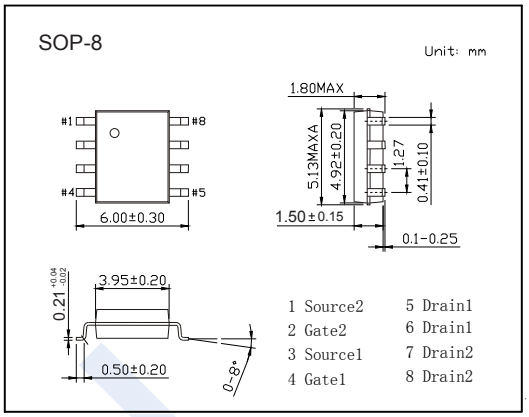
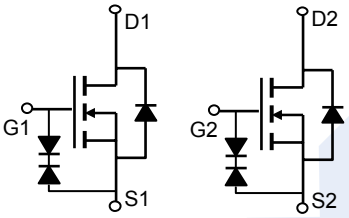
Dual N-Channel MOSFET

AO4806 (KO4806)

■ Features

- $V_{DS\ (V)}$ = 20V
- I_D = 9.4 A (V_{GS} = 10V)
- $R_{DS(ON)}$ < 14mΩ (V_{GS} = 10V)
- $R_{DS(ON)}$ < 15mΩ (V_{GS} = 4.5V)
- $R_{DS(ON)}$ < 21mΩ (V_{GS} = 2.5V)
- $R_{DS(ON)}$ < 30mΩ (V_{GS} = 1.8V)
- ESD Rating: 2000V HBM





■ Absolute Maximum Ratings Ta = 25℃

Parameter		Symbol	Rating	Unit
Drain-Source Voltage		V_{DS}	20	V
Gate-Source Voltage		V_{GS}	±12	
Continuous Drain Current	Ta=25℃	I_D	9.4	A
	Ta=70℃		7.5	
Pulsed Drain Current		I_{DM}	40	
Power Dissipation	Ta=25℃	P_D	2	W
	Ta=70℃		1.28	
Thermal Resistance.Junction- to-Ambient	t ≤ 10s	R_{thJA}	62.5	℃/W
	Steady-State		110	
Thermal Resistance.Junction- to-Case		R_{thJC}	40	
Junction Temperature		T_J	150	℃
Storage Temperature Range		T_{stg}	-55 to 150	

Dual N-Channel MOSFET

AO4806 (KO4806)

■ Electrical Characteristics Ta = 25℃

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Drain-Source Breakdown Voltage	V_{DSS}	I_D=250μA, V_{GS}=0V	20			V
Gate-Source Breakdown Voltage	V_{GSO}	I_{DG}=±250μA, V_{DS}=0V	±12			V
Zero Gate Voltage Drain Current	I_{DSS}	V_{DS}=16V, V_{GS}=0V			10	uA
		V_{DS}=16V, V_{GS}=0V, T_J=55℃			25	uA
Gate-Body Leakage Current	I_{GSS}	V_{DS}=0V, V_{GS}=±10V			±10	uA
Gate Threshold Voltage	$V_{GS(th)}$	V_{DS}=V_{GS}, I_D=250μA	0.5	0.75	1	V
Static Drain-Source On-Resistance	$R_{DS(ON)}$	V_{GS}=10V, I_D=9.4A		11	14	mΩ
		V_{GS}=10V, I_D=9.4A T_J=125℃		14.3	17	mΩ
		V_{GS}=4.5V, I_D=8A		12.6	16	mΩ
		V_{GS}=2.5V, I_D=6A		16.5	22	mΩ
		V_{GS}=1.8V, I_D=4A		23.4	30	mΩ
On State Drain Current	$I_{D(ON)}$	V_{GS}=4.5V, V_{DS}=5V	30			A
Forward Transconductance	g_{FS}	V_{DS}=5V, I_D=9.4A		37		S
Input Capacitance	C_{iss}	V_{GS}=0V, V_{DS}=10V, f=1MHz		1810		pF
Output Capacitance	C_{oss}			232		pF
Reverse Transfer Capacitance	C_{rss}			200		pF
Gate Resistance	R_g	V_{GS}=0V, V_{DS}=0V, f=1MHz		1.6		Ω
Total Gate Charge	Q_g	V_{GS}=4.5V, V_{DS}=10V, I_D=9.4A		17.9		nC
Gate Source Charge	Q_{gs}			1.5		nC
Gate Drain Charge	Q_{gd}			4.7		nC
Turn-On DelayTime	$t_{d(on)}$	V_{GS}=10V, V_{DS}=10V, R_L=1.1Ω, R_{GEN}=3Ω		3.3		ns
Turn-On Rise Time	t_r			5.9		ns
Turn-Off DelayTime	$t_{d(off)}$			44		ns
Turn-Off Fall Time	t_f			7.7		ns
Body Diode Reverse Recovery Time	t_{rr}	I_F= 9.4A, dI/dt= 100A/μs		22		ns
Body Diode Reverse Recovery Charge	Q_{rr}			8.6		nC
Maximum Body-Diode Continuous Current	I_S				3	A
Diode Forward Voltage	V_{SD}	I_S=1A,V_{GS}=0V		0.72	1	V

■ Marking

Marking	4806 KA****

Dual N-Channel MOSFET

AO4806 (KO4806)

