

EVVOSEMI[®]

THINK CHANGE DO



ESD



TVS



MOS



LDO



Diode



Sensor



DC-DC

Product Specification

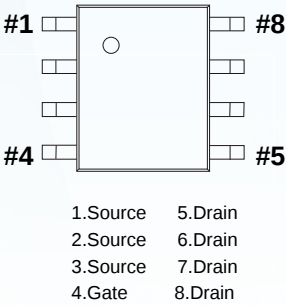
▶ Domestic	Part Number	AO4407
▶ Overseas	Part Number	AO4407
▶ Equivalent	Part Number	AO4407

EV is the abbreviation of name EVVO

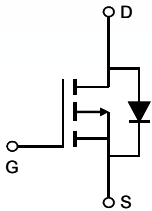
■ P-Channel MOSFET

■ Features

- $V_{DS} (V) \approx -30V$
- $I_D \approx -12 A (V_{GS} \approx -20V)$
- $R_{DS(ON)} < 13m\Omega (V_{GS} \approx -20V)$
- $R_{DS(ON)} < 14m\Omega (V_{GS} \approx -10V)$
- $R_{DS(ON)} < 30m\Omega (V_{GS} \approx -5V)$



■ Simplified outline(SOP-8)



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

Parameter		Symbol	Rating	Unit
Drain-Source Voltage		V_{DS}	-30	V
Gate-Source Voltage		V_{GS}	± 25	
Continuous Drain Current	$T_A=25^{\circ}C$	I_D	-12	A
	$T_A=70^{\circ}C$		-10	
Pulsed Drain Current		I_{DM}	-60	
Avalanche Current		I_{AS}, I_{AR}	26	
Power Dissipation	$T_A=25^{\circ}C$	P_D	3.1	W
	$T_A=70^{\circ}C$		2	
Avalanche energy	$L=0.3mH$	E_{AS}, E_{AR}	101	mJ
Thermal Resistance.Junction- to-Ambient	$t \leq 10s$	R_{thJA}	40	$^{\circ}C/W$
	Steady-State		75	
Thermal Resistance.Junction- to-Case	Steady-State	R_{thJC}	24	
Junction Temperature		T_J	150	$^{\circ}C$
Junction 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 _{DSS}	I _D =-250 μA, V _{GS} =0V	-30			V
Zero Gate Voltage Drain Current	I _{DSS}	V _{DS} =-30V, V _{GS} =0V			-1	μA
		V _{DS} =-30V, V _{GS} =0V, T _J =55°C			-5	
Gate-Body leakage current	I _{GSS}	V _{DS} =0V, V _{GS} =±25V			±100	nA
Gate Threshold Voltage	V _{GS(th)}	V _{DS} =V _{GS} I _D =-250 μA	-1.7		-2.8	V
Static Drain-Source On-Resistance	R _{DS(on)}	V _{GS} =-20V, I _D =-12A			13	mΩ
		V _{GS} =-10V, I _D =-12A			14	
		V _{GS} =-10V, I _D =-12A T _J =125°C			19	
		V _{GS} =-5V, I _D =-7A			30	
On state drain current	I _{D(ON)}	V _{GS} =-10V, V _{DS} =-5V	-60			A
Forward Transconductance	g _{FS}	V _{DS} =-5V, I _D =-10.5A		27		S
Input Capacitance	C _{iss}	V _{GS} =0V, V _{DS} =-15V, f=1MHz		2060	2600	pF
Output Capacitance	C _{oss}			370		
Reverse Transfer Capacitance	C _{rss}			295		
Gate resistance	R _g	V _{GS} =0V, V _{DS} =0V, f=1MHz	1.2	2.4	3.6	Ω
Total Gate Charge	Q _g	V _{GS} =-10V, V _{DS} =-15V, I _D =-12A	24	30	36	nC
Gate Source Charge	Q _{gs}			4.6		
Gate Drain Charge	Q _{gd}			10		
Turn-On DelayTime	t _{d(on)}	V _{GS} =-10V, V _{DS} =-15V, R _L =1.25Ω, R _G =3Ω		11		ns
Turn-On Rise Time	t _r			9.4		
Turn-Off DelayTime	t _{d(off)}			24		
Turn-Off Fall Time	t _f			12		
Body Diode Reverse Recovery Time	t _{rr}	I _F =-12A, dI/dt=100A/μs		30	40	nC
Body Diode Reverse Recovery Charge	Q _{rr}			22		
Maximum Body-Diode Continuous Current	I _S				-4	A
Diode Forward Voltage	V _{SD}	I _S =-1A, V _{GS} =0V			-1	V

