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SEMICONDUCTOR



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PLED

AOD2606-MS

Product specification

Description

The AOD2606-MS use advanced VD MOST technology to provide low RDS(ON), low gate charge, fast switching.

This device is specially designed to get better ruggedness and suitable to use in Low RDS(on) & FOM Extremely low switching loss Excellent stability and uniformity or Invertors.

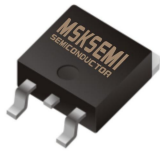
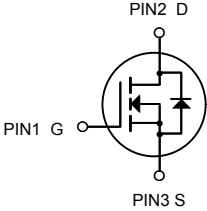

General Features

- $V_{DS} = 60V$ $I_D = 80A$
- $R_{DS(ON)} < 8m\Omega @ V_{GS}=10V$
- $R_{DS(ON)} < 12m\Omega @ V_{GS}=4.5V$

Application

- Consumer electronic power supply Motor control
- Synchronous-rectification Isolated DC
- Synchronous-rectification app

Reference News

PACKAGE OUTLINE	N-Channel MOSFET	Marking
 TO-252		

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

Symbol	Parameter	Rating	Units
V_{DS}	Drain-Source Voltage	60	V
V_{GS}	Gate-Source Voltage	+20	V
$I_D @ T_C=25^\circ C$	Drain Current, $V_{GS} @ 10V$	80	A
$I_D @ T_C=100^\circ C$	Drain Current, $V_{GS} @ 10V$	43	A
I_{DM}	Pulsed Drain Current ¹	272	A
$P_D @ T_C=25^\circ C$	Total Power Dissipation	104	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	1.2	°C/W
R_{thj-a}	Maximum Thermal Resistance, Junction-ambient (PCB mount) ³	62.5	°C/W

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

Symbol	Parameter	Test Conditions	Min.	Typ.	Max.	Units
BV _{DSS}	Drain-Source Breakdown Voltage	V _{GS} =0V, I _D =250μA	60	-	-	V
R _{DS(ON)}	Static Drain-Source On- Resistance ²	V _{GS} =10V, I _D =45A	-	6	10	mΩ
		V _{GS} =4.5V, I _D =30A	-	8.3	15	mΩ
V _{GS(th)}	Gate Threshold Voltage	V _{DS} =V _{GS} , I _D =250μA	1	1.4	3	V
g _{fs}	Forward Transconductance	V _{DS} =10V, I _D =30A	-	71	-	S
I _{DSS}	Drain-Source Leakage Current	V _{DS} =60V, V _{GS} =0V	-	-	10	μA
	Drain-Source Leakage Current (T _j =125°C)	V _{DS} =48V, V _{GS} =0V	-	-	250	μA
I _{GSS}	Gate-Source Leakage	V _{GS} =±20V, V _{DS} =0V	-	-	±100	nA
Q _g	Total Gate Charge	I _D =30A	-	33	45	nC
Q _{gs}	Gate-Source Charge	V _{DS} =48V	-	5	-	nC
Q _{gd}	Gate-Drain ("Miller") Charge	V _{GS} =4.5V	-	21	-	nC
t _{d(on)}	Turn-on Delay Time	V _{DS} =30V	-	10	-	ns
t _r	Rise Time	I _D =30A	-	43	-	ns
t _{d(off)}	Turn-off Delay Time	R _G =3.3Ω	-	47	-	ns
t _f	Fall Time	V _{GS} =10V	-	80	-	ns
C _{iss}	Input Capacitance		-	2680	3300	pF
C _{oss}	Output Capacitance	V _{GS} =0V	-	260	-	pF
C _{rss}	Reverse Transfer Capacitance	V _{DS} =25V f=1.0MHz	-	180	-	pF
V _{SD}	Forward On Voltage ²	I _S =45A, V _{GS} =0V	-	-	1.3	V
t _{rr}	Reverse Recovery Time	I _S =10A, V _{GS} =0V, di/dt=100A/μs	-	30	-	ns
Q _{rr}	Reverse Recovery Charge		-	18	-	nC

