



## Description

The AOSS62934 uses advanced trench technology to provide excellent  $R_{DS(ON)}$ , low gate charge and operation with gate voltages as low as 4.5V. This device is suitable for use as a Battery protection or in other Switching application.

## General Features

$V_{DS} = 100V$   $I_D = 5A$

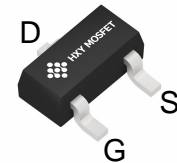
$R_{DS(ON)} < 125m\Omega$  @  $V_{GS}=10V$

## Application

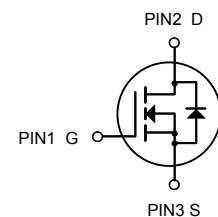
Battery protection

Load switch

Uninterruptible power supply



**SOT-23**



N-Channel MOSFET

## Package Marking and Ordering Information

Product ID	Pack	Brand	Qty(PCS)
AOSS62934	SOT-23	HXY MOSFET	3000

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

Symbol	Parameter	Rating	Units
$V_{DS}$	Drain-Source Voltage	100	V
$V_{GS}$	Gate-Source Voltage	$\pm 20$	V
$I_D @ T_A = 25^{\circ}C$	Continuous Drain Current, $V_{GS} @ 10V^1$	5	A
$I_D @ T_A = 70^{\circ}C$	Continuous Drain Current, $V_{GS} @ 10V^1$	3.2	A
$I_{DM}$	Pulsed Drain Current <sup>2</sup>	16	A
$P_D @ T_A = 25^{\circ}C$	Total Power Dissipation <sup>3</sup>	3.1	W
$T_{STG}$	Storage Temperature Range	-55 to 150	$^{\circ}C$
$T_J$	Operating Junction Temperature Range	-55 to 150	$^{\circ}C$
$R_{\theta JA}$	Thermal Resistance Junction-ambient(steady state) <sup>1</sup>	100	$^{\circ}C/W$
$R_{\theta JA}$	Thermal Resistance Junction-ambient( $t < 10s$ ) <sup>1</sup>	40	$^{\circ}C/W$



