



ESD



TVS



TSS



MOV



GDT



PLED

AO6800-MS

Product specification

Features

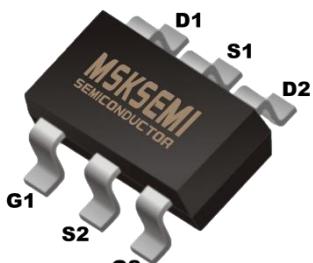
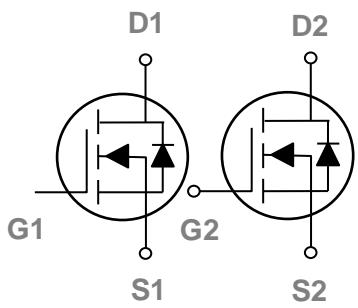
- 30V, 4.0A, RDS(ON) =30mΩ @VGS = 10V
- Improved dv/dt capability
- Fast switching
- Green Device Available

Applications

- MB / VGA / Vcore
- POL Applications
- SMPS 2nd SR

BVDSS	RDS(ON)	ID
30V	30mΩ	4.0A

Reference News

PACKAGE OUTLINE	PIN Configuration	Marking
 SOT-23-6L		

Absolute Maximum Ratings T_c=25°C unless otherwise noted

Symbol	Parameter	Rating	Units
V _{DS}	Drain-Source Voltage	30	V
V _{GS}	Gate-Source Voltage	±12	V
I _D	Drain Current - Continuous (T _A =25°C)	4.0	A
	Drain Current - Continuous (T _A =70°C)	3.0	A
I _{DM}	Drain Current - Pulsed ¹	20	A
P _D	Power Dissipation (T _A =25°C)	1.25	W
	Power Dissipation - Derate above 25°C	0.01	W/°C
T _{STG}	Storage Temperature Range	-55 to 150	°C
T _J	Operating Junction Temperature Range	-55 to 125	°C

Thermal Characteristics

Symbol	Parameter	Typ.	Max.	Unit
R _{θJA}	Thermal Resistance Junction to ambient	---	100	°C/W

N-CH Electrical Characteristics (T_J=25 °C,unless otherwise)
Off Characteristics

Symbol	Parameter	Conditions	Min.	Typ.	Max.	Unit
BV _{DSS}	Drain-Source Breakdown Voltage	V _{GS} =0V , I _D =250uA	30	---	---	V
△BV _{DSS} /△T _J	BV _{DSS} Temperature Coefficient	Reference to 25°C , I _D =1mA	---	0.02	---	V/°C
I _{DSS}	Drain-Source Leakage Current	V _{DS} =30V , V _{GS} =0V , T _J =25°C	---	---	1	uA
		V _{DS} =24V , V _{GS} =0V , T _J =125°C	---	---	10	uA
I _{GSS}	Gate-Source Leakage Current	V _{GS} =±12V , V _{DS} =0V	---	---	±100	nA

On Characteristics

R _{DSON}	Static Drain-Source On-Resistance ³	V _{GS} =10V , I _D =3A	---	30	45	mΩ
		V _{GS} =4.5V , I _D =2A	---	40	55	mΩ
V _{GS(th)}	Gate Threshold Voltage	V _{GS} =V _{DS} , I _D =250uA	0.5	1.0	1.5	V
△V _{GS(th)}	V _{GS(th)} Temperature Coefficient		---	-3.2	---	mV/°C
g _f	Forward Transconductance	V _{DS} =10V , I _D =3A	---	4	---	S

Dynamic and switching Characteristics

Q _g	Total Gate Charge ^{2,3}	V _{DS} =24V , V _{GS} =10V , I _D =3A	---	5.1	---	nC
Q _{gs}	Gate-Source Charge ^{2,3}		---	0.4	---	
Q _{gd}	Gate-Drain Charge ^{2,3}		---	2.2	---	
T _{d(on)}	Turn-On Delay Time ^{2,3}	V _{DD} =15V , V _{GS} =10V , R _G =6Ω I _D =1A	---	2.6	---	ns
T _r	Rise Time ^{2,3}		---	8.8	---	
T _{d(off)}	Turn-Off Delay Time ^{2,3}		---	18.4	---	
T _f	Fall Time ^{2,3}		---	5.1	---	
C _{iss}	Input Capacitance		---	333	---	pF
C _{oss}	Output Capacitance	V _{DS} =25V , V _{GS} =0V , F=1MHz	---	52	---	
C _{rss}	Reverse Transfer Capacitance		---	43	---	
R _g	Gate resistance	V _{GS} =0V, V _{DS} =0V, f=1MHz	---	0.95	---	Ω

Drain-Source Diode Characteristics and Maximum Ratings

Symbol	Parameter	Conditions	Min.	Typ.	Max.	Unit
I _s	Continuous Source Current	V _G =V _D =0V , Force Current	---	---	4	A
I _{SM}	Pulsed Source Current ³		---	---	8	A
V _{SD}	Diode Forward Voltage ³	V _{GS} =0V , I _s =1A , T _J =25°C	---	---	1.3	V

Note :

1. Repetitive Rating : Pulsed width limited by maximum junction temperature.
2. The data tested by pulsed , pulse width ≤ 300us , duty cycle ≤ 2%.
3. Essentially independent of operating temperature.

