

# EVVOSEMI<sup>®</sup>

THINK CHANGE DO



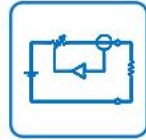
ESD



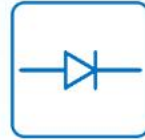
TVS



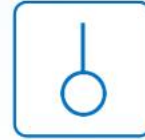
MOS



LDO



Diode



Sensor



DC-DC

## Product Specification

▶ Domestic	Part Number	AO3407A
▶ Overseas	Part Number	AO3407A
▶ Equivalent	Part Number	AO3407A

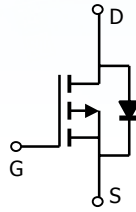
EV is the abbreviation of name EVVO

# AO3407A

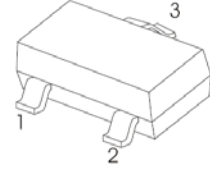
## P-Channel Enhancement MOSFET

### ■ Features

- $V_{DS} (V) = -30V$
- $I_D = -4.1 A$
- $R_{DS(ON)} < 52m\ \Omega$  ( $V_{GS} = -10V$ )
- $R_{DS(ON)} < 87m\ \Omega$  ( $V_{GS} = -4.5V$ )



### SOT - 23



1. GATE
2. SOURCE
3. DRAIN

### ■ Absolute Maximum Ratings $T_a = 25^\circ C$

Parameter	Symbol	Rating	Unit
Drain-Source Voltage	$V_{DS}$	-30	V
Gate-Source Voltage	$V_{GS}$	$\pm 20$	
Continuous Drain Current $T_a = 25^\circ C$	$I_D$	-4.1	A
		$T_a = 70^\circ C$	
Pulsed Drain Current	$I_{DM}$	-20	
Power Dissipation $T_a = 25^\circ C$	$P_D$	1.4	W
		$T_a = 70^\circ C$	
Thermal Resistance.Junction- to-Ambient $t \leq 10s$ Steady State	$R_{thJA}$	90	$^\circ C/W$
		125	
Thermal Resistance.Junction- to-Lead	$R_{thJL}$	60	
Junction Temperature	$T_J$	150	$^\circ C$
Storage Temperature Range	$T_{stg}$	-55 to 150	

## ■ Electrical Characteristics Ta = 25°C

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Drain-Source Breakdown Voltage	V <sub>DSS</sub>	I <sub>D</sub> =-250 μA, V <sub>GS</sub> =0V	-30			V
Zero Gate Voltage Drain Current	I <sub>DSS</sub>	V <sub>DS</sub> =-24V, V <sub>GS</sub> =0V			-1	μA
		V <sub>DS</sub> =-24V, V <sub>GS</sub> =0V, T <sub>J</sub> =55°C			-5	
Gate-Body leakage current	I <sub>GSS</sub>	V <sub>DS</sub> =0V, V <sub>GS</sub> =±20V			±100	nA
Gate Threshold Voltage	V <sub>GS(th)</sub>	V <sub>DS</sub> =V <sub>GS</sub> I <sub>D</sub> =-250 μA	-1	-1.8	-3	V
Static Drain-Source On-Resistance	R <sub>DS(on)</sub>	V <sub>GS</sub> =-10V, I <sub>D</sub> =-4.1A		40.5	52	mΩ
		V <sub>GS</sub> =-10V, I <sub>D</sub> =-4.A T <sub>J</sub> =125°C		57	73	
		V <sub>GS</sub> =-4.5V, I <sub>D</sub> =-3A		64	87	
On state drain current	I <sub>D(ON)</sub>	V <sub>GS</sub> =-4.5V, V <sub>DS</sub> =-5V	-10			A
Forward Transconductance	g <sub>FS</sub>	V <sub>DS</sub> =-5V, I <sub>D</sub> =-4A	5.5	8.2		S
Input Capacitance	C <sub>iss</sub>	V <sub>GS</sub> =0V, V <sub>DS</sub> =-15V, f=1MHz		700		pF
Output Capacitance	C <sub>oss</sub>			120		
Reverse Transfer Capacitance	C <sub>rss</sub>			75		
Gate resistance	R <sub>g</sub>		V <sub>GS</sub> =0V, V <sub>DS</sub> =0V, f=1MHz		10	
Total Gate Charge	Q <sub>g</sub>	V <sub>GS</sub> =-4.5V, V <sub>DS</sub> =-15V, I <sub>D</sub> =-4A		14.3		nC
Gate Source Charge	Q <sub>gs</sub>			7		
Gate Drain Charge	Q <sub>gd</sub>			3.1		
Turn-On DelayTime	t <sub>d(on)</sub>	V <sub>GS</sub> =-10V, V <sub>DS</sub> =-15V, R <sub>L</sub> =3.6 Ω, R <sub>GEN</sub> =3 Ω		8.6		ns
Turn-On Rise Time	t <sub>r</sub>			5		
Turn-Off DelayTime	t <sub>d(off)</sub>			28.2		
Turn-Off Fall Time	t <sub>f</sub>			13.5		
Body Diode Reverse Recovery Time	t <sub>rr</sub>			27		
Body Diode Reverse Recovery Charge	Q <sub>rr</sub>	I <sub>F</sub> =-4A, di/dt=100A/μs		15		nC
Maximum Body-Diode Continuous Current	I <sub>S</sub>				-2.2	A
Diode Forward Voltage	V <sub>SD</sub>	I <sub>S</sub> =-1A, V <sub>GS</sub> =0V		-0.77	-1	V