**Electrical Characteristics ( $T_J=25^{\circ}\text{C}$ , unless otherwise noted)**

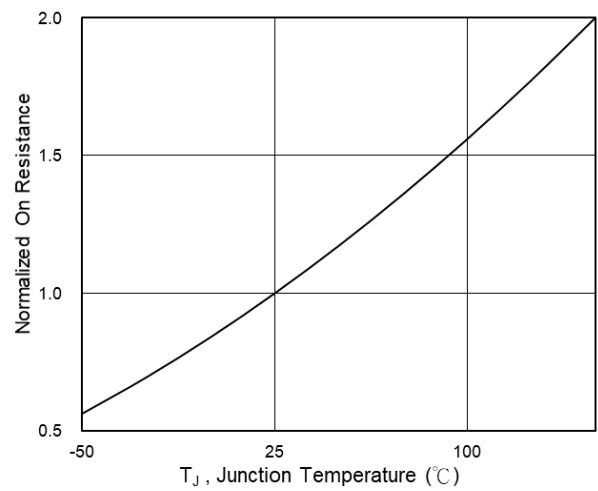
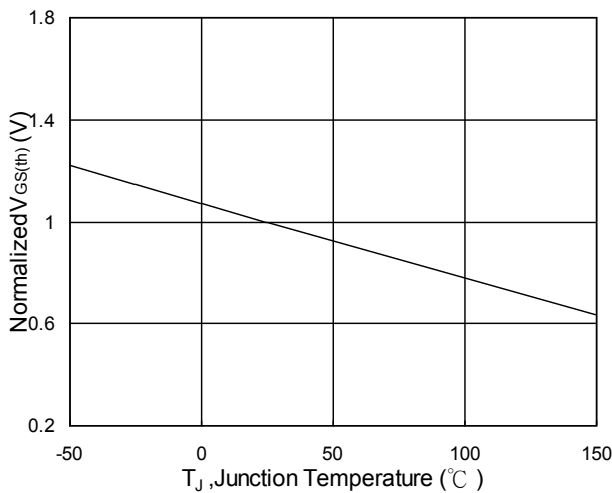
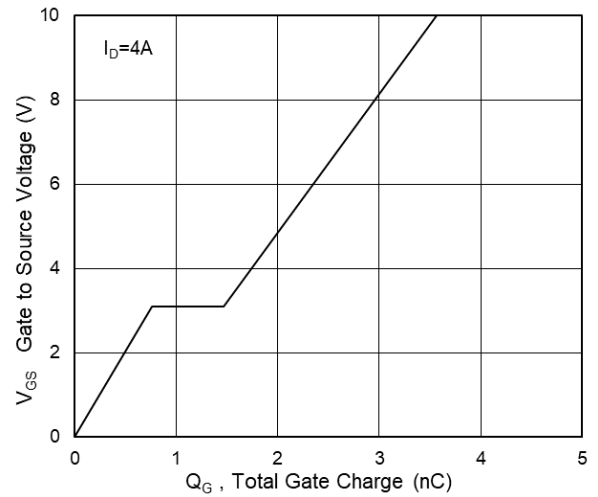
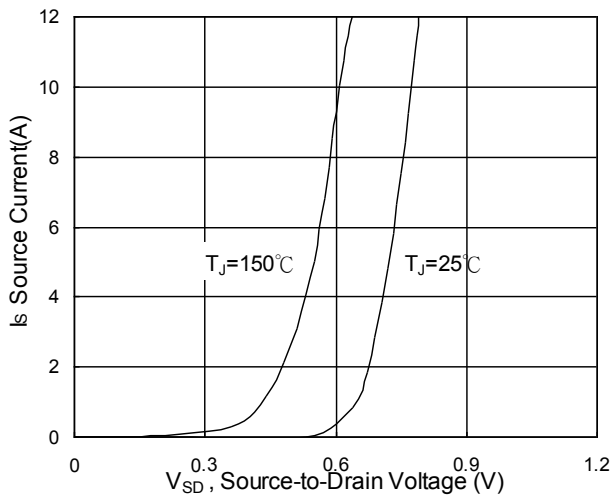
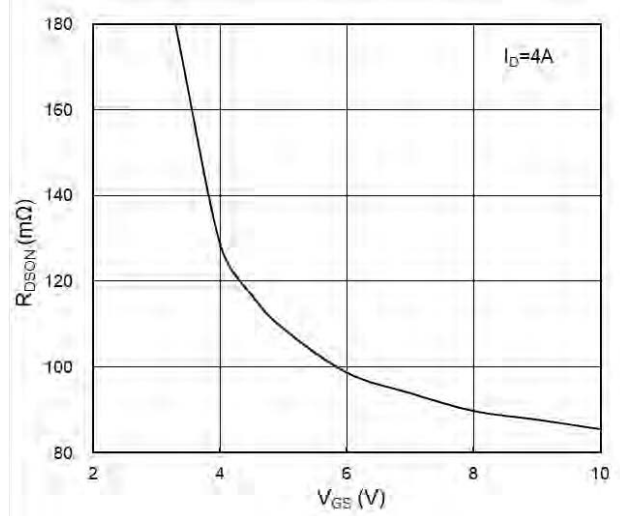
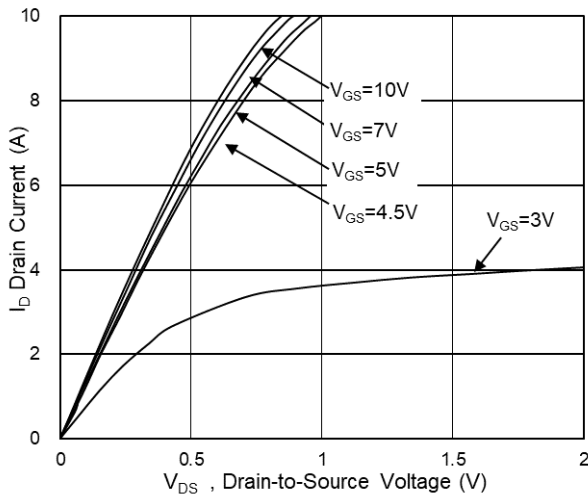
Symbol	Parameter	Conditions	Min.	Typ.	Max.	Unit
$BV_{DSS}$	Drain-Source Breakdown Voltage	$V_{GS}=0V$ , $I_D=250\mu A$	100	108	---	V
$R_{DS(ON)}$	Static Drain-Source On-Resistance <sup>2</sup>	$V_{GS}=10V$ , $I_D=4A$	---	110	125	m $\Omega$
		$V_{GS}=4.5V$ , $I_D=2A$	---	120	145	m $\Omega$
$V_{GS(th)}$	Gate Threshold Voltage	$V_{GS}=V_{DS}$ , $I_D=250\mu A$	1.2	1.7	2.5	V
$I_{DSS}$	Drain-Source Leakage Current	$V_{DS}=80V$ , $V_{GS}=0V$ , $T_J=25^{\circ}\text{C}$	---	---	1	$\mu A$
		$V_{DS}=80V$ , $V_{GS}=0V$ , $T_J=85^{\circ}\text{C}$	---	---	50	
