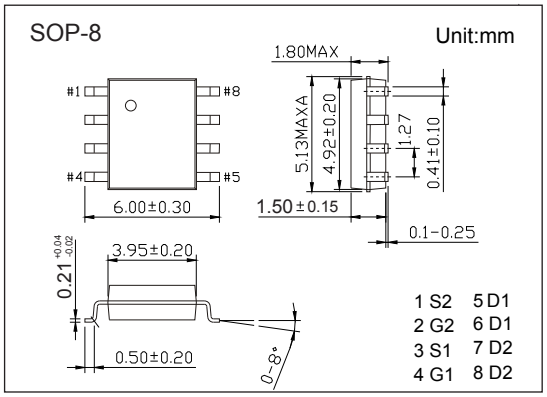
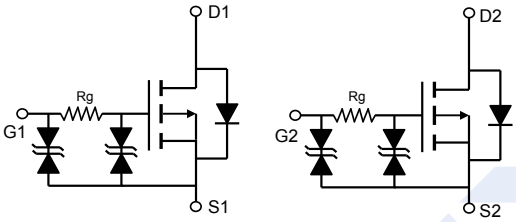
Dual P-Channel MOSFET
AO4821-HF (KO4821-HF)



■ Features

- $V_{DS\ (V)}$ = -12V
- I_D = -9 A (V_{GS} = -4.5V)
- $R_{DS(ON)}$ < 19mΩ (V_{GS} = -4.5V)
- $R_{DS(ON)}$ < 24mΩ (V_{GS} = -2.5V)
- $R_{DS(ON)}$ < 30mΩ (V_{GS} = -1.8V)
- Pb−Free Package May be Available. The G−Suffix Denotes a Pb−Free Lead Finish



■ Absolute Maximum Ratings Ta = 25℃

Parameter		Symbol	Rating	Unit
Drain-Source Voltage		V_{DS}	-12	V
Gate-Source Voltage		V_{GS}	±8	
Continuous Drain Current	T_A=25℃	I_D	-9	A
	T_A=70℃		-7	
Pulsed Drain Current		I_{DM}	-60	
Power Dissipation	T_A=25℃	P_D	2	W
	T_A=70℃		1.28	
Thermal Resistance.Junction- to-Ambient	t ≤ 10s	R_{thJA}	62.5	℃/W
	Steady-State		90	
Thermal Resistance.Junction- to-Lead		R_{thJL}	40	
Junction Temperature		T_J	150	℃
Storage Temperature Range		T_{stg}	-55 to 150	

Dual P-Channel MOSFET
AO4821-HF (KO4821-HF)

■ Electrical Characteristics Ta = 25℃

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Drain-Source Breakdown Voltage	V_{DSS}	I_D=-250μA, V_{GS}=0V	-12			V
Zero Gate Voltage Drain Current	I_{DSS}	V_{DS}=-12V, V_{GS}=0V			-1	uA
		V_{DS}=-12V, V_{GS}=0V, T_J=55℃			-5	
Gate-Body Leakage Current	I_{GSS}	V_{DS}=0V, V_{GS}=±8V			±10	uA
Gate Threshold Voltage	$V_{GS(th)}$	V_{DS}=V_{GS} , I_D=-250uA	-0.35		-0.85	V
Static Drain-Source On-Resistance	$R_{DS(ON)}$	V_{GS}=-4.5V, I_D=-9A			19	mΩ
		V_{GS}=-4.5V, I_D=-9A T_J=125℃			27	
		V_{GS}=-2.5V, I_D=-8A			24	
		V_{GS}=-1.8V, I_D=-6A			30	
On State Drain Current	$I_{D(ON)}$	V_{GS}=-4.5V, V_{DS}=-5V	-60			A
Forward Transconductance	g_{FS}	V_{DS}=-5V, I_D=-9A		45		S
Input Capacitance	C_{iss}	V_{GS}=0V, V_{DS}=-6V, f=1MHz	1390		2100	pF
Output Capacitance	C_{oss}		230		435	
Reverse Transfer Capacitance	C_{rss}		120		280	
Gate Resistance	R_g	V_{GS}=0V, V_{DS}=0V, f=1MHz	0.9		1.7	KΩ
Total Gate Charge	Q_g	V_{GS}=-4.5V, V_{DS}=-6V, I_D=-9A	15		23	nC
Gate Source Charge	Q_{gs}		3.6		5.4	
Gate Drain Charge	Q_{gd}		3		7.4	
Turn-On DelayTime	$t_{d(on)}$	V_{GS}=-4.5V, V_{DS}=-6V, R_L=0.67Ω, R_{GEN}=3Ω		240		ns
Turn-On Rise Time	t_r			580		
Turn-Off DelayTime	$t_{d(off)}$			7		us
Turn-Off Fall Time	t_f			4.2		
Body Diode Reverse Recovery Time	t_{rr}	I_F= -9A, dI/dt= 500A/us	18		26	ns
Body Diode Reverse Recovery Charge	Q_{rr}		14		20	nC
Maximum Body-Diode Continuous Current	I_S				-3	A
Diode Forward Voltage	V_{SD}	I_S=-1A,V_{GS}=0V			-1	V

