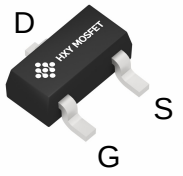
Description

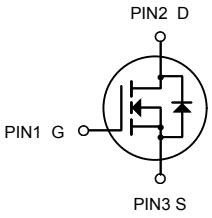
The AO3418 uses advanced trench technology to provide excellent $R_{DS(ON)}$, low gate charge and operation with gate voltages as low as 2.5V.
This device is suitable for use as a Battery protection or in other Switching application.



SOT-23-3L

General Features

V_{DS} = 30V,I_D = 5.8A
$R_{DS(ON)}$ < 28mΩ @ V_{GS}=10V
$R_{DS(ON)}$ < 38mΩ @ V_{GS}=4.5V



N-Channel MOSFET

Application

High power and current handing capability
Lead free product is acquired
Surface mount package
PWM applications
Load switch
Power management

Package Marking and Ordering Information

Product ID	Pack	Brand	Qty(PCS)
AO3418	SOT-23-3L	HXY MOSFET	3000

Absolute Maximum Ratings (T_A=25℃unless otherwise noted)

Symbol	Parameter	Limit	Unit
V_{DS}	Drain-Source Voltage	30	V
V_{GS}	Gate-Source Voltage	±12	V
I_D	Drain Current-Continuous	5.8	A
I_{DM}	Drain Current-Pulsed (Note 1)	20.4	A
P_D	Maximum Power Dissipation	1.4	W
T_J,T_{STG}	Operating Junction and Storage Temperature Range	-55 To 150	℃
$R_{\theta JA}$	Thermal Resistance,Junction-to-Ambient (Note 2)	89	℃/W

Electrical Characteristics (T_J=25℃ unless otherwise specified)

Symbol	Parameter	Test Condition	Min.	Typ.	Max.	Units
$V_{(BR)DSS}$	Drain-Source Breakdown Voltage	V_{GS}=0V, I_D=250μA	30	-	-	V
I_{DSS}	Zero Gate Voltage Drain Current	V_{DS}=30V, V_{GS}=0V,	-	-	1.0	μA
I_{GSS}	Gate to Body Leakage Current	V_{DS}=0V, V_{GS}= ±12V	-	-	±100	nA
$V_{GS(th)}$	Gate Threshold Voltage	V_{DS}=V_{GS}, I_D=250μA	0.5	-	1.3	V
$R_{DS(on)}$	Static Drain-Source on-Resistance note2	V_{GS}=10V, I_D=4A	-	24	28	mΩ
		V_{GS}=4.5V, I_D=3A	-	27	38	
		V_{GS}=2.5V, I_D=3A	-	36	54	
C_{iss}	Input Capacitance	V_{DS}=15V, V_{GS}=0V, f=1.0MHz	-	507	-	pF
C_{oss}	Output Capacitance		-	52	-	pF
C_{rss}	Reverse Transfer Capacitance		-	43	-	pF
Q_g	Total Gate Charge	V_{DS}=15V, I_D=5A, V_{GS}=4.5V	-	9.1	-	nC
Q_{gs}	Gate-Source Charge		-	2.1	-	nC
Q_{gd}	Gate-Drain(“Miller”) Charge		-	2.8	-	nC
$t_{d(on)}$	Turn-on Delay Time	V_{DS}=15V,R_{GEN}=3Ω, R_L=2.8Ω, V_{GS}=10V	-	3	-	ns
t_r	Turn-on Rise Time		-	2.8	-	ns
$t_{d(off)}$	Turn-off Delay Time		-	25	-	ns
t_f	Turn-off Fall Time		-	4	-	ns
I_S	Maximum Continuous Drain to Source Diode Forward Current		-	-	5	A
I_{SM}	Maximum Pulsed Drain to Source Diode Forward Current		-	-	20	A
V_{SD}	Drain to Source Diode Forward Voltage	V_{GS}=0V, I_S=5A	-	-	1.2	V