$I_{GSS}$	Gate-Source Leakage Current	$V_{GS}=\pm 20V$ , $V_{DS}=0V$	---	---	$\pm 100$	nA
$R_g$	Gate Resistance	$V_{DS}=0V$ , $V_{GS}=0V$ , $f=1\text{MHz}$	---	2.3	4.6	
$Q_g$	Total Gate Charge (10V)	$V_{DS}=30V$ , $V_{GS}=10V$ , $I_D=4A$	---	3.57	---	nC
$Q_{gs}$	Gate-Source Charge		---	0.76	---	
$Q_{gd}$	Gate-Drain Charge		---	0.71	---	
$T_{d(on)}$	Turn-On Delay Time	$V_{DD}=30V$ , $V_{GS}=10V$ , $R_G=3.3$ $I_D=1A$	---	11	---	ns
$T_r$	Rise Time		---	6	---	
$T_{d(off)}$	Turn-Off Delay Time		---	30	---	
$T_f$	Fall Time		---	4	---	
$C_{iss}$	Input Capacitance	$V_{DS}=50V$ , $V_{GS}=0V$ , $f=1\text{MHz}$	---	182	---	pF
$C_{oss}$	Output Capacitance		---	30	---	
$C_{rss}$	Reverse Transfer Capacitance		---	3.6	---	
$I_S$	Continuous Source Current <sup>1,4</sup>	$V_G=V_D=0V$ , Force Current	---	---	2	A
$V_{SD}$	Diode Forward Voltage <sup>2</sup>	$V_{GS}=0V$ , $I_S=1A$ , $T_J=25^{\circ}\text{C}$	---	---	1.2	V

