless otherwise stated)						
C_{iss}	Input Capacitance	V_{DS}=15V, V_{GS}=0 V, f=1MHz	--	1930	--	pF
C_{oss}	Output Capacitance		--	310	--	pF
C_{rss}	Reverse Transfer Capacitance		--	260	--	pF
R_g	Gate Resistance	f=1MHz	--	0.85	--	
Q_g	Total Gate Charge	V_{DS}=15V, I_D=20A, V_{GS}=10V	--	38	--	nC
Q_{gs}	Gate- Source Charge		--	5.1	--	nC
Q_{gd}	Gate- Drain Charge		--	12	--	nC
Switching Characteristics						
$t_{d(on)}$	Turn- on Delay Time	V_{DD}=15V, I_D=20A, R_G=3, V_{GS}=10V	--	8.5	--	nS
t_r	Turn- on Rise Time		--	9	--	nS
$t_{d(off)}$	Turn- Off Delay Time		--	31	--	nS
t_f	Turn- Off Fall Time		--	9	--	nS
Source- Drain Diode Characteristics@ T_j = 25°C (unless otherwise stated)						
V_{SD}	Forward on voltage	I_{SD}=20A, V_{GS}=0V	--	0.8	1.2	V
t_{rr}	Reverse Recovery Time	T_j=25℃, I_{sd}=20A, V_{GS}=0V di/dt=500A/μs	--	16	--	nS
Q_{rr}	Reverse Recovery Charge			42		nC

NOTE:

1.Repetitive rating; pulse width limited by max. junction temperature.

2.Limited by T_{Jmax}, starting T_J = 25°C, L = 0.5mH, R_G = 25 , I_{AS} = 15A, V_{GS} =10V. Part not recommended for use above this value

3.Pulse width ≤ 300μs; duty cycle≤ 2%.

