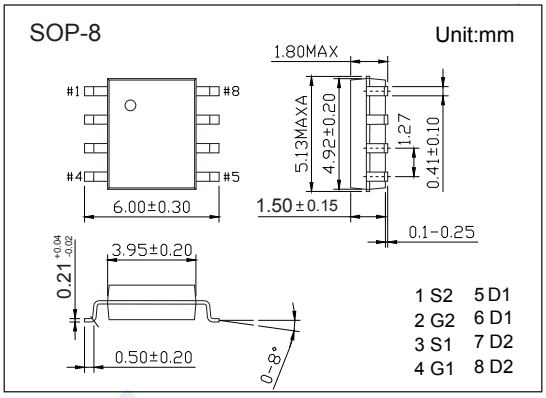
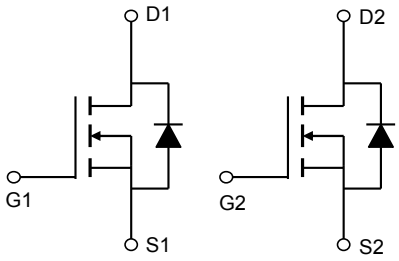
Dual N-Channel MOSFET

AO4884 (KO4884)



■ Features

- $V_{DS\ (V)}$ = 40V
- I_D = 10A (V_{GS} = 10V)
- $R_{DS(ON)}$ < 13mΩ (V_{GS} = 10V)
- $R_{DS(ON)}$ < 16mΩ (V_{GS} = 4.5V)



■ Absolute Maximum Ratings Ta = 25℃

Parameter		Symbol	Rating	Unit
Drain-Source Voltage		V_{DS}	40	V
Gate-Source Voltage		V_{GS}	±20	
Continuous Drain Current	T_A=25℃	I_D	10	A
	T_A=70℃		8	
Pulsed Drain Current		I_{DM}	50	
Avalanche Current		I_{AS}, I_{AR}	35	
Avalanche Energy	L=0.1mH	E_{AS}, E_{AR}	61	mJ
Power Dissipation	T_A=25℃	P_D	2	W
	T_A=70℃		1.3	
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	

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■ Electrical Characteristics Ta = 25℃

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Drain-Source Breakdown Voltage	V_{DSS}	I_D=250μA, V_{GS}=0V	40			V
Zero Gate Voltage Drain Current	I_{DSS}	V_{DS}=40V, V_{GS}=0V			1	uA
		V_{DS}=40V, V_{GS}=0V, T_J=55℃			5	
Gate-Body Leakage Current	I_{GSS}	V_{DS}=0V, V_{GS}=±20V			±100	nA
Gate Threshold Voltage	$V_{GS(th)}$	V_{DS}=V_{GS} , I_D=250uA	1.55		2.7	V
Static Drain-Source On-Resistance	$R_{DS(ON)}$	V_{GS}=10V, I_D=10A			13	mΩ
		V_{GS}=10V, I_D=10A T_J=125℃			20	
		V_{GS}=4.5V, I_D=10A			16	
On State Drain Current	$I_{D(ON)}$	V_{GS}=10V, V_{DS}=5V	50			A
Forward Transconductance	g_{FS}	V_{DS}=5V, I_D=10A		50		S
Input Capacitance	C_{iss}	V_{GS}=0V, V_{DS}=20V, f=1MHz	1200		1950	pF
Output Capacitance	C_{oss}		150		280	
Reverse Transfer Capacitance	C_{rss}		80		190	
Gate Resistance	R_g	V_{GS}=0V, V_{DS}=0V, f=1MHz	1.7		5.3	Ω
Total Gate Charge (10V)	Q_g	V_{GS}=10V, V_{DS}=20V, I_D=10A	22		33	nC
Total Gate Charge (4.5V)			10		16	
Gate Source Charge	Q_{gs}		3.6		5.4	
Gate Drain Charge	Q_{gd}		3.8		9	
Turn-On DelayTime	$t_{d(on)}$	V_{GS}=10V, V_{DS}=20V, R_L=2Ω, R_{GEN}=3Ω		6.4		ns
Turn-On Rise Time	t_r			17.2		
Turn-Off DelayTime	$t_{d(off)}$			29.6		
Turn-Off Fall Time	t_f			16.8		
Body Diode Reverse Recovery Time	t_{rr}	I_F= 10A, dI/dt= 500A/us	9		17	
Body Diode Reverse Recovery Charge	Q_{rr}		25		45	nC
Maximum Body-Diode Continuous Current	I_S				2.5	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	4884 KA****

