



Description

The AON1605 uses advanced trench technology to provide excellent $R_{DS(ON)}$, low gate charge and operation with gate voltages as low as 2.5V. This device is suitable for use as a Battery protection or in other Switching application.

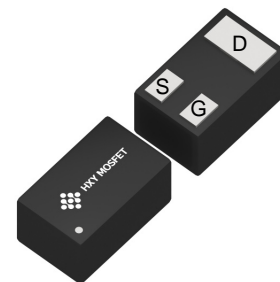
General Features

$V_{DS} = -20V$ $I_D = -0.8A$

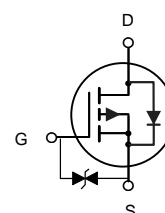
$R_{DS(ON)} < 560\text{ m}\Omega @ V_{GS} = -4.5V$

$R_{DS(ON)} < 780\text{ m}\Omega @ V_{GS} = -2.5V$

ESD Rating: 1500V HBM



DFN1006-3L
(DFN-3(0.6x1))



P-Channel MOSFET

Application

Battery protection

Load switch

Uninterruptible power supply

Package Marking and Ordering Information

Product ID	Pack	Brand	Qty(PCS)
AON1605	DFN1006-3L(DFN-3(0.6x1))	HXY MOSFET	10000

Absolute Maximum Ratings ($T_A = 25^\circ\text{C}$ unless otherwise noted)

Symbol	Parameter	Limit	Unit
V_{DS}	Drain-Source Voltage	-20	V
V_{GS}	Gate-Source Voltage	± 12	V
I_D	Drain Current-Continuous	-0.8	A
P_D	Maximum Power Dissipation	100	mW
T_J, T_{STG}	Operating Junction and Storage Temperature Range	-55 To 150	$^\circ\text{C}$
$R_{\theta JA}$	Thermal Resistance, Junction-to-Ambient (Note 2)	1250	$^\circ\text{C/W}$



$T_a=25^{\circ}\text{C}$ unless otherwise noted

Parameter	Symbol	Test Condition	Min	Typ	Max	Unit
STATIC PARAMETERS						
Drain-source breakdown voltage	V _{(BR)DSS}	V _{GS} = 0V, I _D =-250μA	-20			V
Zero gate voltage drain current	I _{DSS}	V _{DS} =-20V,V _{GS} = 0V			-1	μA
Gate-body leakage current	I _{GSS}	V _{GS} =±10V, V _{DS} = 0V			±20	uA
Gate threshold voltage (note 2)	V _{GS(th)}	V _{DS} =V _{GS} , I _D =-250μA	-0.35	-0.61	-1.1	V
Drain-source on-resistance(note 2)	R _{DS(on)}	V _{GS} =-4.5V, I _D =-1A		350	390	mΩ
		V _{GS} =-2.5V, I _D =-0.8A		395	460	mΩ
		V _{GS} =-1.8V, I _D =-0.5A		450		mΩ
Forward tranconductance(note 2)	g _{FS}	V _{DS} =-10V, I _D =-0.54A		1.2		S
Diode forward voltage	V _{SD}	I _S =-0.5A, V _{GS} = 0V			-1.2	V
DYNAMIC PARAMETERS(note 4)						
Input Capacitance	C _{iss}	V _{DS} =-16V,V _{GS} =0V,f =1MHz		113		pF
Output Capacitance	C _{oss}			15		pF
Reverse Transfer Capacitance	C _{rss}			9		pF
SWITCHING PARAMETERS (note 4)						
Turn-on delay time (note 3)	t _{d(on)}	V _{DD} =-4.5V,V _{GS} =-10V, I _D =-200mA,R _{GEN} =10Ω		9		ns
Turn-on rise time (note 3)	t _r			5.7		ns
Turn-off delay time (note 3)	t _{d(off)}			32.6		ns
Turn-off fall time (note 3)	t _f			20.3		ns

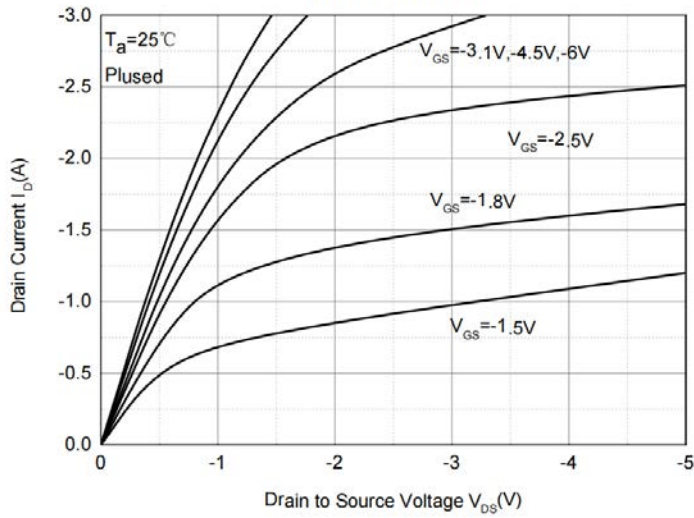
Notes:

1. Surface mounted on FR4 board using the minimum recommended pad size.
2. Pulse Test : Pulse Width=300 μs , Duty Cycle=2%.
3. Switching characteristics are independent of operating junction temperatures.
4. Guaranteed by design, not subject to producing.

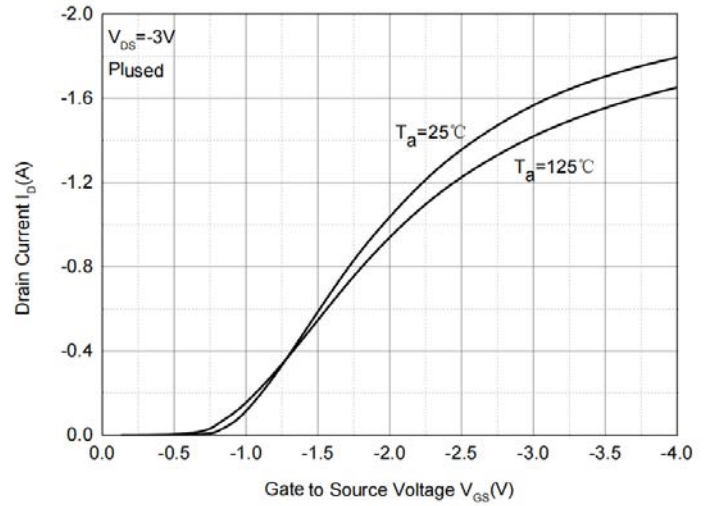


Typical Electrical

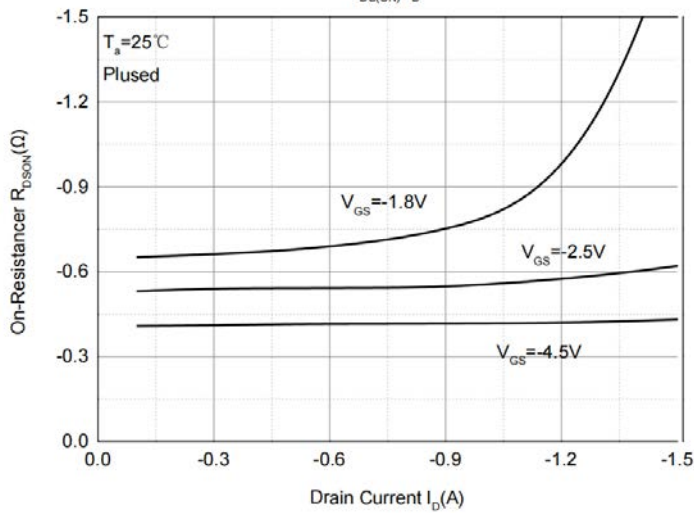
Output Characteristics



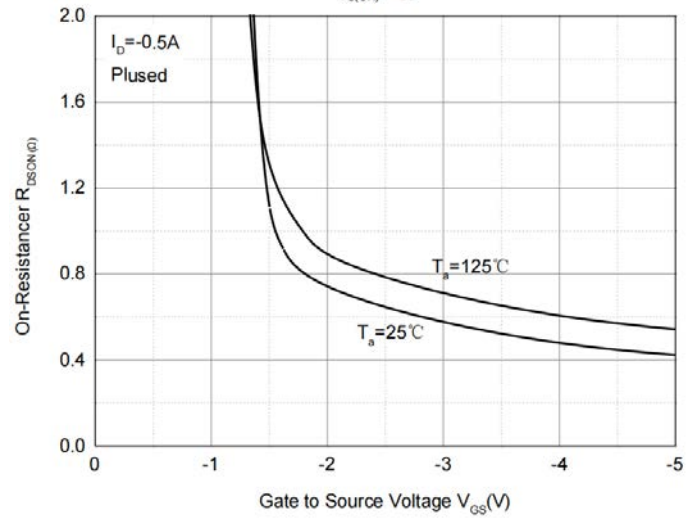
Transfer Characteristics



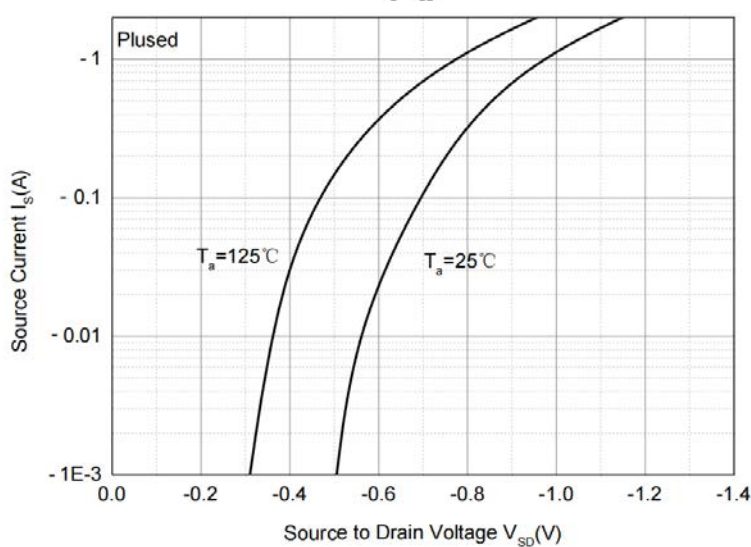
$R_{DS(ON)} - I_D$



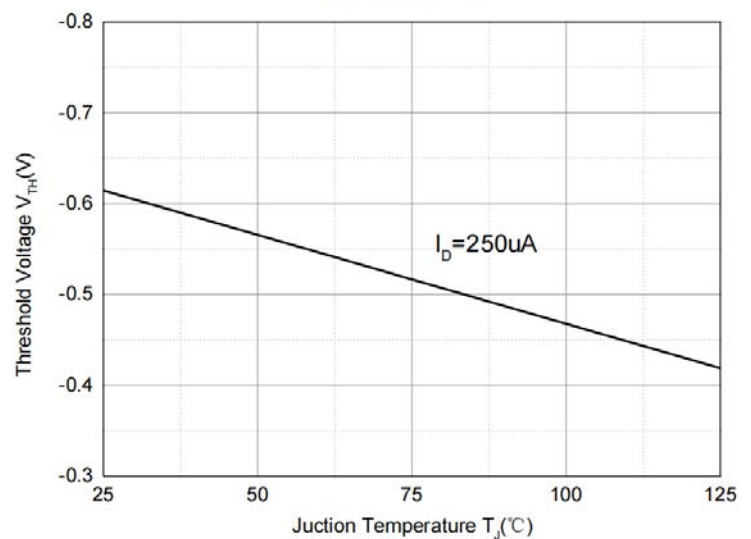