Note :

- 1.The data tested by surface mounted on a 1 inch<sup>2</sup> FR-4 board with 2OZ copper.
- 2.The data tested by pulsed , pulse width  $\leq 300\mu s$  , duty cycle  $\leq 2\%$
- 3.The power dissipation is limited by  $150^{\circ}\text{C}$  junction temperature
- 4.The data is theoretically the same as  $I_D$  and  $I_{DM}$  , in real applications , should be limited by total power dissipation.



## Typical Characteristics



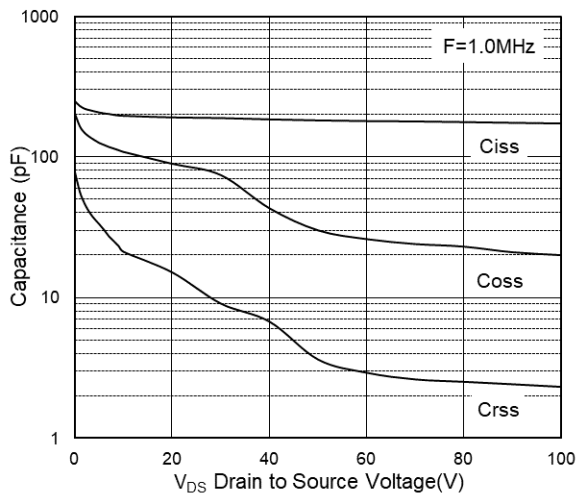


Fig.7 Capacitance

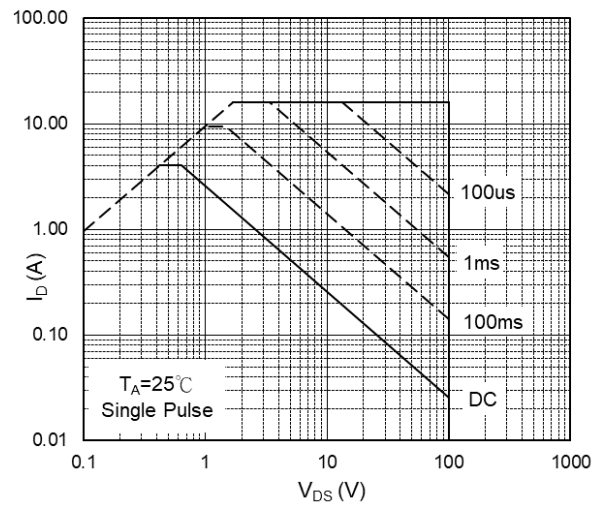


Fig.8 Safe Operating Area

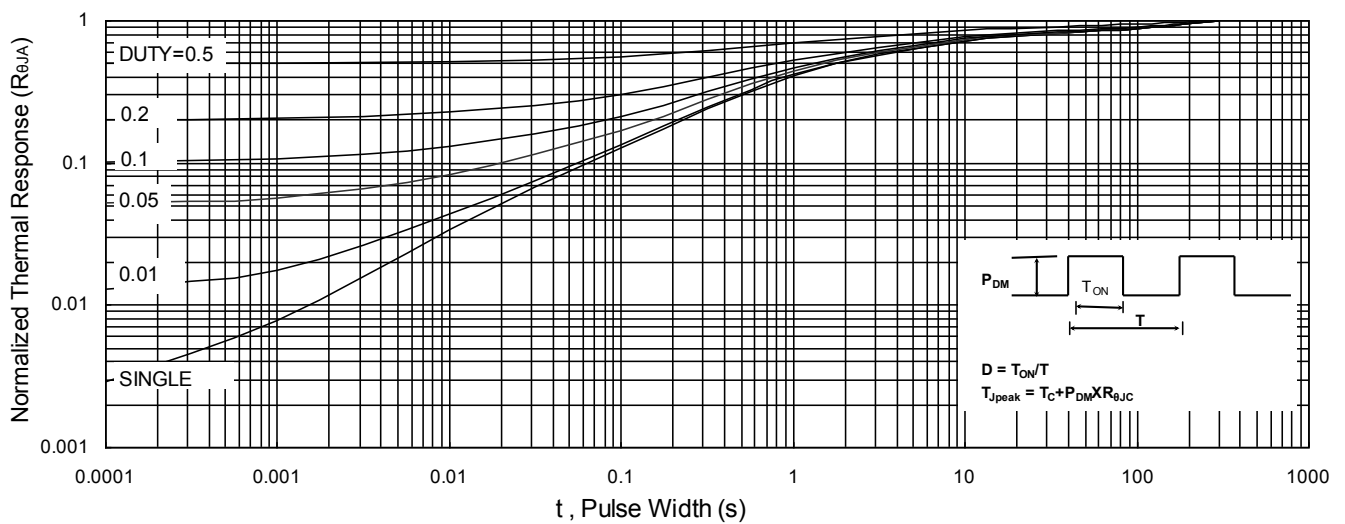


Fig.9 Normalized Maximum Transient Thermal Impedance

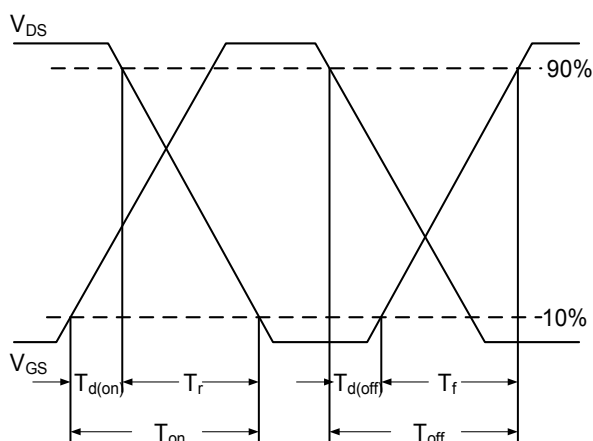


Fig.10 Switching Time Waveform

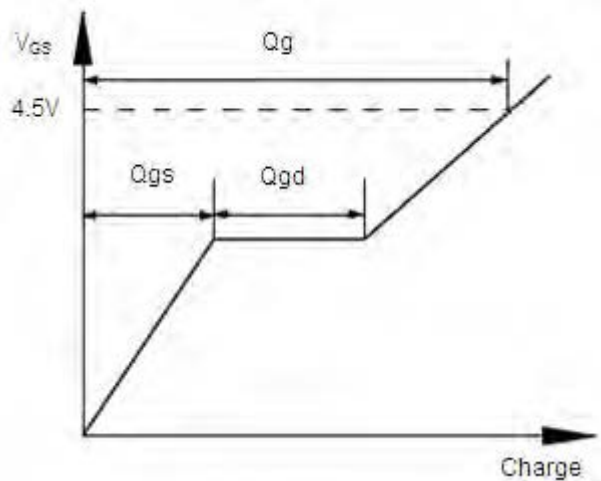
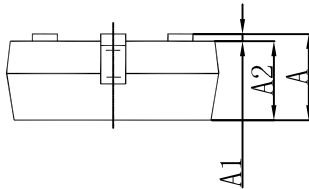