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■ Typical Characterisitics

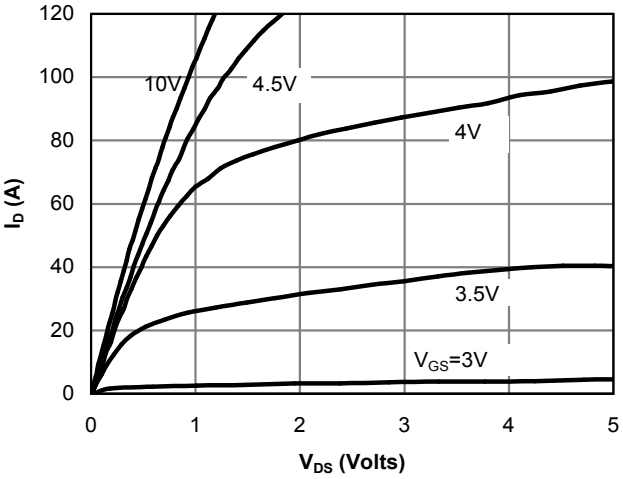

Fig 1: On-Region Characteristics (Note E)

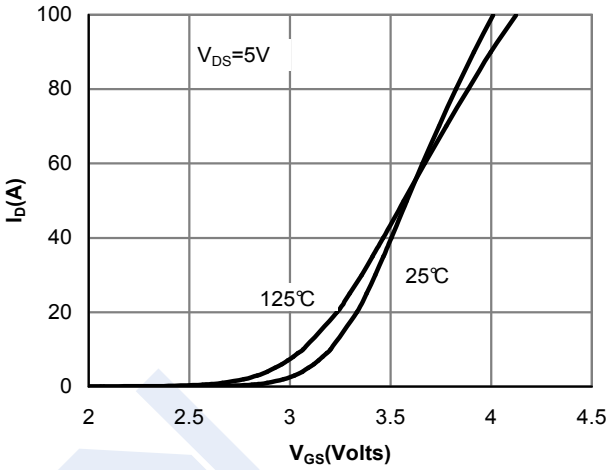

Figure 2: Transfer Characteristics (Note E)

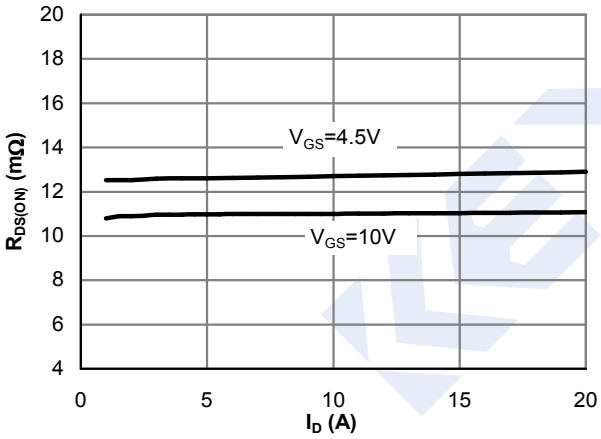

Figure 3: On-Resistance vs. Drain Current and Gate Voltage (Note E)