$R_{DS(ON)} - V_{GS}$



$I_S - V_{SD}$

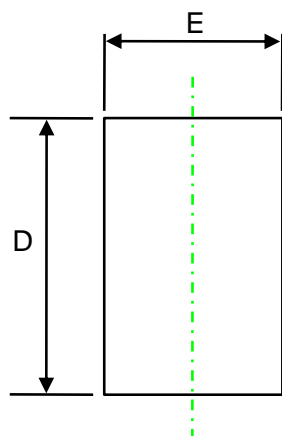


Threshold Voltage

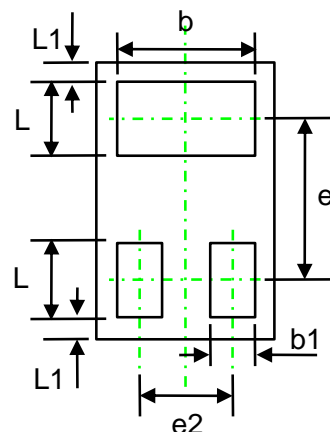




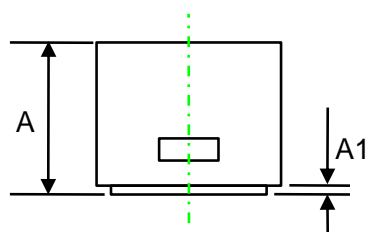
DFN1006-3L(DFN-3(0.6x1)) Package Outline Dimensions



TOP VIEW



BOTTOM VIEW



SIDE VIEW

Symbol	Dimensions In Millimeters (mm)		
	Min.	Typ.	Max.
A	0.44	0.47	0.50
A1	0.00	0.03	0.05
D	0.95	1.00	1.05
E	0.55	0.60	0.65
b	0.45	0.50	0.55
e	-	0.65	-
e2	-	0.35	-
L1	0.05 REF.		
L	0.20	0.25	0.30
b1	0.10	0.15	0.20



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