■ Typical Characteristics

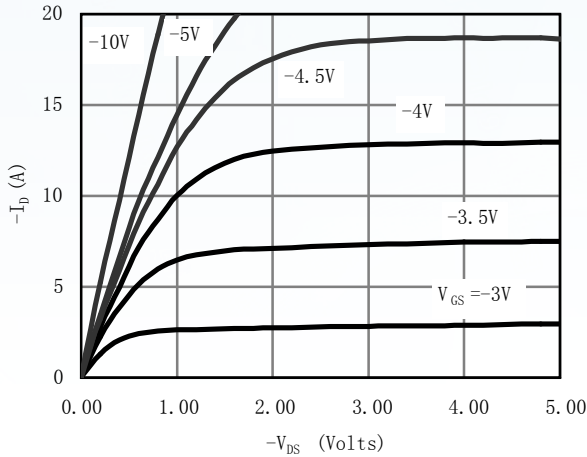


Figure 1: On-Region Characteristics

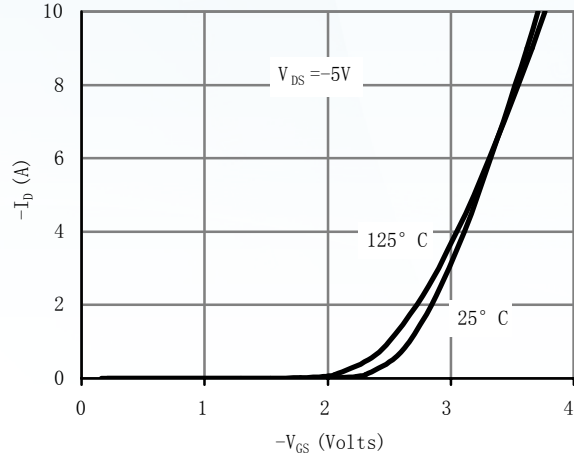


Figure 2: Transfer Characteristics

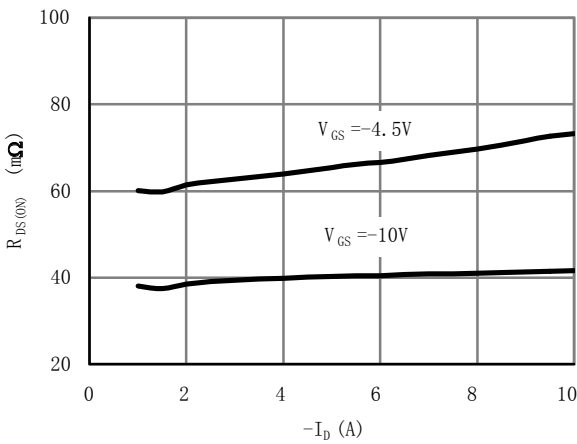


Figure 3: On-Resistance vs. Drain Current and Gate Voltage

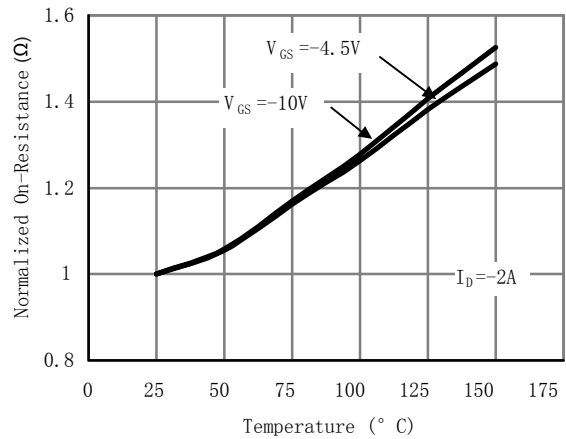