Note.The static characteristics in Figures 1 to 6 are obtained using <300us pulses, duty cycle 0.5% max.

■ Marking

Marking	4821 KA**** F

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AO4821-HF (KO4821-HF)

■ Typical Characterisitics

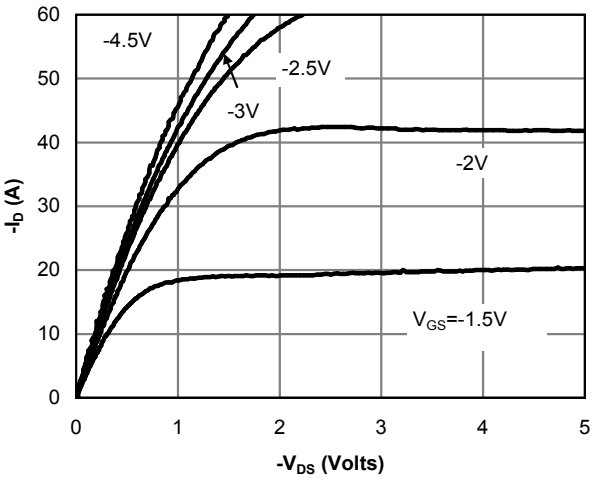

Fig 1: On-Region Characteristics (Note E)

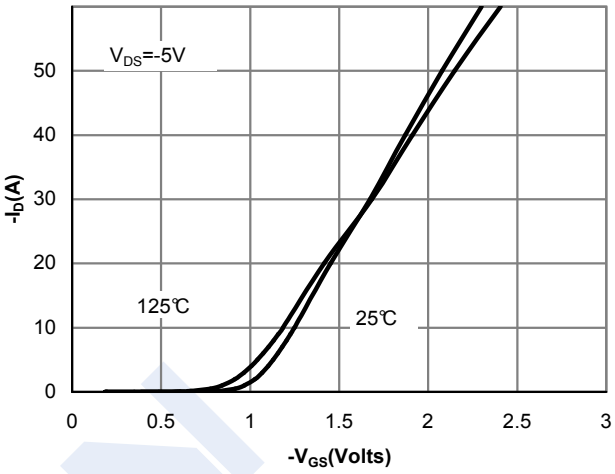

Figure 2: Transfer Characteristics (Note E)

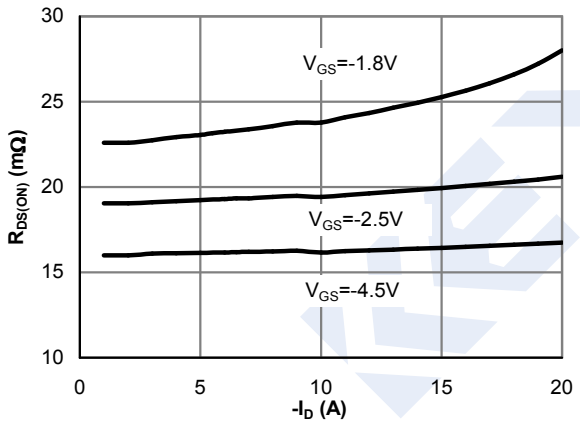

Figure 3: On-Resistance vs. Drain Current and Gate Voltage (Note E)

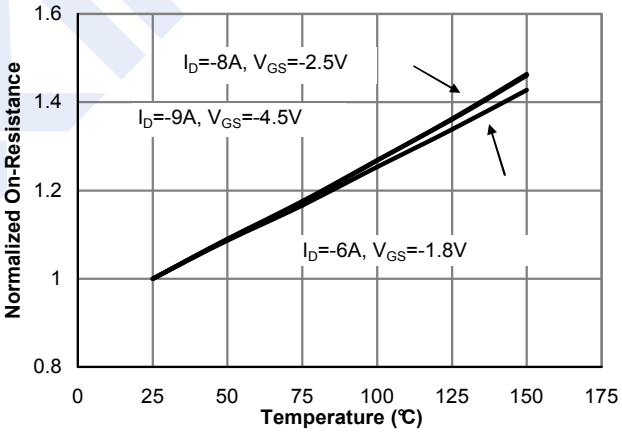

Figure 4: On-Resistance vs. Junction Temperature (Note E)