Notes:1. Repetitive Rating: Pulse Width Limited by Maximum Junction Temperature

2. Pulse Test: Pulse Width≤300μs, Duty Cycle≤0.5%

Typical Performance Characteristics

Figure1: Output Characteristics

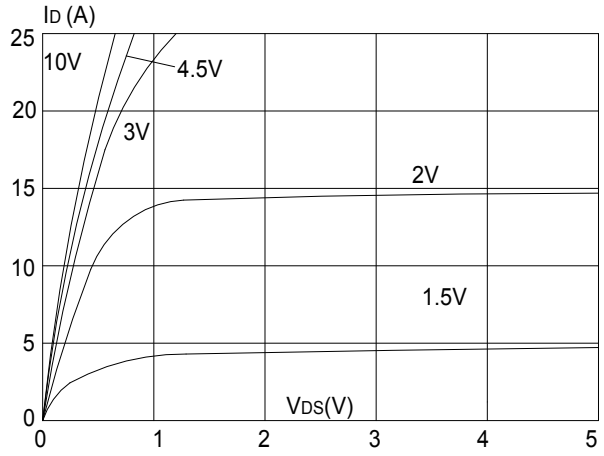


Figure 2: Typical Transfer Characteristics

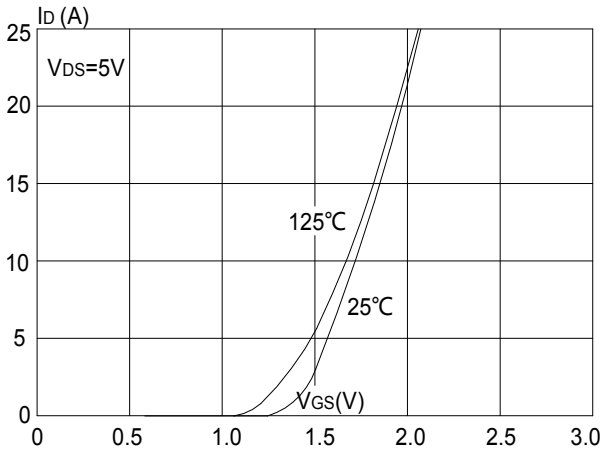


Figure 3: On-resistance vs. Drain Current

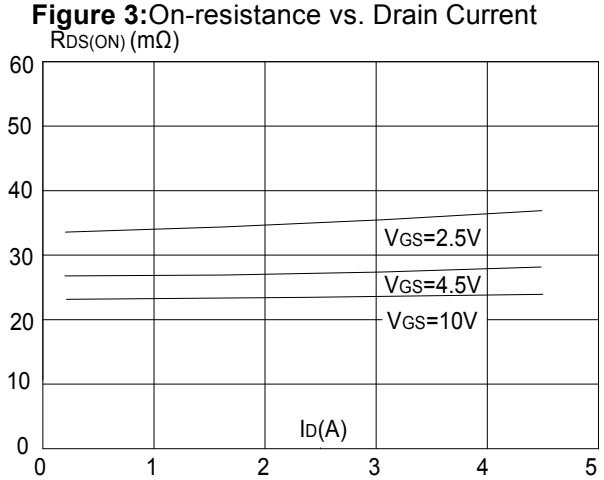


Figure 4: Body Diode Characteristics

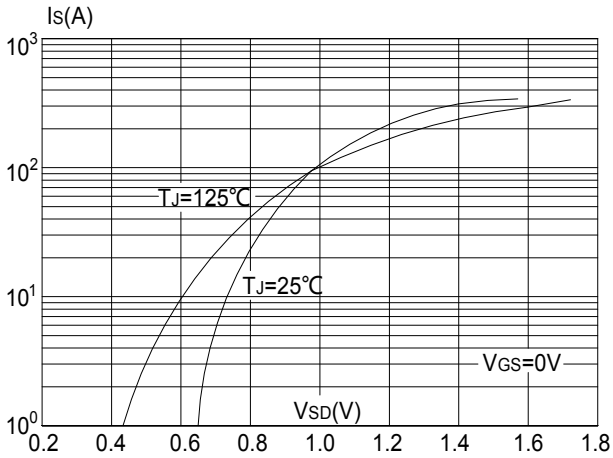


