

### Features

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

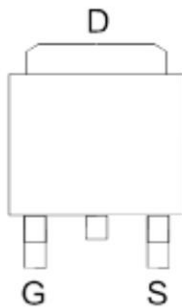
### Application

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

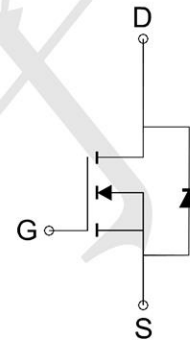
### Package and Pin Configuration

(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	$V_{GSS}$	$\pm 20$	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 ( $T_A = 25^\circ C$ ) <sup>*1</sup>		17	A
Continuous Drain Current ( $T_A = 100^\circ C$ ) <sup>*1</sup>		12	A
Pulsed Drain Current ( $t_p = 10\mu s, T_C = 25^\circ C$ )	$I_{DM}$	320	A
Single Pulse Avalanche Energy <sup>*3</sup>	$E_{AS}$	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	$^\circ C$

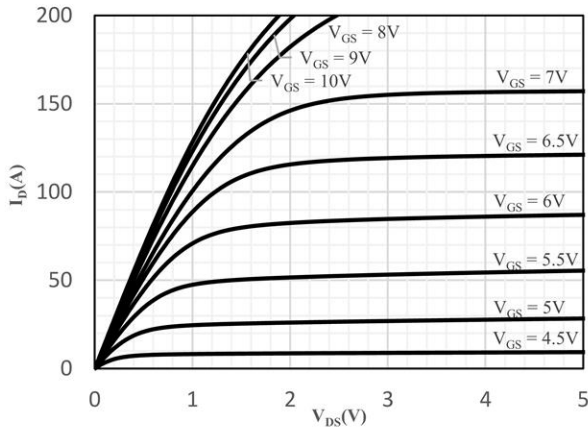
### Thermal Characteristics

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	$^{\circ}C/W$

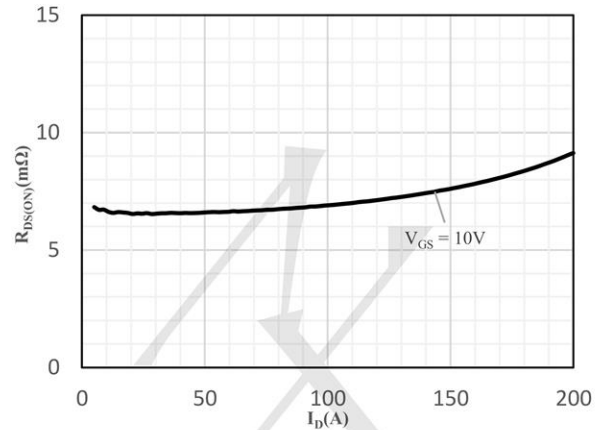
### Electrical Characteristics (@ $T_A = 25^{\circ}C$ unless otherwise specified)

Symbol	Parameter	Test Condition	Min.	Typ.	Max.	Unit
<b>Static Characteristics</b>						
$V_{DSS}$	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	$\mu A$
$I_{GSS}$	Gate-Body Leakage Current	$V_{GS} = \pm 20V, V_{DS} = 0V$	-	-	$\pm 100$	nA
<b>On Characteristics</b>						
$R_{DS(ON)}$	Drain-Source On-resistance *2	$V_{GS} = 10V, I_D = 30A$	-	5.5	8	m $\Omega$
$V_{GS(th)}$	Gate Threshold Voltage	$V_{DS} = V_{GS}, I_D = 250\mu A$	2	3	4	V
<b>Dynamic Characteristics</b>						
$C_{ISS}$	Input Capacitance	$V_{GS} = 0V$	-	4570	-	pF
$C_{OSS}$	Output Capacitance	$V_{DS} = 25V$	-	302	-	
$C_{RSS}$	Reverse Transfer Capacitance	$f = 1.0MHz$	-	291	-	
<b>Switching Characteristics</b>						
$t_{d(ON)}$	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	-	
<b>Source-Drain Diode Characteristics</b>						
$V_{SD}$	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

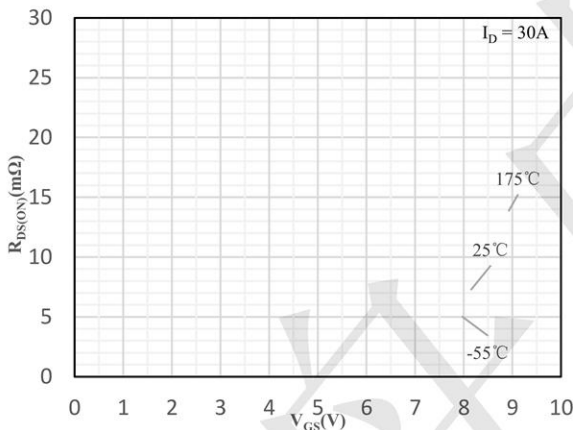
### Ratings and Characteristics Curves (@ $T_A = 25^\circ\text{C}$ unless otherwise specified)