Typical Electrical and Thermal Characteristics

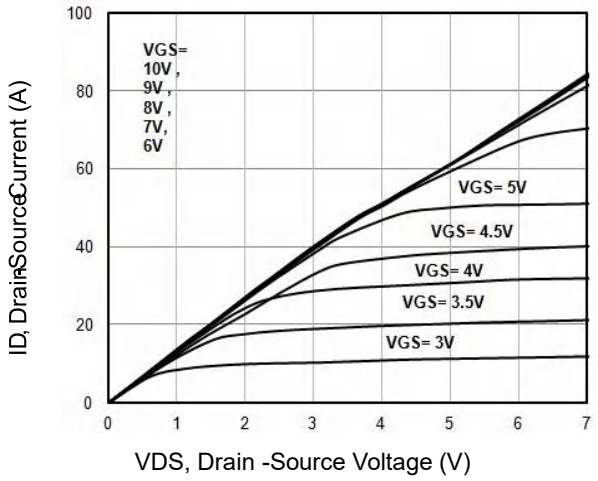


Fig1. Typical Output Characteristics

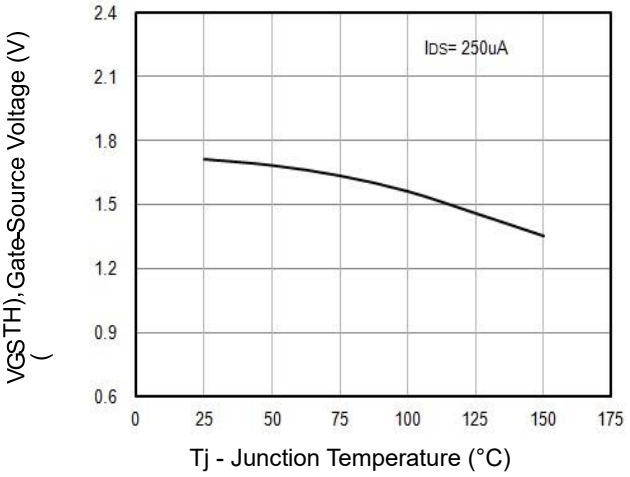


Fig2. $V_{GS(TH)}$ Gate -Source Voltage Vs.Tj

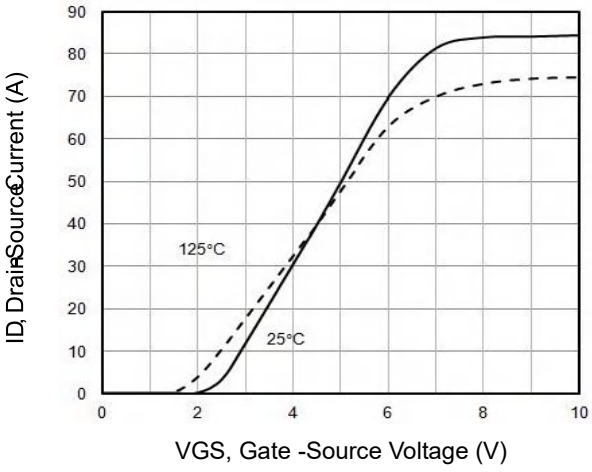


Fig3. Typical Transfer Characteristics

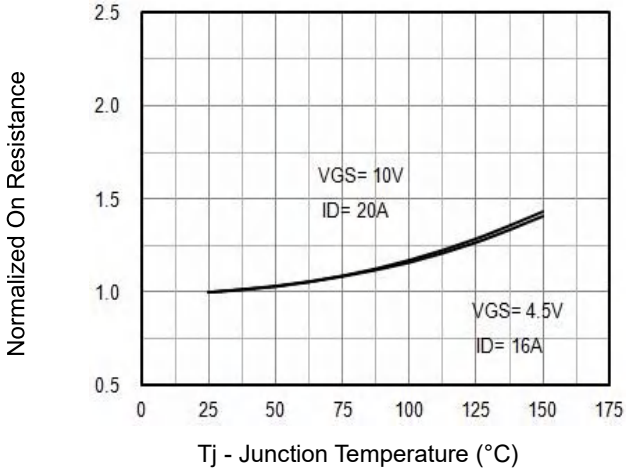


Fig4. Normalized On-Resistance Vs. Tj