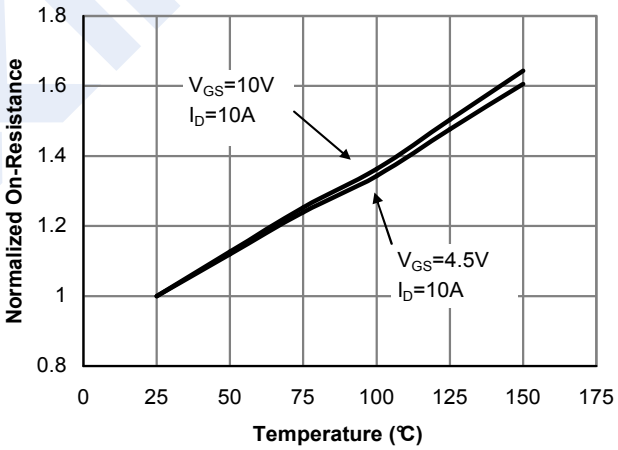

Figure 4: On-Resistance vs. Junction Temperature

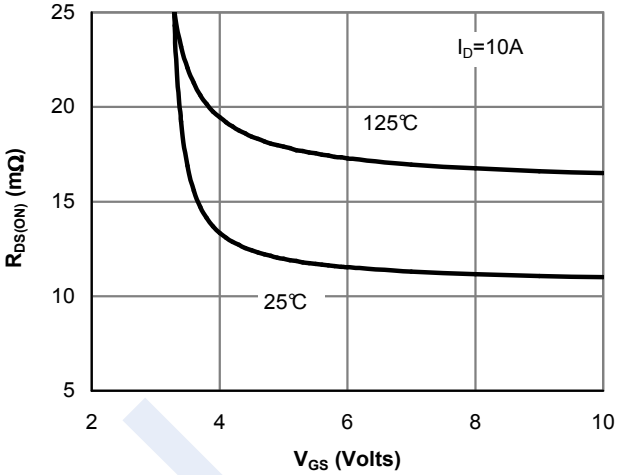

Figure 5: On-Resistance vs. Gate-Source Voltage

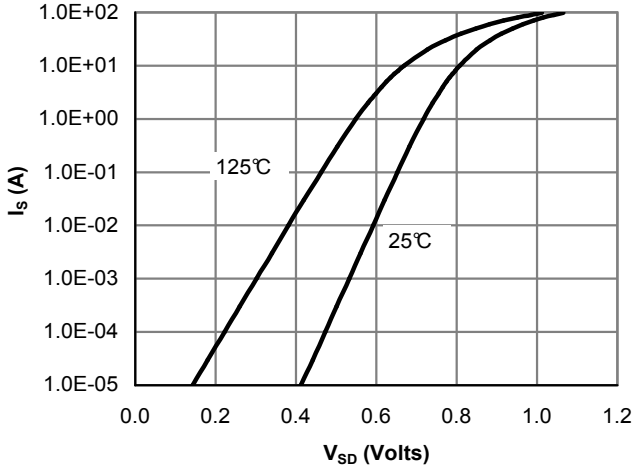

Figure 6: Body-Diode Characteristics (Note E)