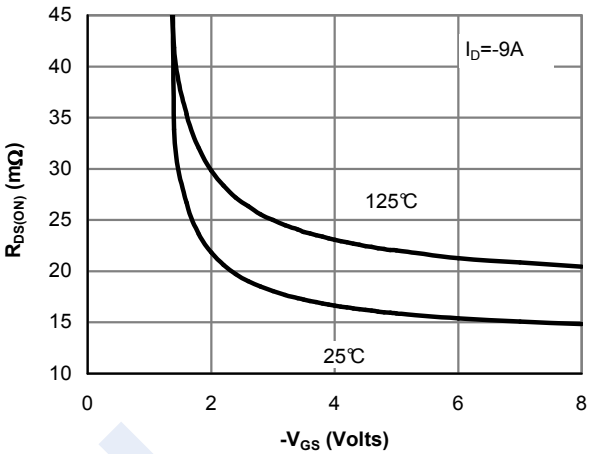

Figure 5: On-Resistance vs. Gate-Source Voltage (Note E)

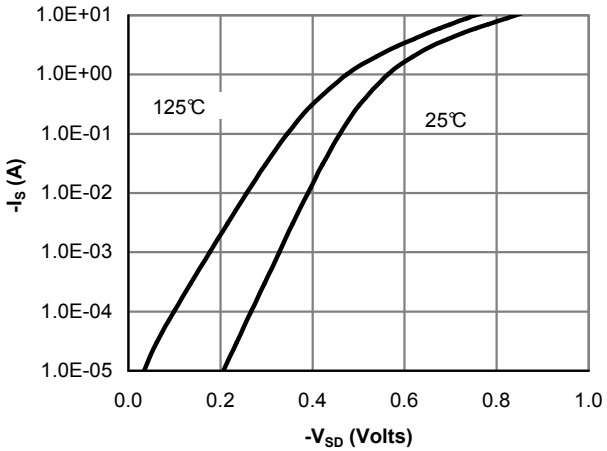

Figure 6: Body-Diode Characteristics (Note E)

Dual P-Channel MOSFET
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■ Typical Characterisitics