Figure 4: On-Resistance vs. Junction Temperature

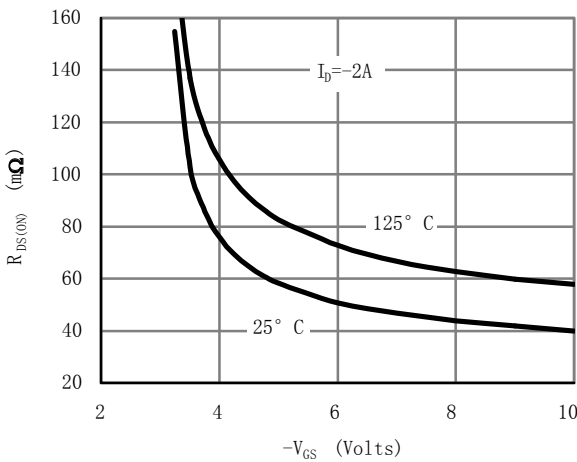


Figure 5: On-Resistance vs. Gate-Source Voltage

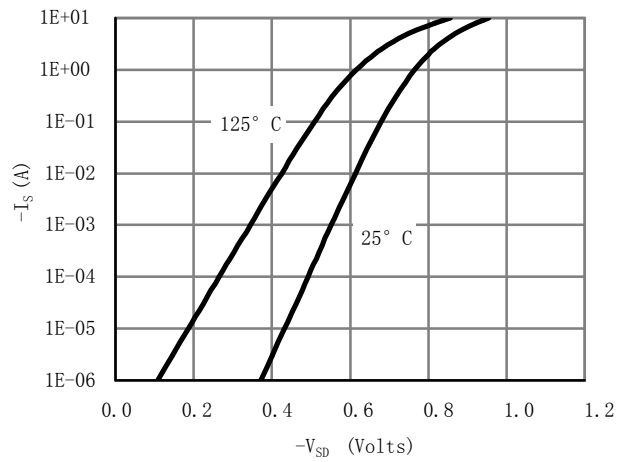


Figure 6: Body-Diode Characteristics

■ Typical Characteristics

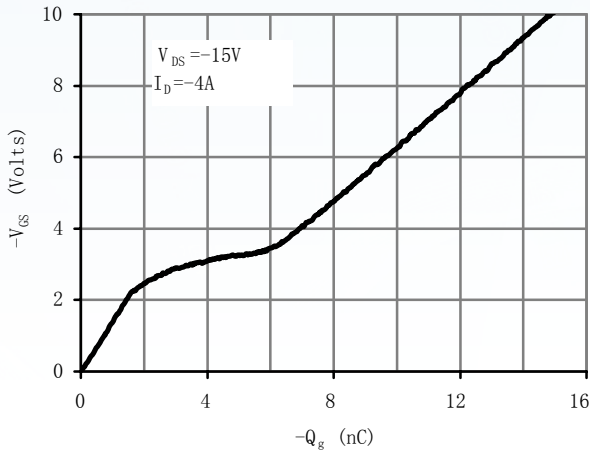


