

Features

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

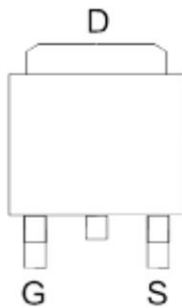
Application

- Power Management in Note book
- DC/DC Converter
- Load Switch
- LCD Display inverter

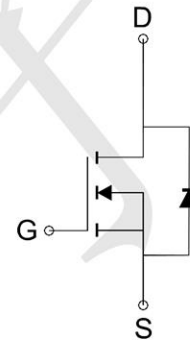
Package and Pin Configuration

(TO-252-3L)

Top View



Circuit diagram



N-Channel MOSFET

Marking:



Maximum Ratings (@ $T_A = 25^\circ C$ unless otherwise specified)

Parameter	Symbol	Value	Unit
Drain-to-Source Voltage	V_{DSS}	60	V
Gate-to-Source Voltage	V_{GSS}	± 20	V
Continuous Drain Current ($T_C = 25^\circ C$)	I_D	80	A
Continuous Drain Current ($T_C = 100^\circ C$)		52	A
Continuous Drain Current ($T_A = 25^\circ C$) ^{*1}		17	A
Continuous Drain Current ($T_A = 100^\circ C$) ^{*1}		12	A
Pulsed Drain Current ($t_p = 10\mu s, T_C = 25^\circ C$)	I_{DM}	320	A
Single Pulse Avalanche Energy ^{*3}	E_{AS}	280	mJ
Power Dissipation ($T_C = 25^\circ C$)	P_D	112	W
Operating Junction Temperature Range	T_J	-55 ~ +175	$^\circ C$
Storage Temperature Range	T_{STG}	-55 ~ +175	$^\circ C$

Thermal Characteristics

Parameter	Symbol	Min.	Typ.	Max.	Unit
Thermal Resistance Junction-to-Case	$R_{\theta JC}$	-	-	1.33	$^{\circ}C/W$
Thermal Resistance Junction-to-Air *1	$R_{\theta JA}$	-	-	30	$^{\circ}C/W$

Electrical Characteristics (@ $T_A = 25^{\circ}C$ unless otherwise specified)

Symbol	Parameter	Test Condition	Min.	Typ.	Max.	Unit
Static Characteristics						
V_{DSS}	Drain-Source Breakdown Voltage	$V_{GS} = 0V, I_D = 250\mu A$	60	-	-	V
I_{DSS}	Zero Gate Voltage Drain Current	$V_{DS} = 60V, V_{GS} = 0V$	-	-	1	μA
I_{GSS}	Gate-Body Leakage Current	$V_{GS} = \pm 20V, V_{DS} = 0V$	-	-	± 100	nA
On Characteristics						
$R_{DS(ON)}$	Drain-Source On-resistance *2	$V_{GS} = 10V, I_D = 30A$	-	5.5	8	m Ω
$V_{GS(th)}$	Gate Threshold Voltage	$V_{DS} = V_{GS}, I_D = 250\mu A$	2	3	4	V
Dynamic Characteristics						
C_{ISS}	Input Capacitance	$V_{GS} = 0V$	-	4570	-	pF
C_{OSS}	Output Capacitance	$V_{DS} = 25V$	-	302	-	
C_{RSS}	Reverse Transfer Capacitance	$f = 1.0MHz$	-	291	-	
Switching Characteristics						
$t_{d(ON)}$	Turn-on Delay Time *4	$V_{DD} = 30V, I_D = 30A$ $V_{GS} = 10V, R_G = 1.8\Omega$	-	9	-	ns
t_r	Turn-on Rise Time *4		-	7	-	
$t_{d(OFF)}$	Turn-Off Delay Time *4		-	40	-	
t_f	Turn-Off Fall Time *4		-	15	-	
Q_G	Total Gate-Charge	$V_{DD} = 30V$	-	80	-	nC
Q_{GS}	Gate to Source Charge	$V_{GS} = 10V$	-	18.2	-	
Q_{GD}	Gate to Drain (Miller) Charge	$I_D = 30A$	-	31	-	
Source-Drain Diode Characteristics						
V_{SD}	Diode Forward Voltage *2	$I_{SD} = 20A, V_{GS} = 0V, T_J = 25^{\circ}C$	-	-	1.0	V
t_{rr}	Reverse Recovery Time	$I_S = 30A, V_{GS} = 0V$	-	36.5	-	ns
Q_{rr}	Reverse Recovery Charge	$di/dt = 100A/\mu s$	-	39	-	nC