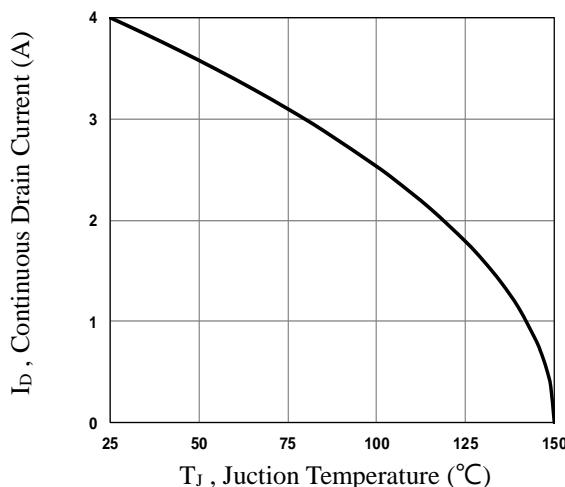


Fig.1 Continuous Drain Current vs. T_J

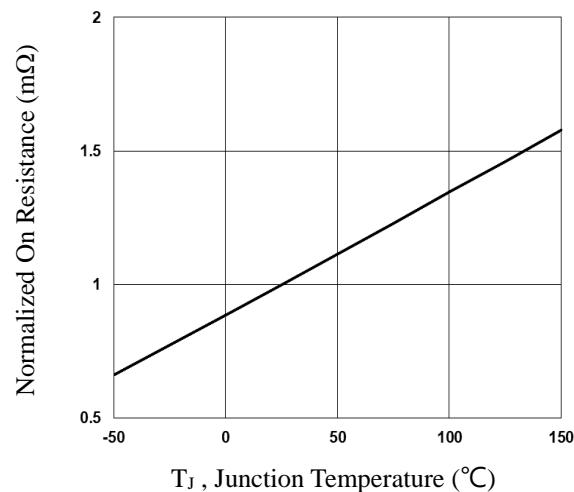


Fig.2 Normalized RD_{SON} vs. T_J

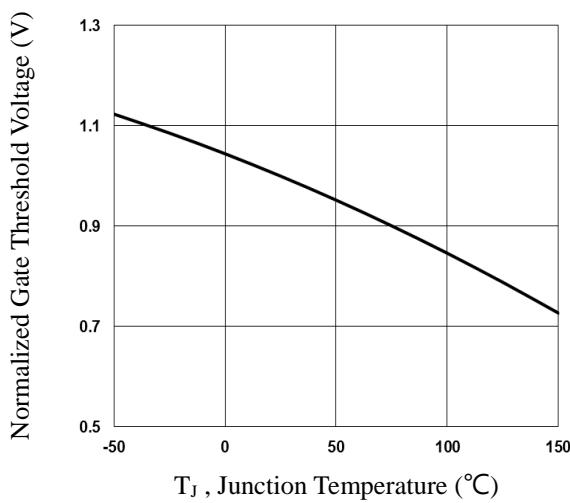


Fig.3 Normalized V_{th} vs. T_J

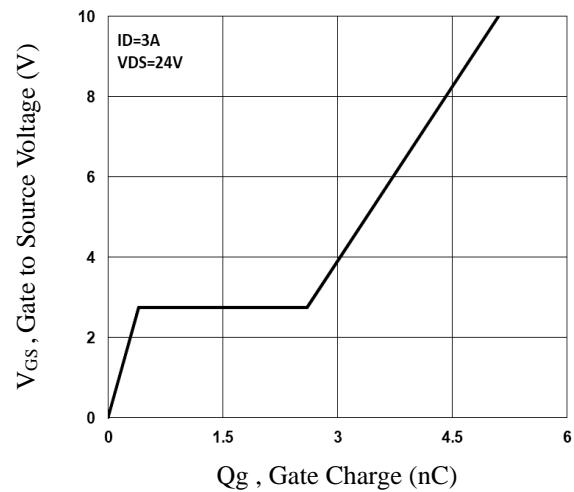


Fig.4 Gate Charge Waveform

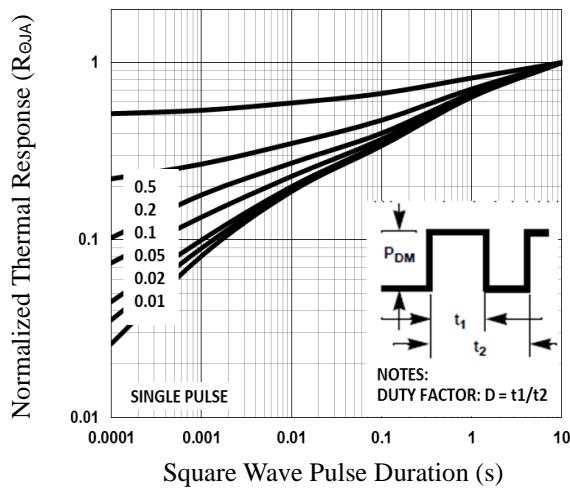


Fig.5 Normalized Transient Response

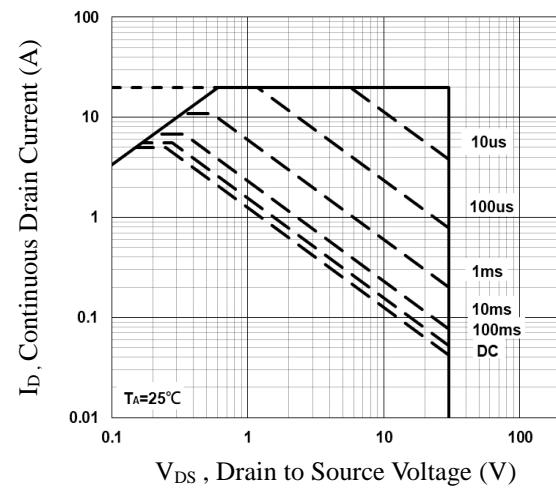
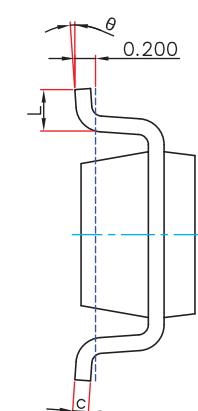
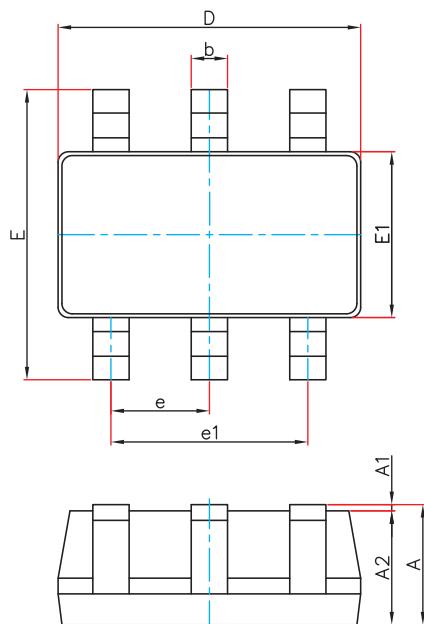


Fig.6 Maximum Safe Operation Area

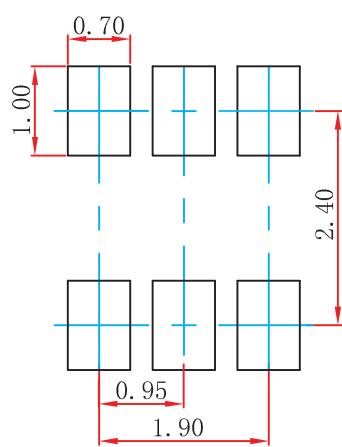
SOT-23-6L Package Outline Dimensions



Symbol	Dimensions In Millimeters		Dimensions In Inches	
	Min.	Max.	Min.	Max.
A	1.050	1.250	0.041	0.049
A1	0.000	0.100	0.000	0.004
A2	1.050	1.150	0.041	0.045
b	0.300	0.500	0.012	0.020
c	0.100	0.200	0.004	0.008
D	2.820	3.020	0.111	0.119
E1	1.500	1.700	0.059	0.067
E	2.650	2.950	0.104	0.116
e	0.950(BSC)		0.037(BSC)	
e1	1.800	2.000	0.071	0.079
L	0.300	0.600	0.012	0.024
θ	0°	8°	0°	8°

M 2019 P A

SOT-23-6L Suggested Pad Layout



Note:

1. Controlling dimension: in millimeters.
2. General tolerance: $\pm 0.05\text{mm}$.
3. The pad layout is for reference purposes only.

REEL SPECIFICATION

P/N	PKG	QTY
AO6800-MS	SOT-23-6L	3000

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