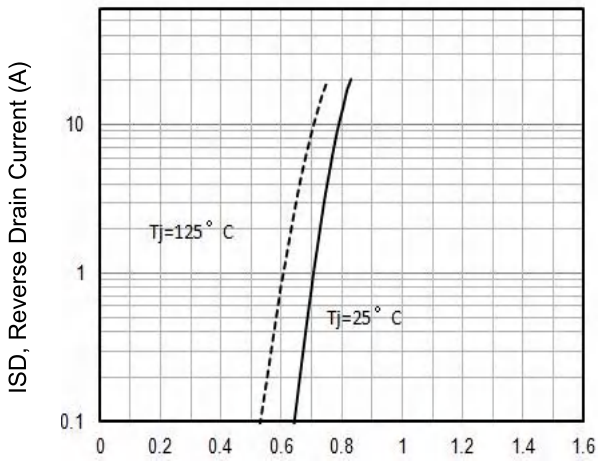


Fig6. Maximum Safe Operating Area Voltage

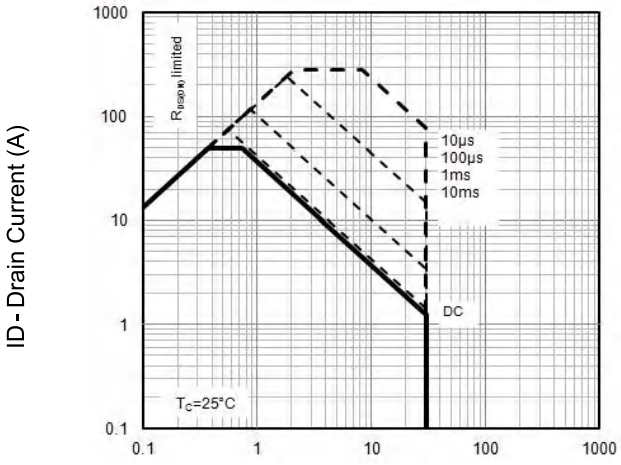


Fig5. Typical Source-Drain Diode Forward

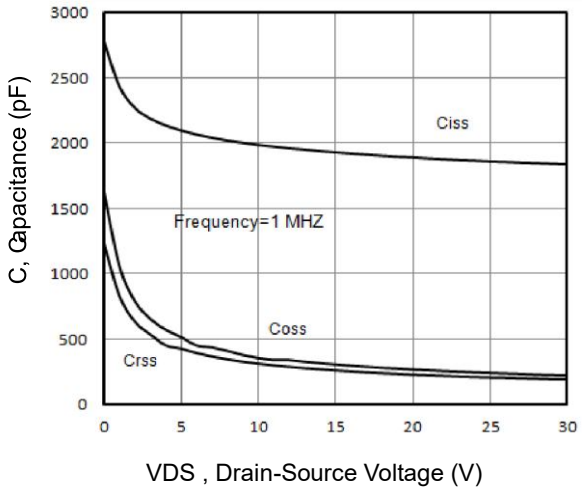


Fig7. Typical Capacitance Vs.Drain-Source Voltage

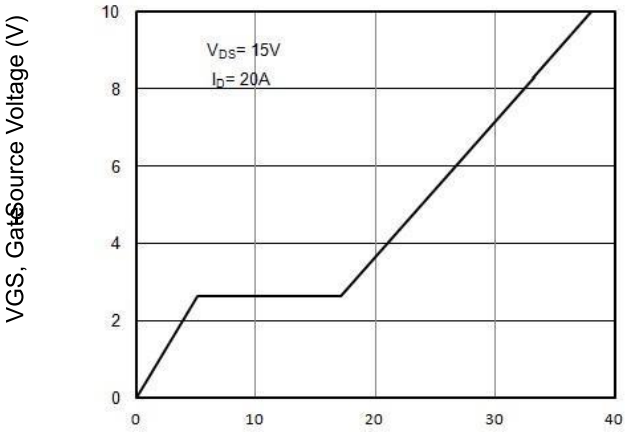


Fig8. Typical Gate Charge Vs.Gate-Source Voltage

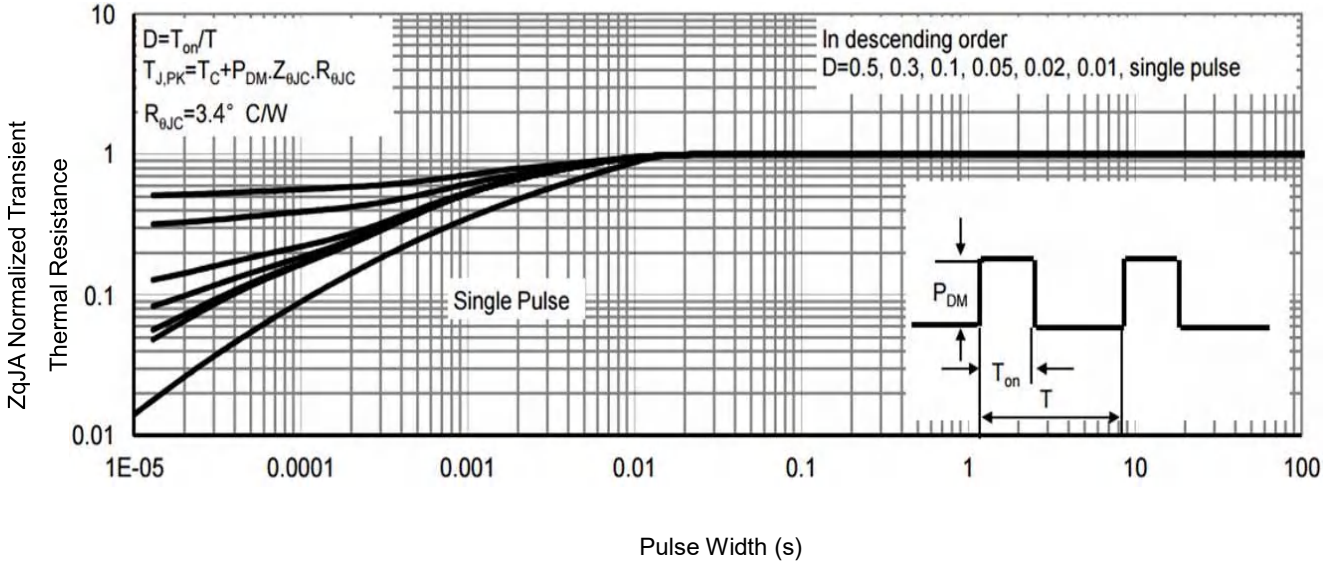