Ratings and Characteristics Curves (@ $T_A = 25^\circ\text{C}$ unless otherwise specified)

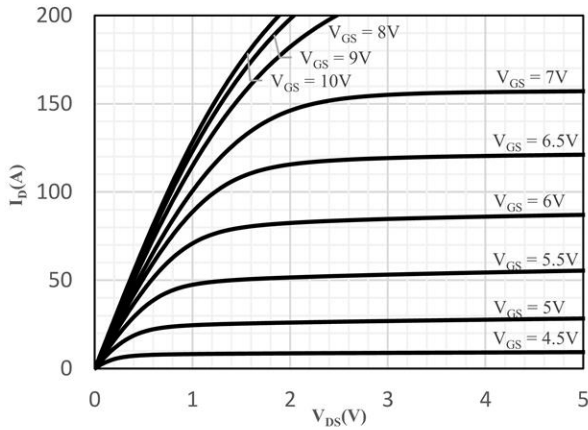


Fig 1 Typical Output Characteristics

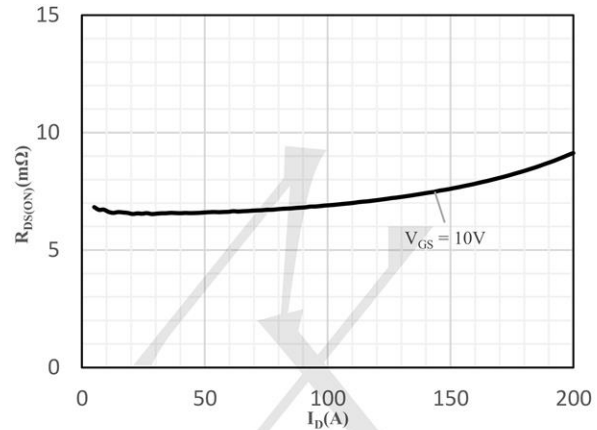


Fig 2 On-Resistance vs. Drain Current and Gate Voltage

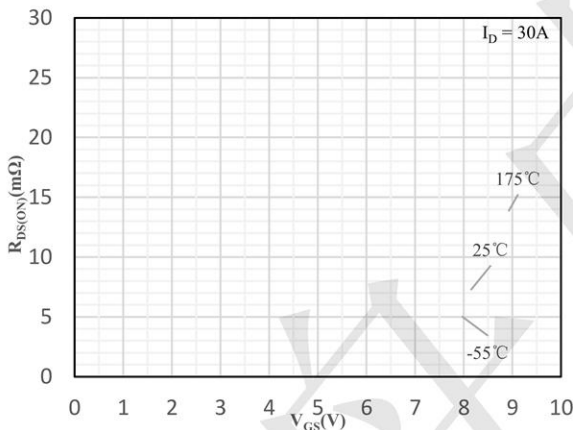


Fig 3 On-Resistance vs. Gate-Source Voltage

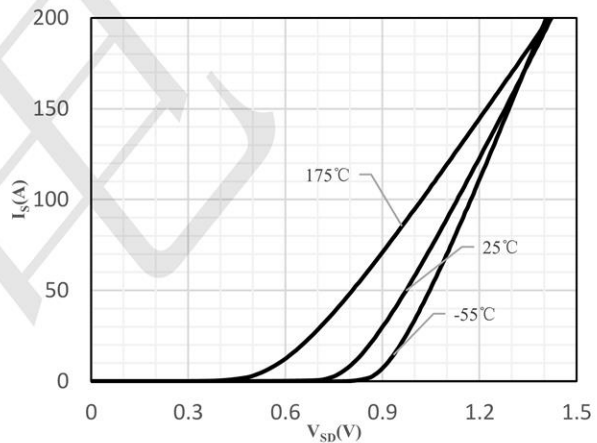


Fig 4 Body-Diode Characteristics

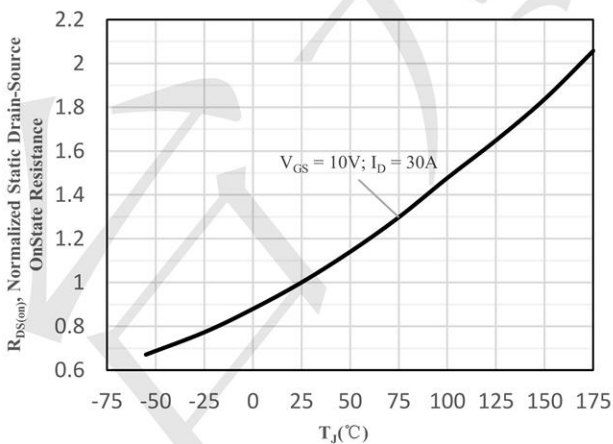


Fig 5 Normalized On-Resistance vs. Junction Temperature

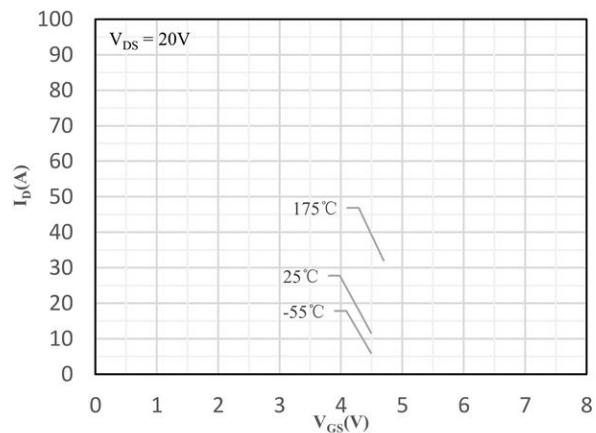


Fig 6 Transfer Characteristics