Typical Characteristics

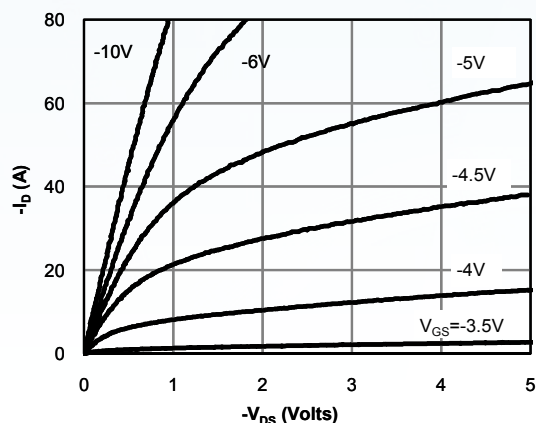


Fig 1: On-Region Characteristics (Note E)

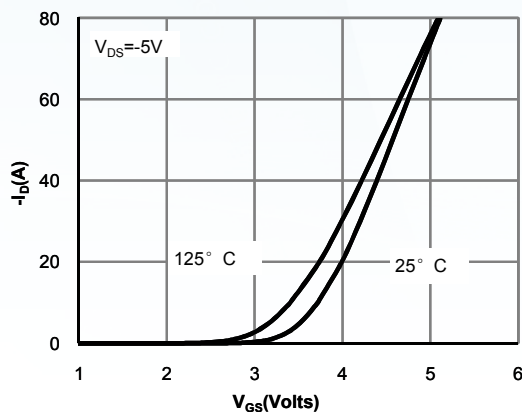


Figure 2: Transfer Characteristics (Note E)

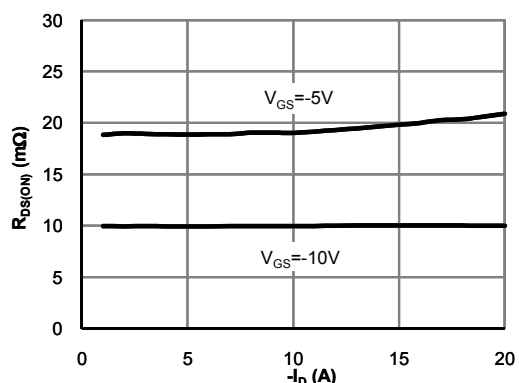


Figure 3: On-Resistance vs. Drain Current and Gate Voltage (Note E)

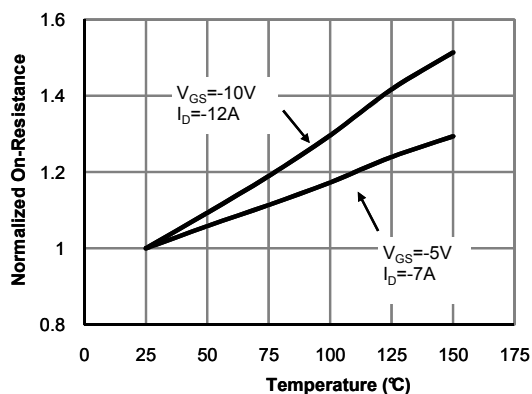


Figure 4: On-Resistance vs. Junction Temperature (Note E)

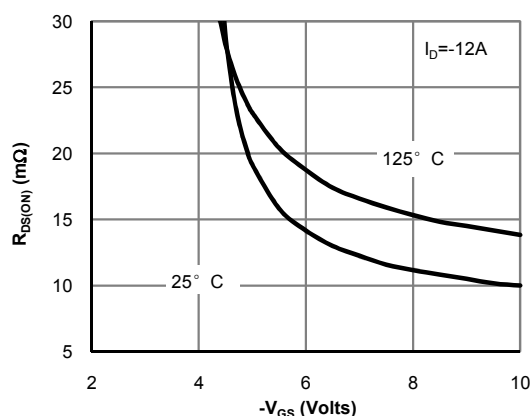


Figure 5: On-Resistance vs. Gate-Source Voltage (Note E)