Fig9. Normalized Maximum Transient Thermal Impedance

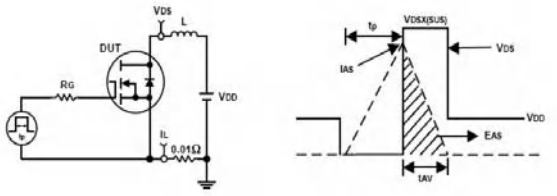


Fig10. Unclamped Inductive Test Circuit and waveforms

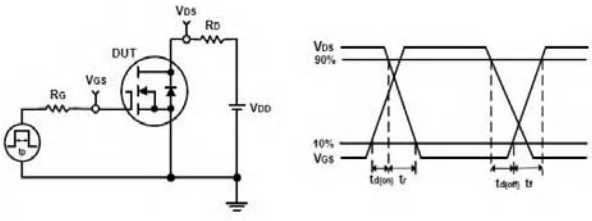
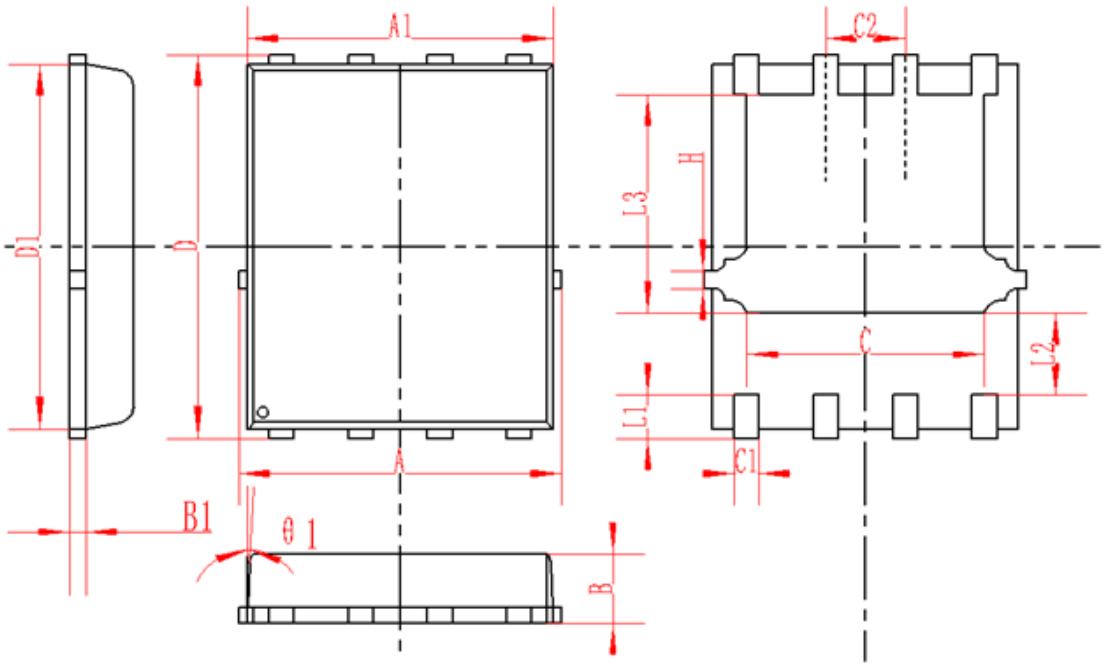


Fig11. Switching Time Test Circuit and waveforms

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
AON6566-MS	DFN5X6-8L	5000

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