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■ Typical Characterisitics

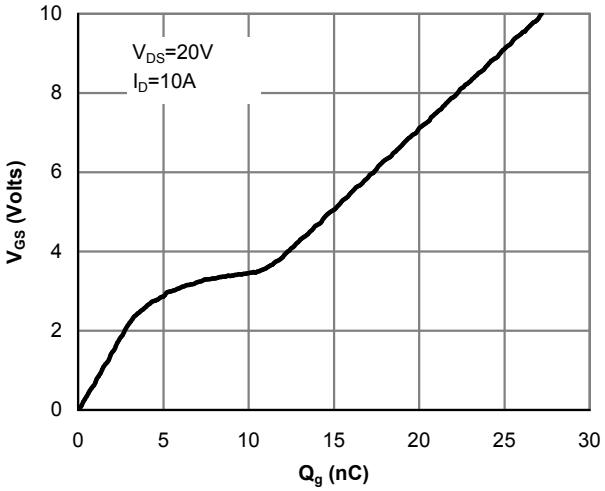

Figure 7: Gate-Charge Characteristics

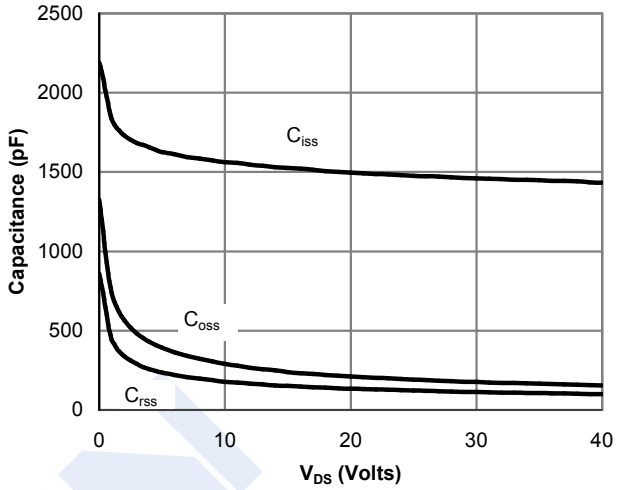

Figure 8: Capacitance Characteristics

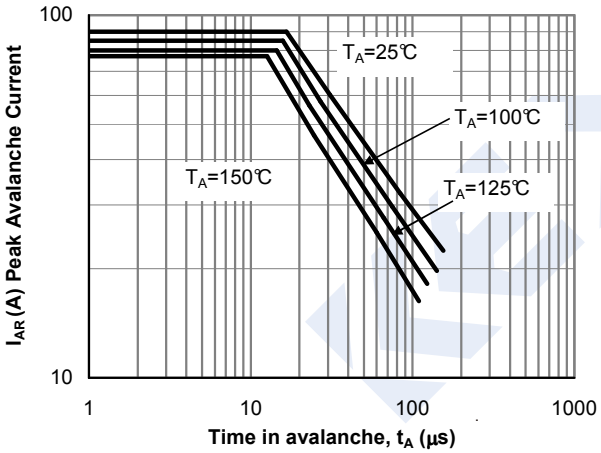

Figure 9: Single Pulse Avalanche capability

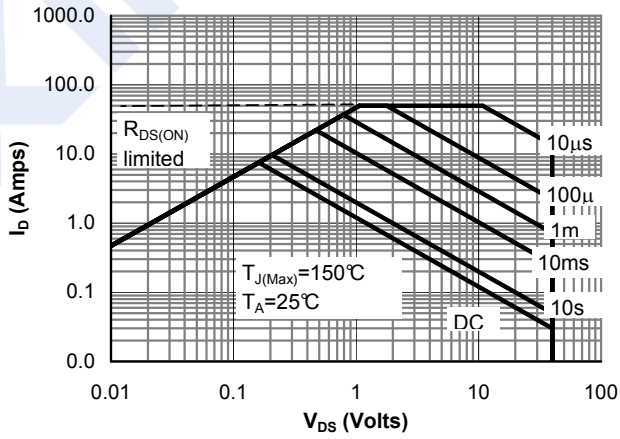

Figure 10: Maximum Forward Biased Safe Operating Area

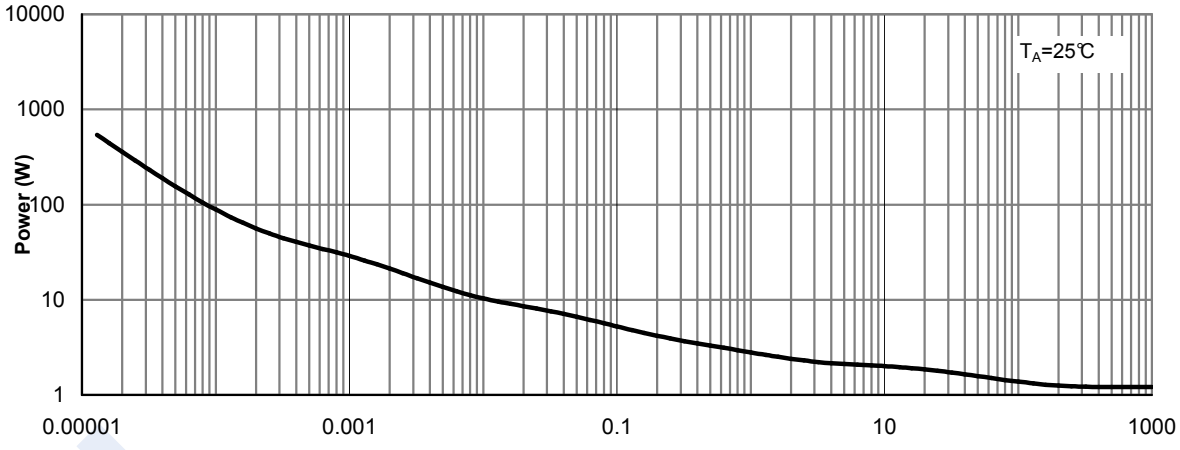

Figure 11: Single Pulse Power Rating Junction-to-Ambient

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■ Typical Characterisitics

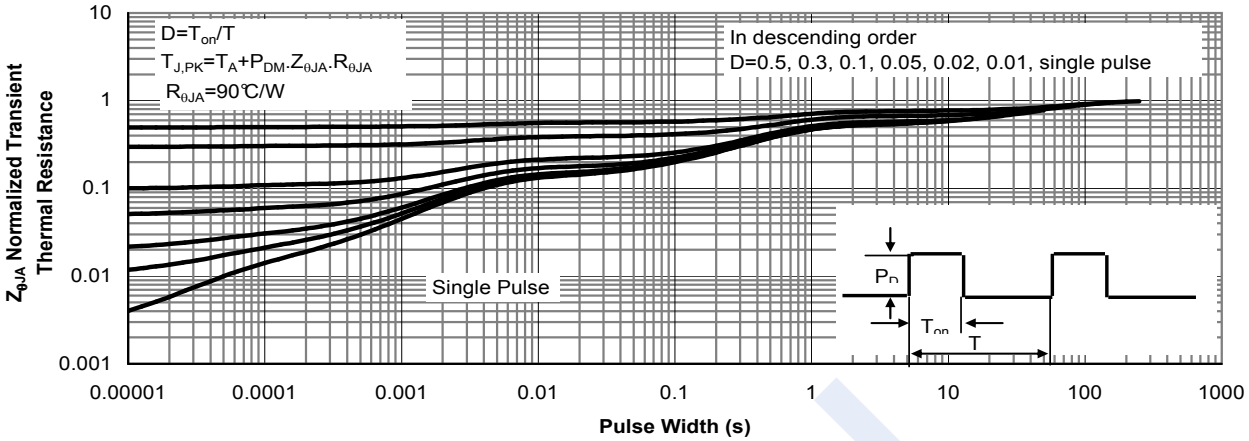

Figure 12: Normalized Maximum Transient Thermal Impedance (Note F)