Figure 7: Gate-Charge Characteristics

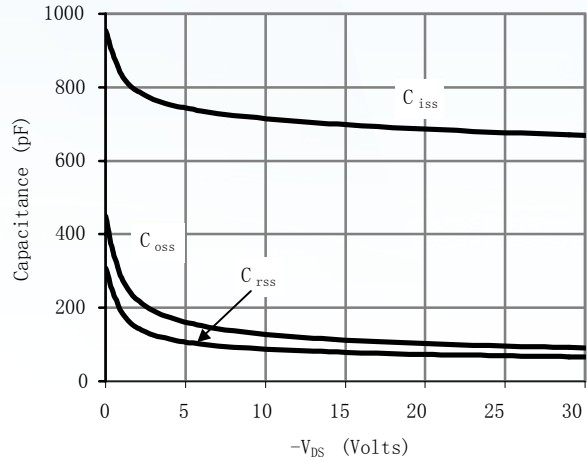


Figure 8: Capacitance Characteristics

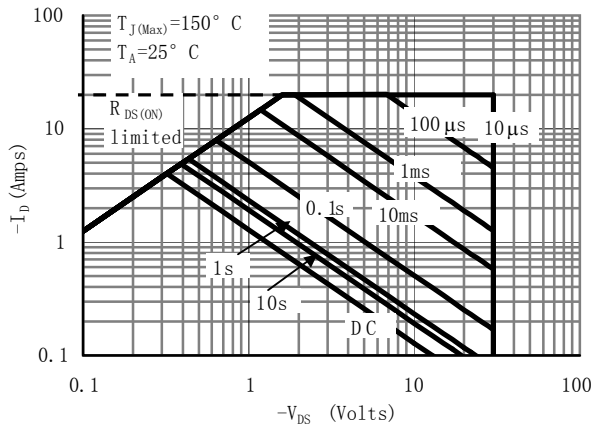


Figure 9: Maximum Forward Biased Safe Operating Area (Note E)

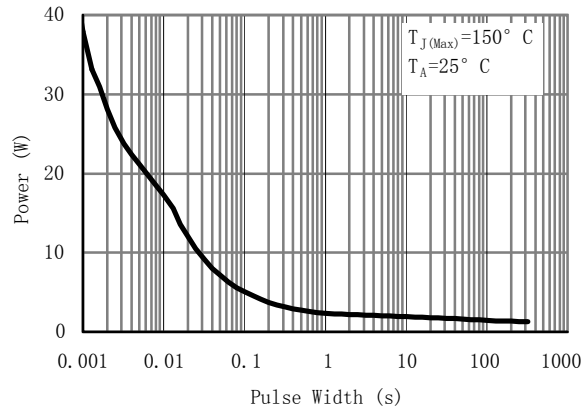


Figure 10: Single Pulse Power Rating Junction-to-Ambient (Note E)