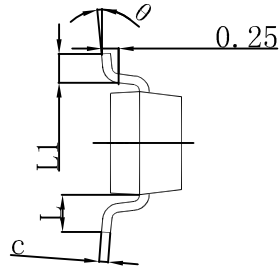
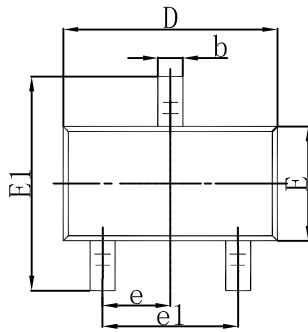


Fig.11 Gate Charge Waveform

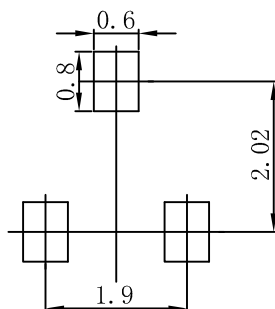


## SOT-23 Package Outline Dimensions



Symbol	Dimensions In Millimeters		Dimensions In Inches	
	Min	Max	Min	Max
A	0.900	1.150	0.035	0.045
A1	0.000	0.100	0.000	0.004
A2	0.900	1.050	0.035	0.041
b	0.300	0.500	0.012	0.020
c	0.080	0.150	0.003	0.006
D	2.800	3.000	0.110	0.118
E	1.200	1.400	0.047	0.055
E1	2.250	2.550	0.089	0.100
e	0.950 TYP		0.037 TYP	
e1	1.800	2.000	0.071	0.079
L	0.550 REF		0.022 REF	
L1	0.300	0.500	0.012	0.020
θ	0°	8°	0°	8°

## SOT-23 Suggested Pad Layout



Note:  
1. Controlling dimension: in millimeters.  
2. General tolerance:  $\pm 0.05\text{mm}$ .  
3. The pad layout is for reference purposes only.



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