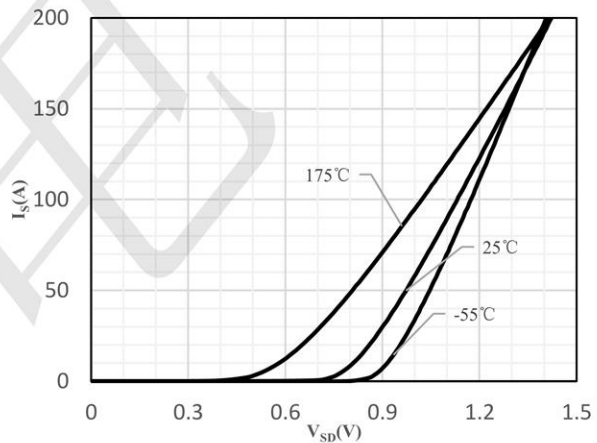
**Fig 1 Typical Output Characteristics**



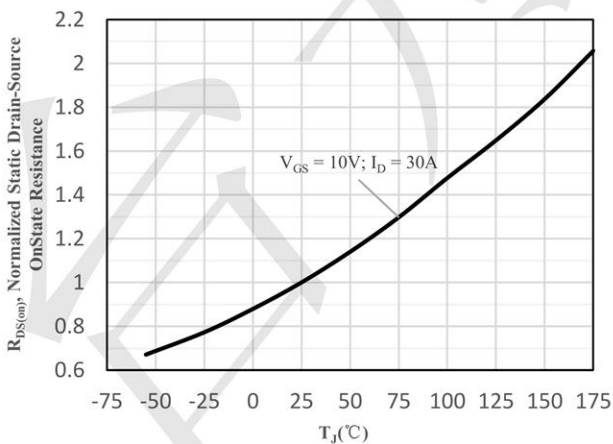
**Fig 2 On-Resistance vs. Drain Current and Gate Voltage**



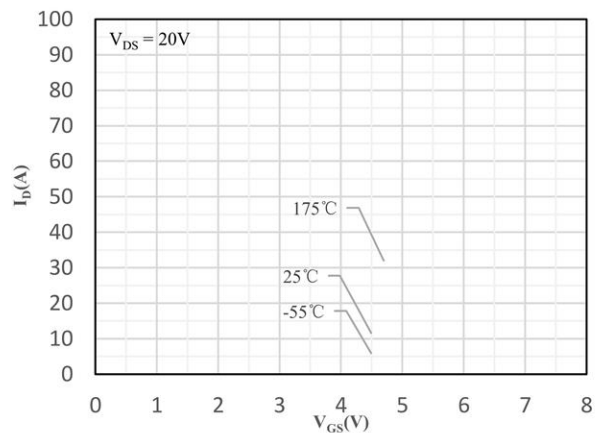
**Fig 3 On-Resistance vs. Gate-Source Voltage**