Figure 5: Gate Charge Characteristics

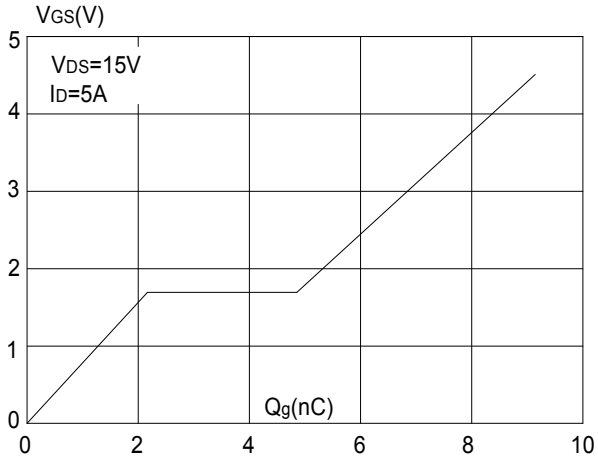


Figure 6: Capacitance Characteristics

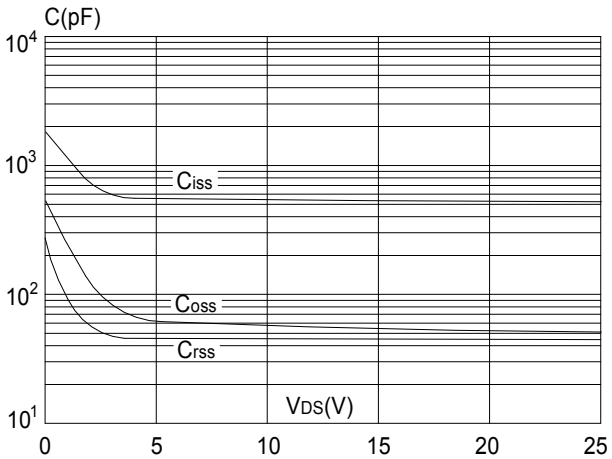


Figure 7: Normalized Breakdown Voltage vs. Junction Temperature

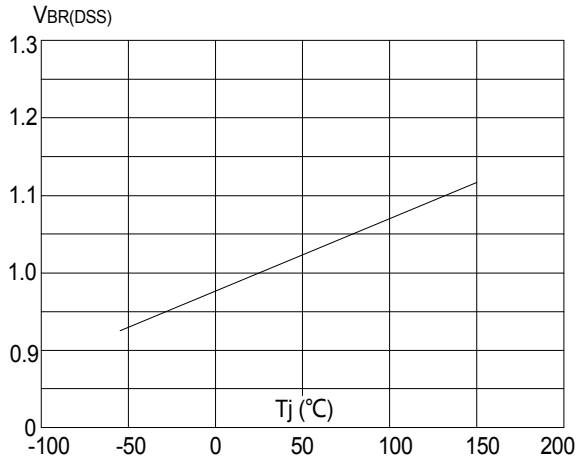


Figure 8: Normalized on Resistance vs. Junction Temperature

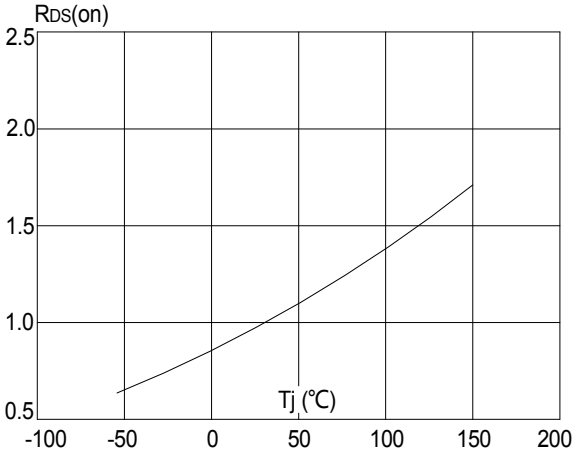


Figure 9: Maximum Safe Operating Area

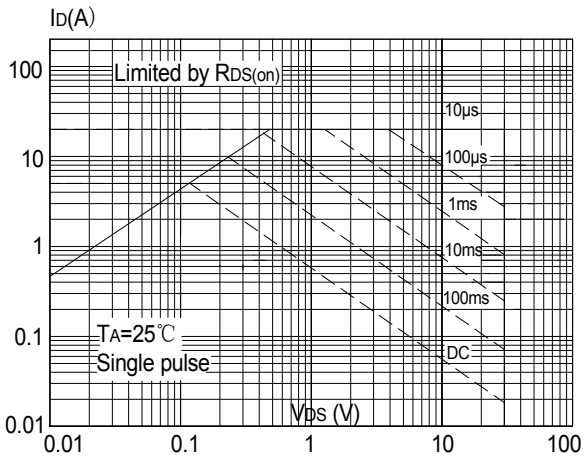


Figure 10: Maximum Continuous Drain Current vs. Ambient Temperature