Typical Performance Characteristics

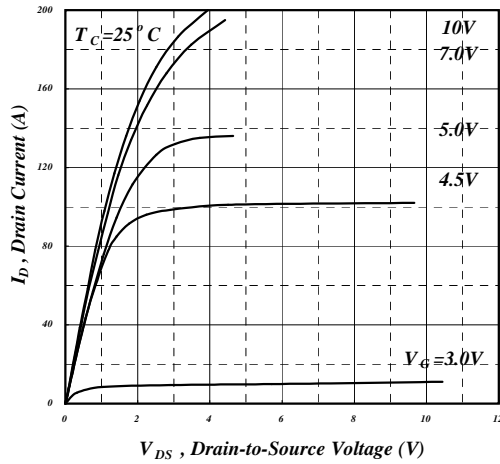


Fig 1. Typical Output Characteristics

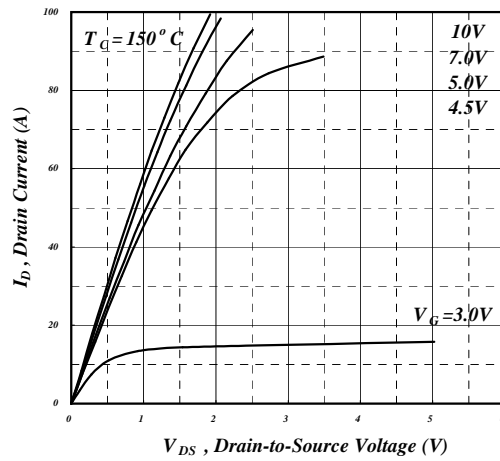


Fig 2. Typical Output Characteristics

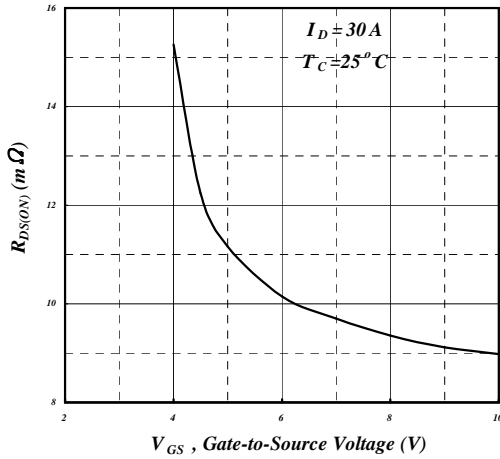


Fig 3. On-Resistance v.s. Gate Voltage

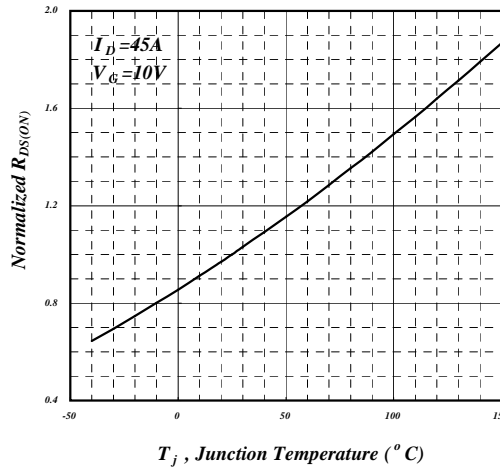


Fig 4. Normalized On-Resistance v.s. Junction Temperature

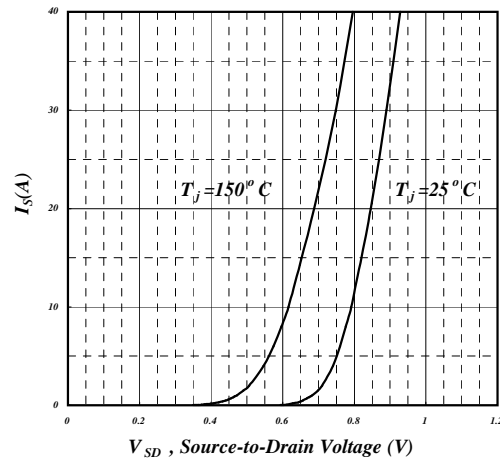


Fig 5. Forward Characteristic of Reverse Diode

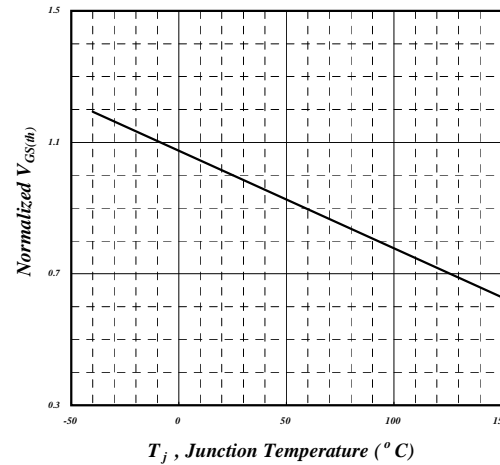


Fig 6. Gate Threshold Voltage v.s. Junction Temperature

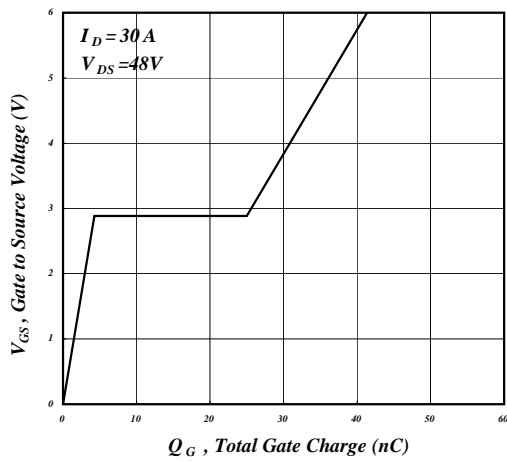


Fig 7. Gate Charge Characteristics