**Fig 4 Body-Diode Characteristics**



**Fig 5 Normalized On-Resistance vs. Junction Temperature**



**Fig 6 Transfer Characteristics**

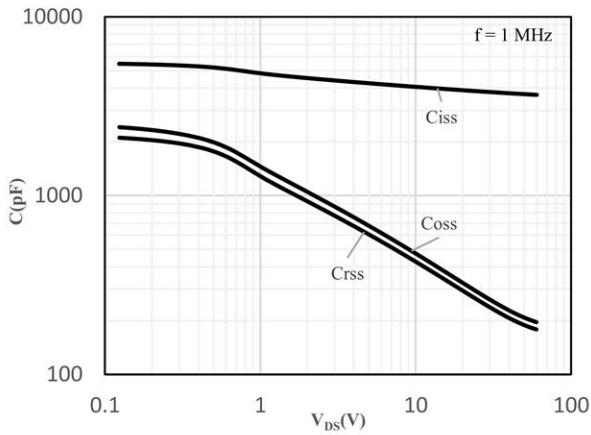


Fig 7 Capacitance Characteristics

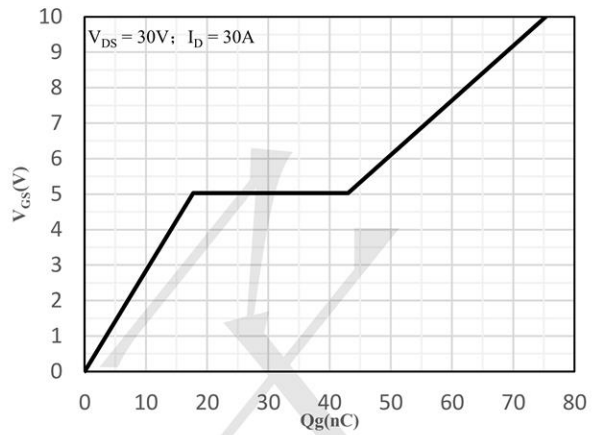


Fig 8 Gate-Charge Characteristics

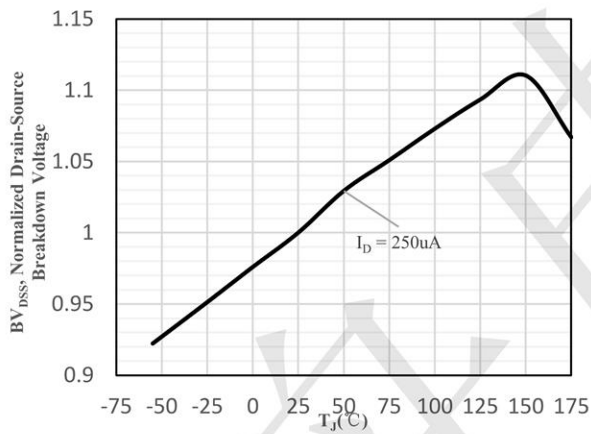


Fig 9 Normalized Breakdown Voltage vs. Junction Temperature

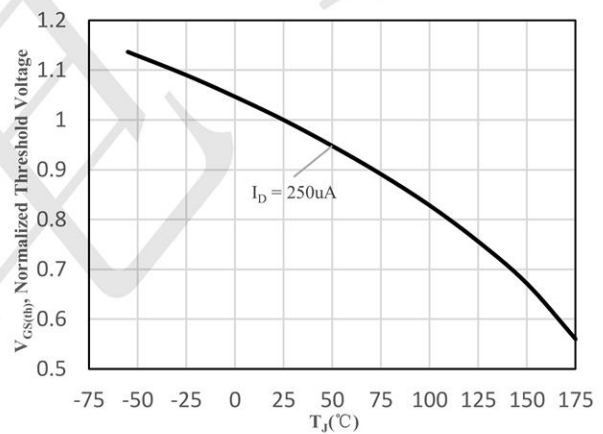


Fig 10 Normalized  $V_{GS(th)}$  vs. Junction Temperature

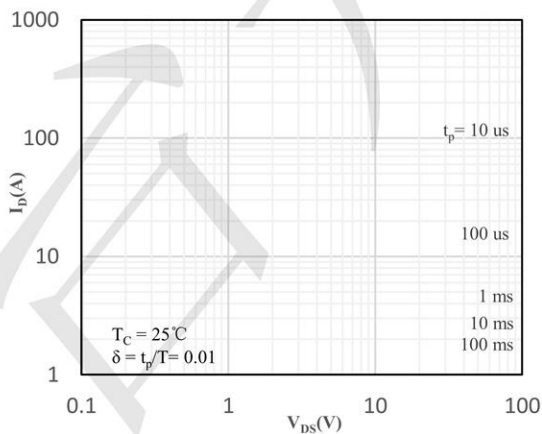


Fig 11 Safe Operation Area

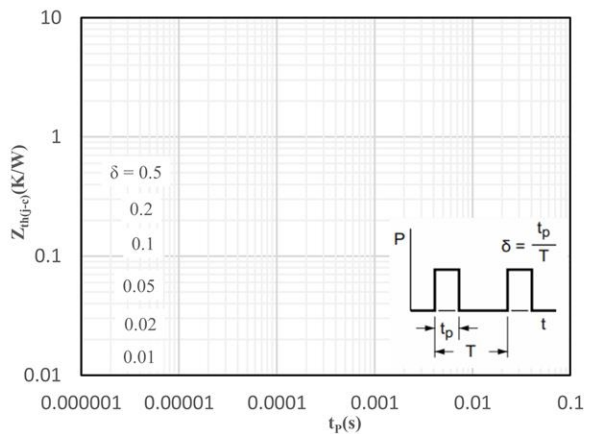


Fig 12 Maximum transient thermal impedance



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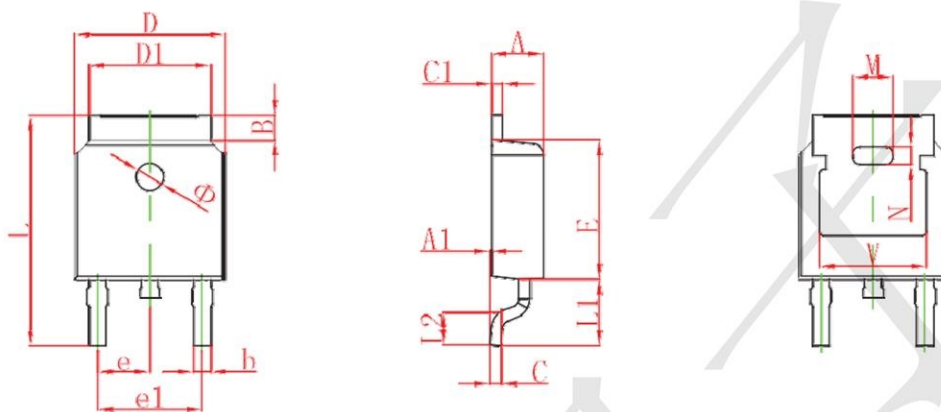
—台丹电子—

AOD2606

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

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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

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