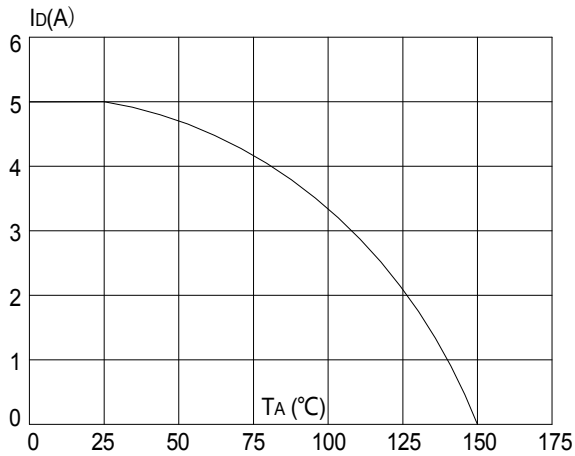
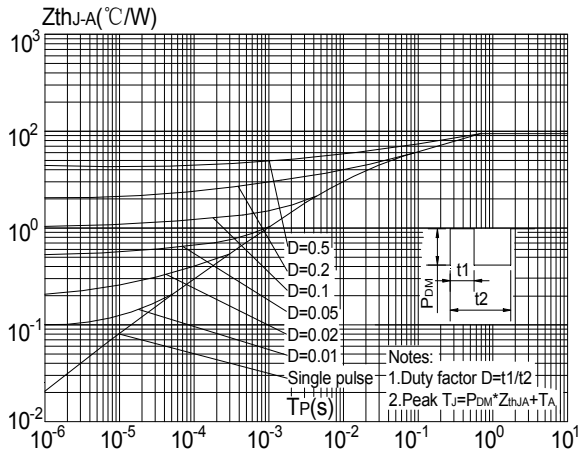
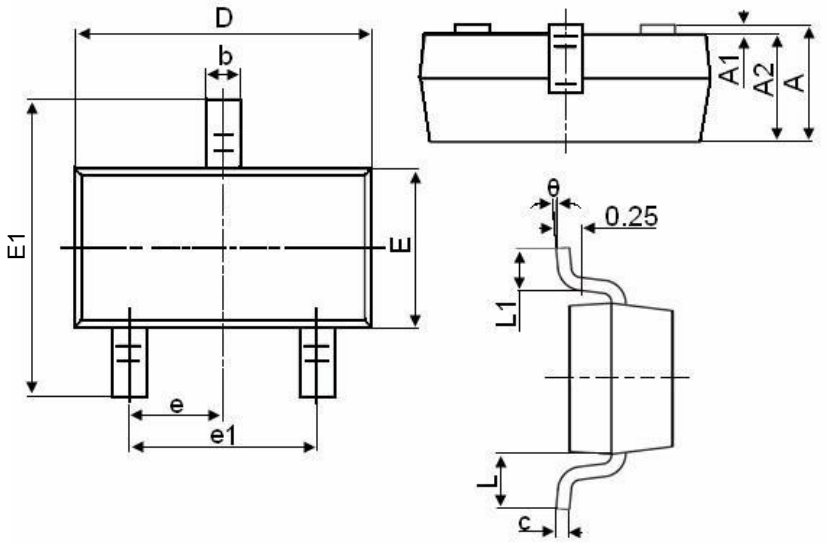


Figure.11: Maximum Effective Transient Thermal Impedance, Junction-to-Ambient



SOT-23-3L Package Information



Symbol	Dimensions in Millimeters	
	MIN.	MAX.
A	1.050	1.250
A1	0.000	0.100
A2	1.050	1.150
b	0.300	0.500
c	0.100	0.200
D	2.800	3.000
E	1.500	1.700
E1	2.650	2.950
e	0.950TYP	
e1	1.800	2.000
L	0.550REF	
L1	0.300	0.600
θ	0°	8°

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