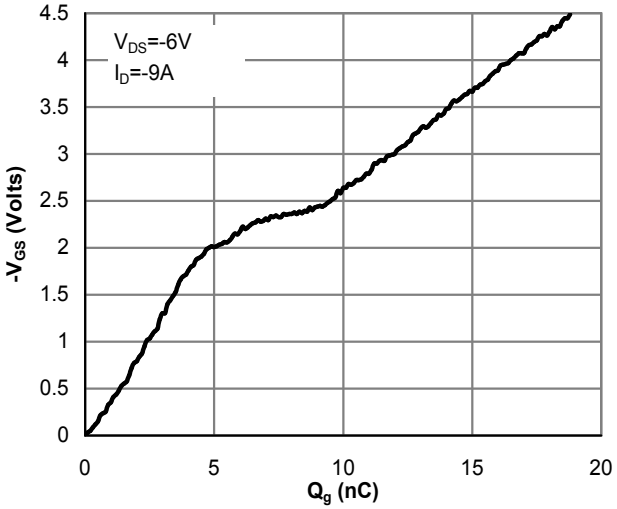

Figure 7: Gate-Charge Characteristics

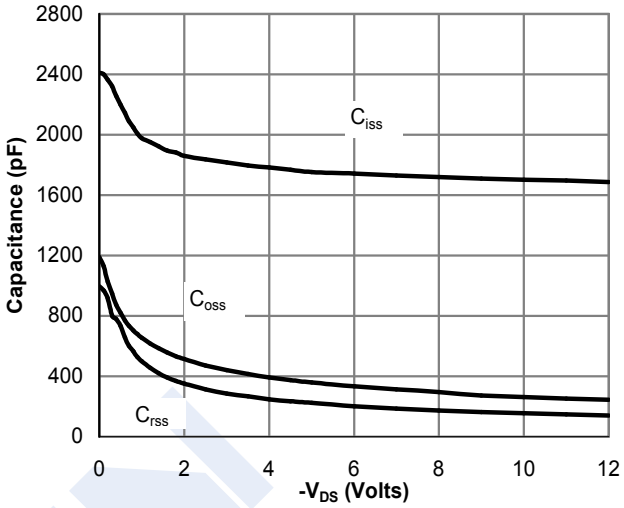

Figure 8: Capacitance Characteristics

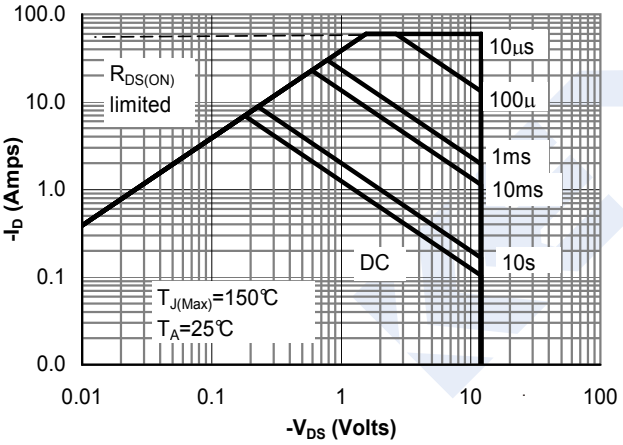

Figure 9: Maximum Forward Biased Safe Operating Area (Note F)

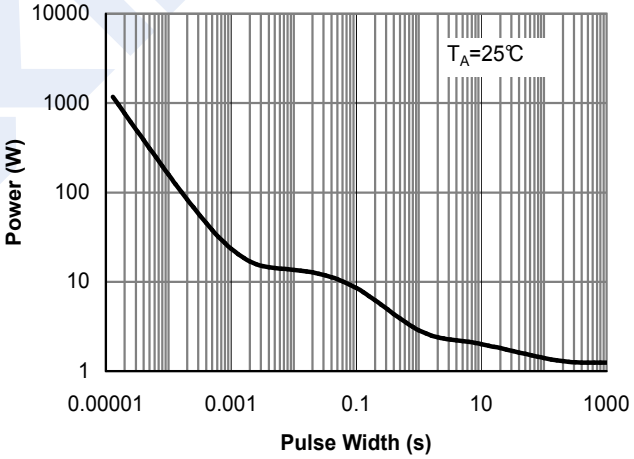

Figure 10: Single Pulse Power Rating Junction-to-Ambient (Note F)

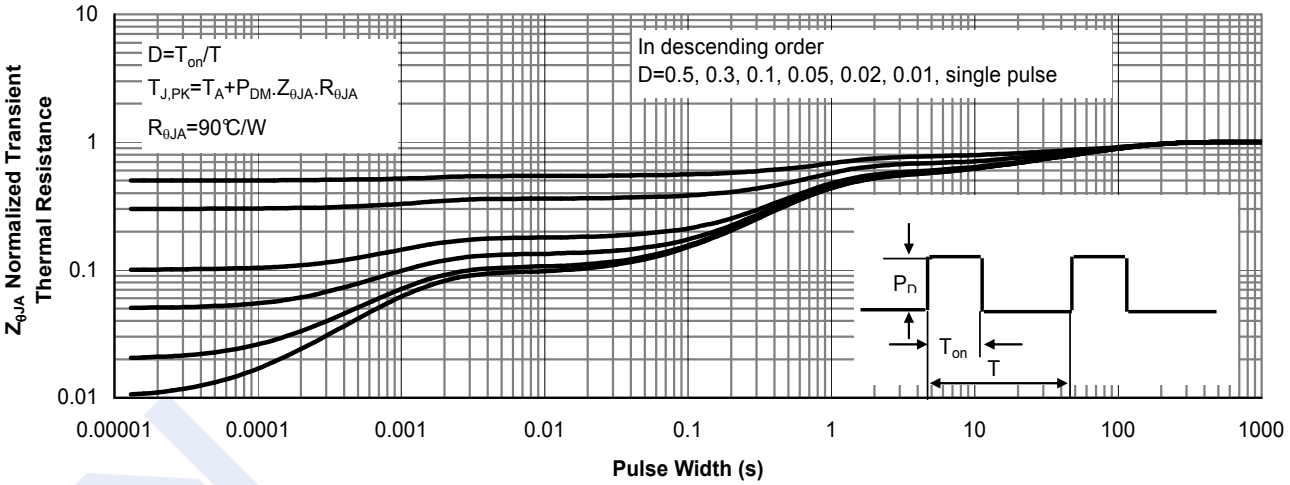

Figure 11: Normalized Maximum Transient Thermal Impedance (Note F)