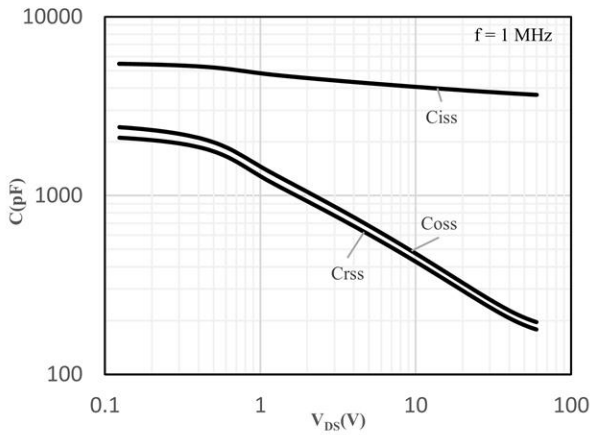


Fig 7 Capacitance Characteristics

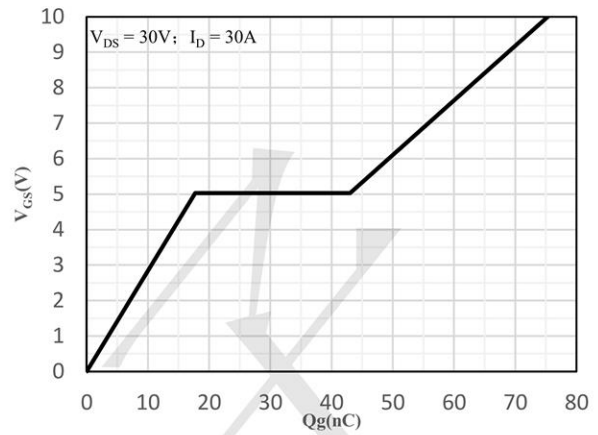


Fig 8 Gate-Charge Characteristics

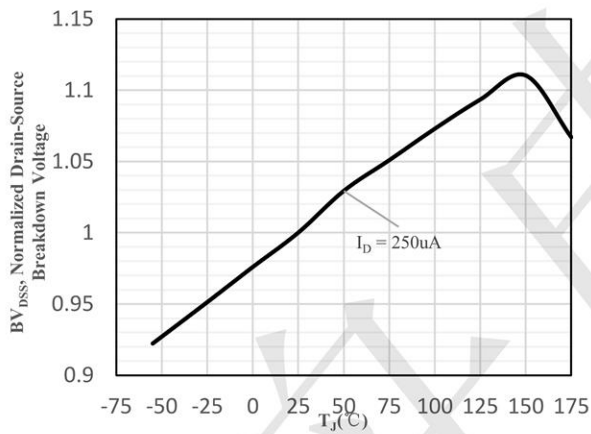


Fig 9 Normalized Breakdown Voltage vs. Junction Temperature

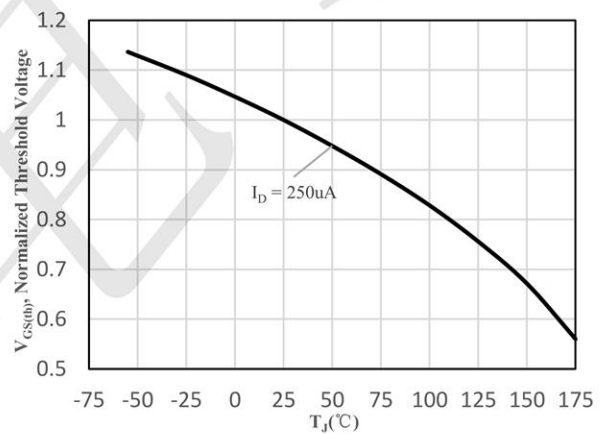


Fig 10 Normalized $V_{GS(th)}$ vs. Junction Temperature

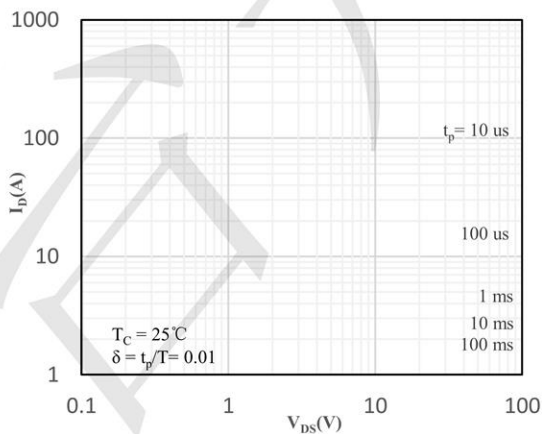


Fig 11 Safe Operation Area

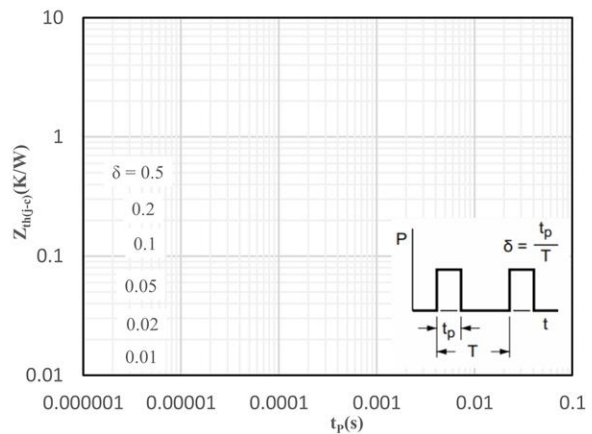


Fig 12 Maximum transient thermal impedance



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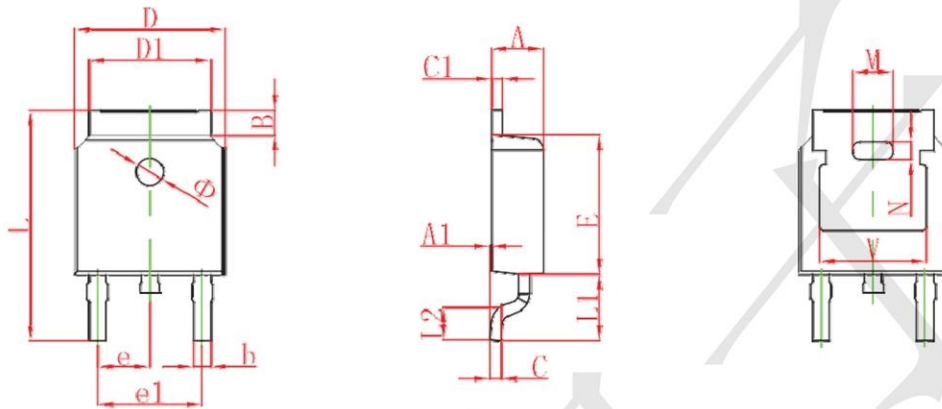
—台丹电子—

AOD2606

N-Channel 60-V (D-S) MOSFET

www.sot23.com.tw

TO252 Package information



Symbol	Dimensions In Millimeters		Dimensions In Inches	
	Min.	Max.	Min.	Max.
A	2.200	2.380	0.087	0.094
A1	0.000	0.100	0.000	0.004
B	0.800	1.400	0.031	0.055
b	0.710	0.810	0.028	0.032
c	0.460	0.560	0.018	0.022
c1	0.460	0.560	0.018	0.022
D	6.500	6.700	0.256	0.264
D1	5.130	5.460	0.202	0.215
E	6.000	6.200	0.236	0.244
e	2.286 TYP.		0.090 TYP.	
e1	4.327	4.727	0.170	0.186
M	1.778 REF.		0.070 REF.	
N	0.762 REF.		0.018 REF.	
L	9.800	10.400	0.386	0.409
L1	2.9 REF.		0.114 REF.	
L2	1.400	1.700	0.055	0.067
V	4.830 REF.		0.190 REF.	
I	1.100	1.300	0.043	0.0±1