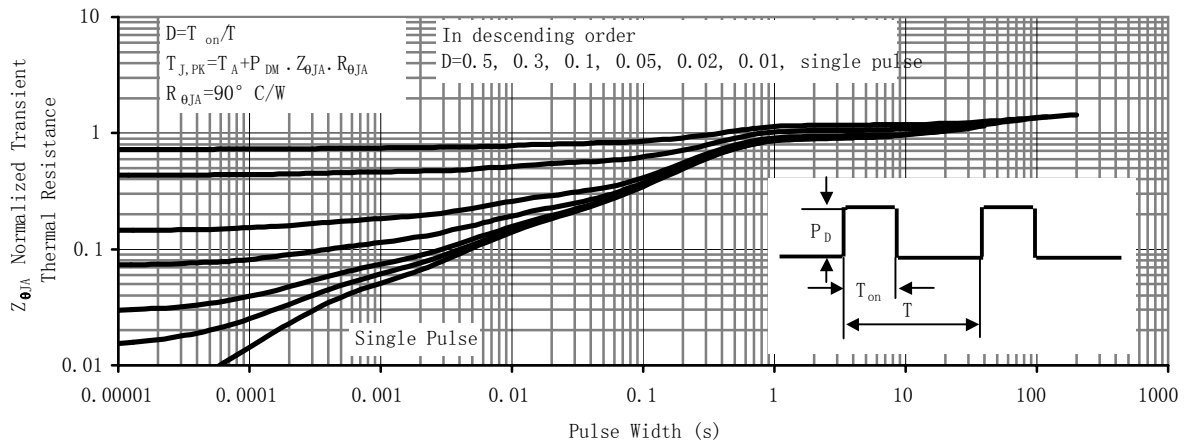
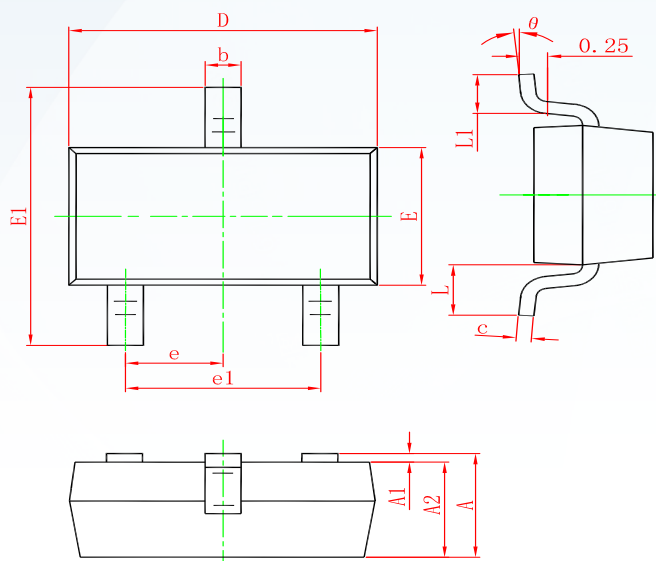


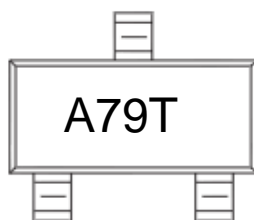
Figure 11: Normalized Maximum Transient Thermal Impedance

### 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
theta	0°	8°	0°	8°

### Marking



### Ordering information

Order code	Package	Baseqty	Deliverymode
AO3407A	SOT-23	3000	Tape and reel

## Disclaimer

EVVOSEMI ("EVVO") reserves the right to make corrections, enhancements, improvements, and other changes to its products and services at any time, and to discontinue any product or service without notice.

EVVO warrants the performance of its hardware products to the specifications applicable at the time of sale in accordance with its standard warranty. Testing and other quality control techniques are used as deemed necessary by EVVO to support this warranty. Except where mandated by government requirements, testing of all parameters of each product is not necessarily performed.

Customers should obtain and confirm the latest product information and specifications before final design, purchase, or use. EVVO makes no warranty, representation, or guarantee regarding the suitability of its products for any particular purpose, nor does EVVO assume any liability for application assistance or customer product design. EVVO does not warrant or accept any liability for products that are purchased or used for any unintended or unauthorized application.

EVVO products are not authorized for use as critical components in life support devices or systems without the express written approval of EVVOSEMI.

The EVVO logo and EVVOSEMI are trademarks of EVVOSEMI or its subsidiaries in relevant jurisdictions. EVVO reserves the right to make changes without further notice to any products herein.