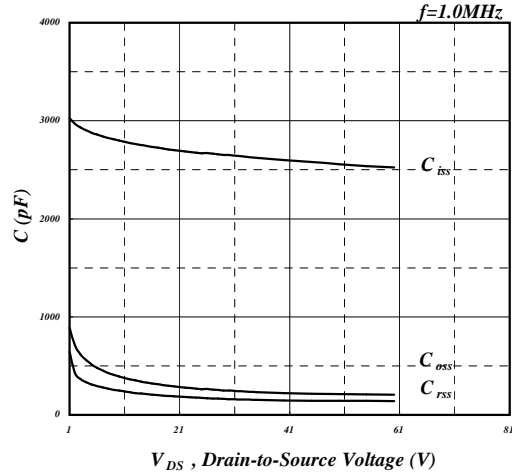


Fig 8. Typical Capacitance Characteristics

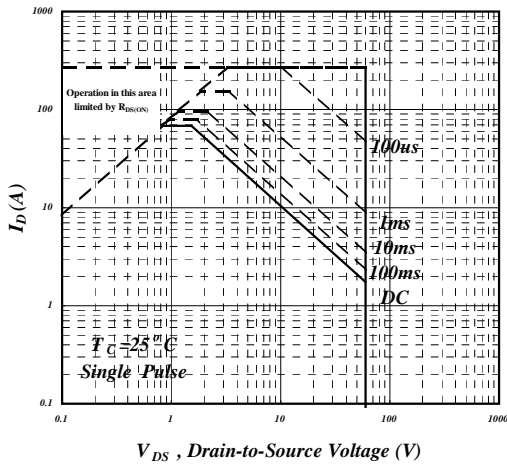


Fig 9. Maximum Safe Operating Area

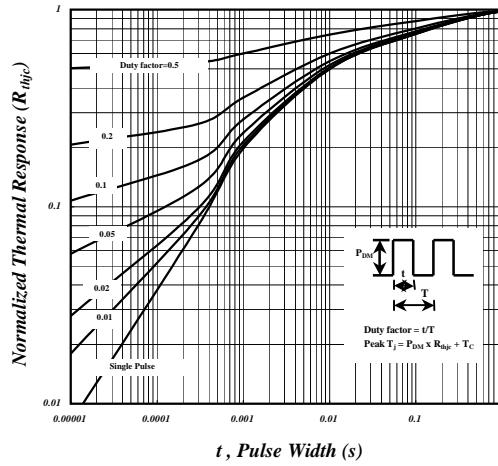


Fig 10. Effective Transient Thermal Impedance

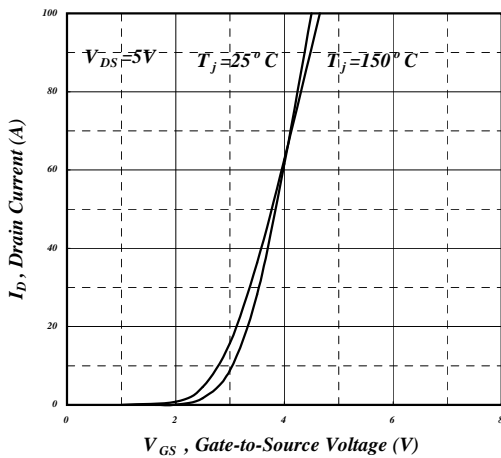


Fig 11. Transfer Characteristics

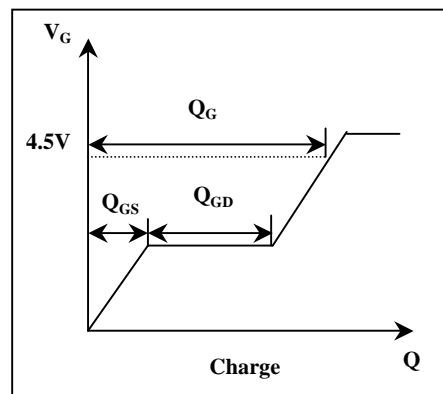
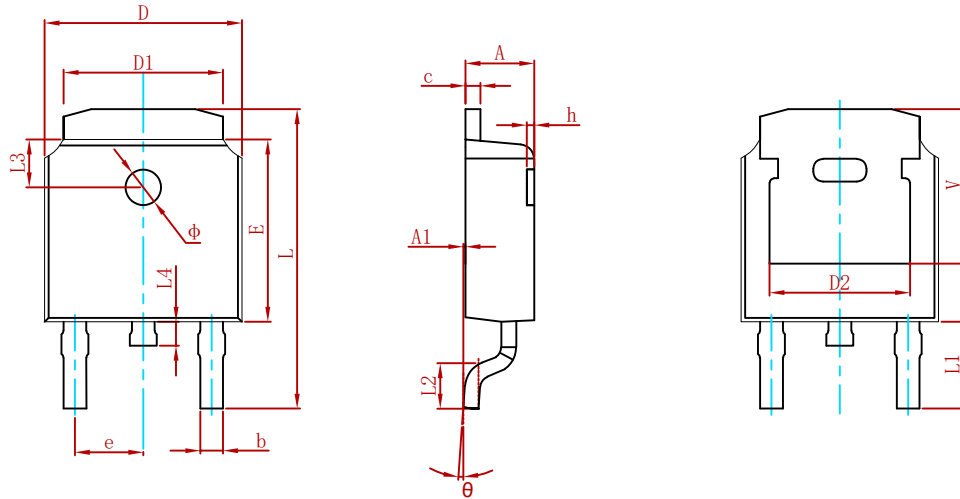


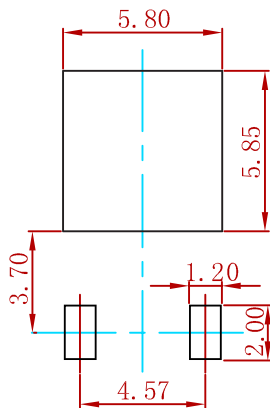
Fig 12. Gate Charge Waveform

PACKAGE MECHANICAL DATA



Symbol	Dimensions In Millimeters		Dimensions In Inches	
	Min.	Max.	Min.	Max.
A	2.200	2.400	0.087	0.094
A1	0.000	0.127	0.000	0.005
b	0.635	0.770	0.025	0.030
c	0.460	0.580	0.018	0.023
D	6.500	6.700	0.256	0.264
D1	5.100	5.460	0.201	0.215
D2	4.830 REF.		0.190 REF.	
E	6.000	6.200	0.236	0.244
e	2.186	2.386	0.086	0.094
L	9.712	10.312	0.382	0.406
L1	2.900 REF.		0.114 REF.	
L2	1.400	1.700	0.055	0.067
L3	1.600 REF.		0.063 REF.	
L4	0.600	1.000	0.024	0.039
φ	1.100	1.300	0.043	0.051
θ	0°	8°	0°	8°
h	0.000	0.300	0.000	0.012
V	5.250 REF.		0.207 REF.	

Suggested Pad Layout



- Note:
1. Controlling dimension: in millimeters.
 2. General tolerance: ± 0.05mm.
 3. The pad layout is for reference purposes only.

REEL SPECIFICATION

P/N	PKG	QTY
AOD2606-MS	TO-252	2500

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