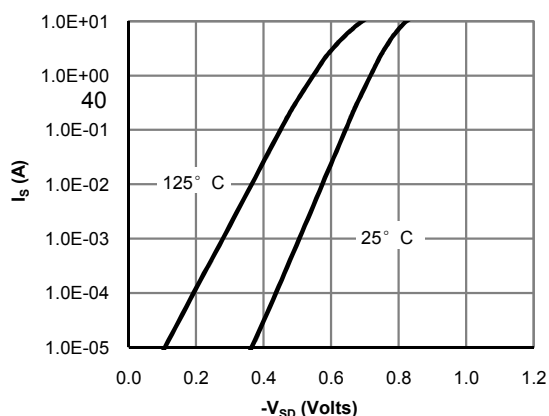
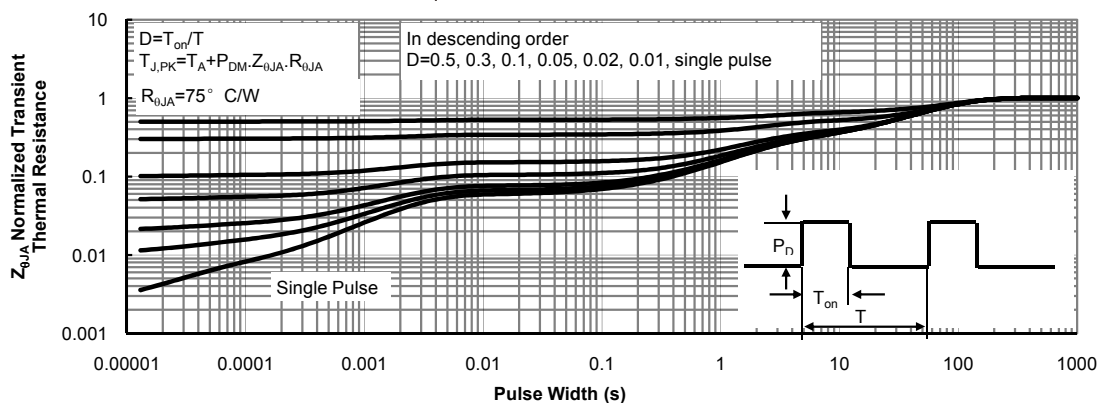
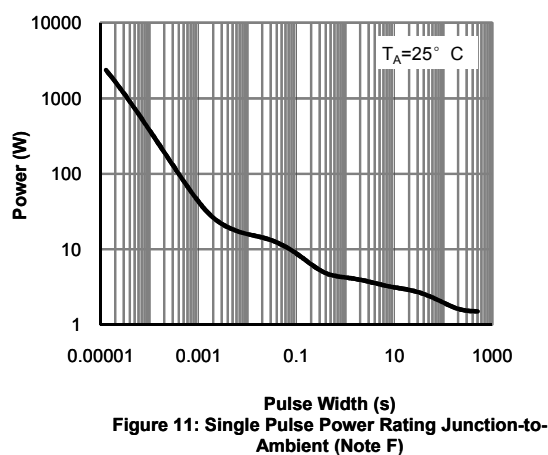
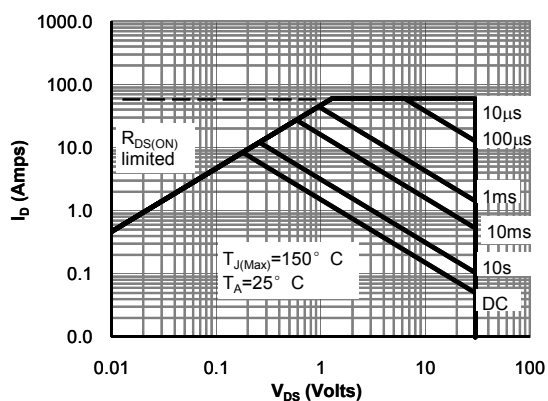
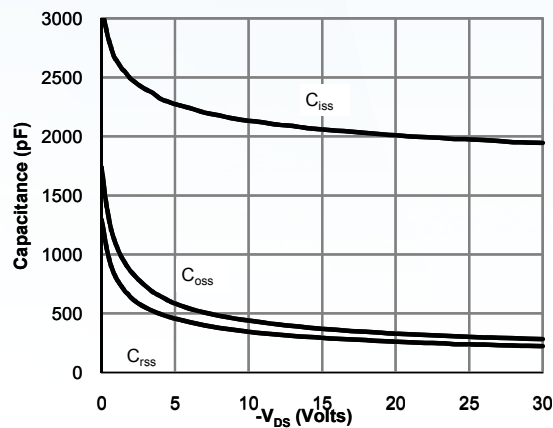
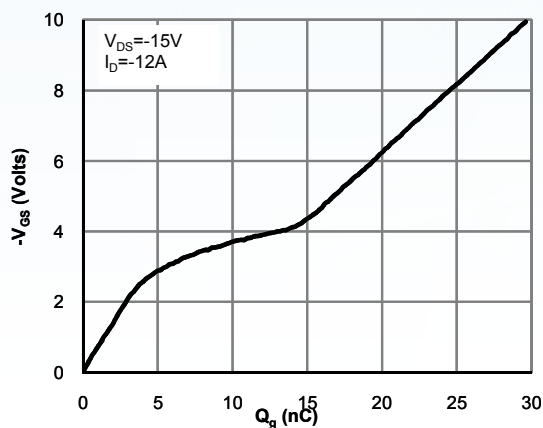
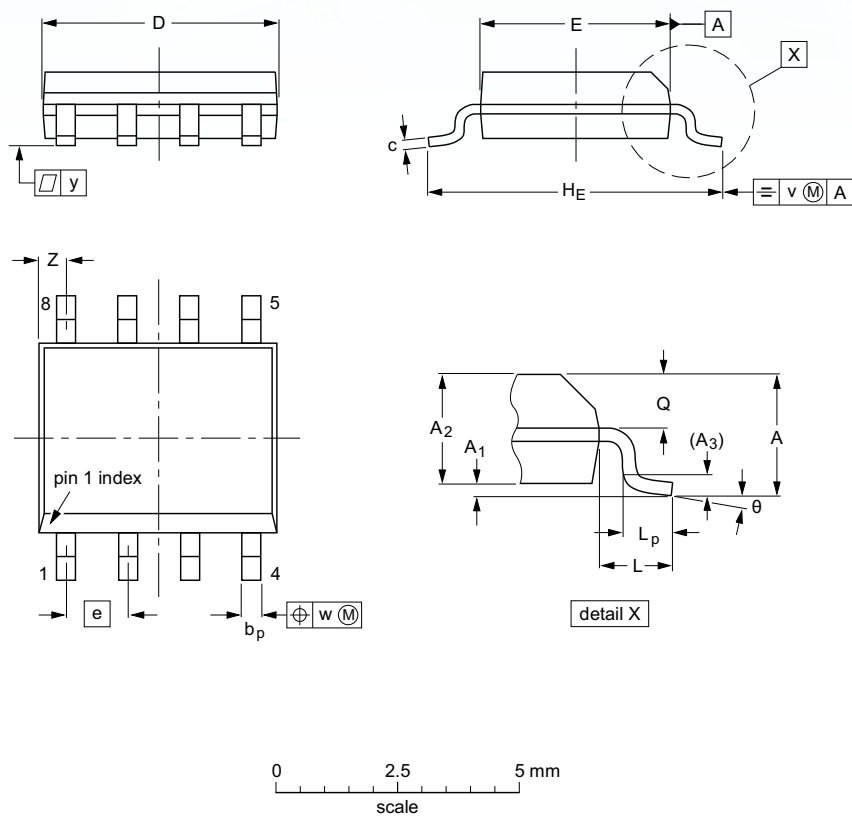


Figure 6: Body-Diode Characteristics (Note E)

■ Typical Characteristics



■ SOP-8



DIMENSIONS (inch dimensions are derived from the original mm dimensions)

UNIT	A max.	A ₁	A ₂	A ₃	b _p	c	D ⁽¹⁾	E ⁽²⁾	e	H _E	L	L _p	Q	v	w	y	Z ⁽¹⁾	θ
mm	1.75	0.25 0.10	1.45 1.25	0.25	0.49 0.36	0.25 0.19	5.0 4.8	4.0 3.8	1.27	6.2 5.8	1.05	1.0 0.4	0.7 0.6	0.25	0.25	0.1	0.7 0.3	8° 0°
inches	0.069	0.010 0.004	0.057 0.049	0.01	0.019 0.014	0.0100 0.0075	0.20 0.19	0.16 0.15	0.05	0.244 0.228	0.041	0.039 0.016	0.028 0.024	0.01	0.01	0.004	0.028 0.012	

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