■ Typical Characterisitics

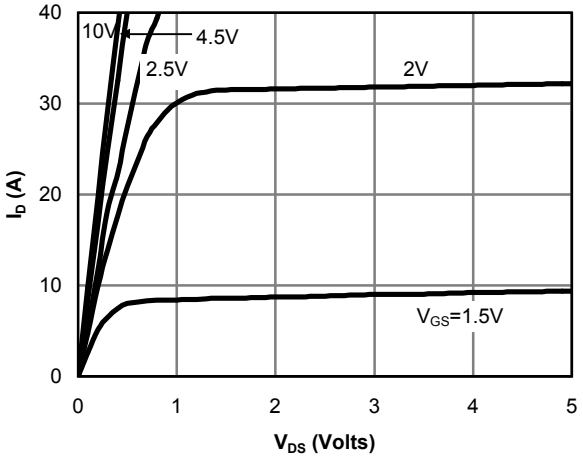


Fig 1: On-Region Characteristics

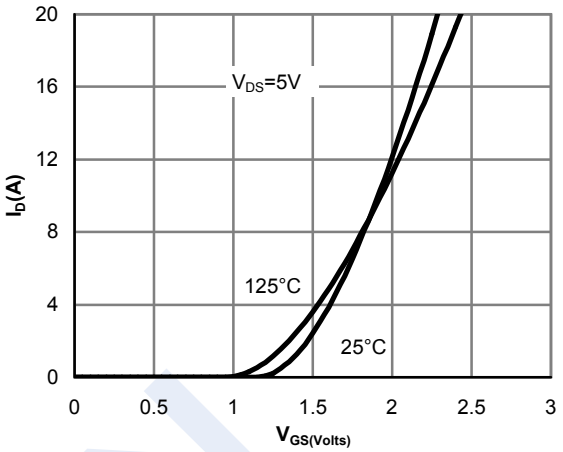


Figure 2: Transfer Characteristics

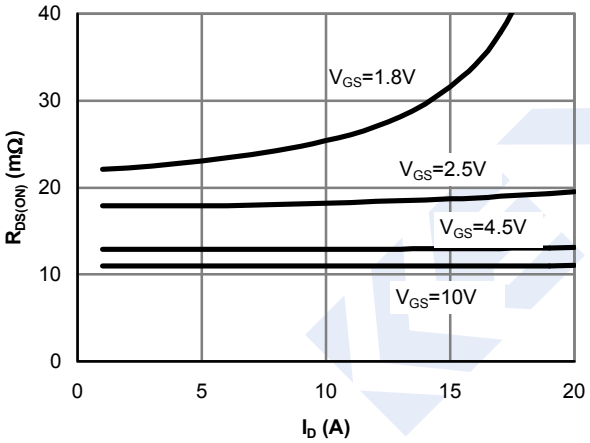


Figure 3: On-Resistance vs. Drain Current and Gate Voltage

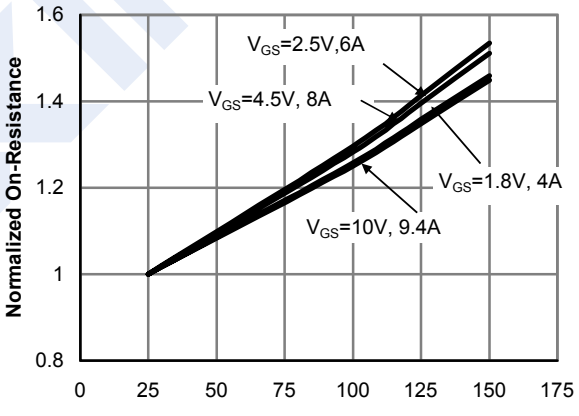


Figure 4: On-Resistance vs. Junction Temperature

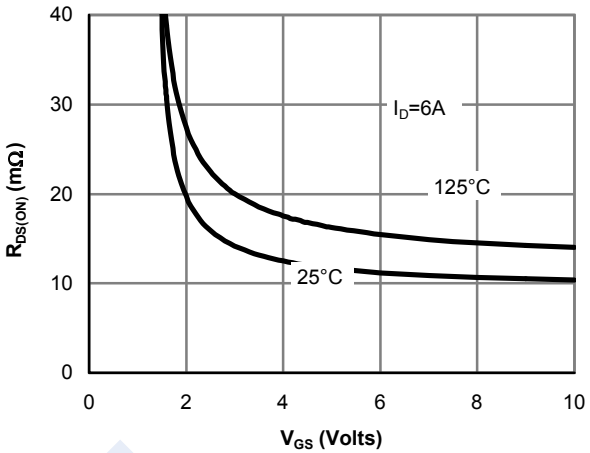


Figure 5: On-Resistance vs. Gate-Source Voltage

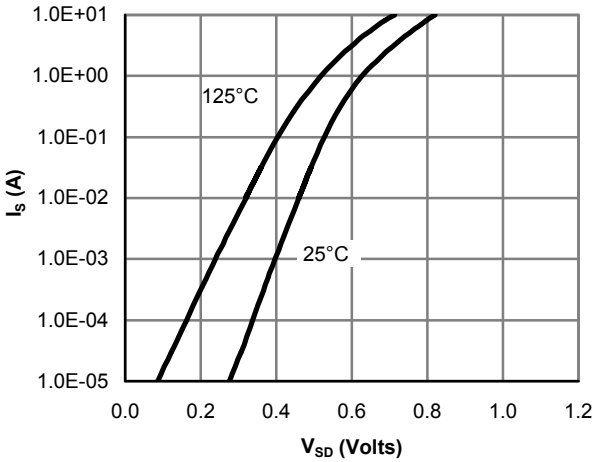


Figure 6: Body-Diode Characteristics

Dual N-Channel MOSFET

AO4806 (KO4806)

■ Typical Characterisitics

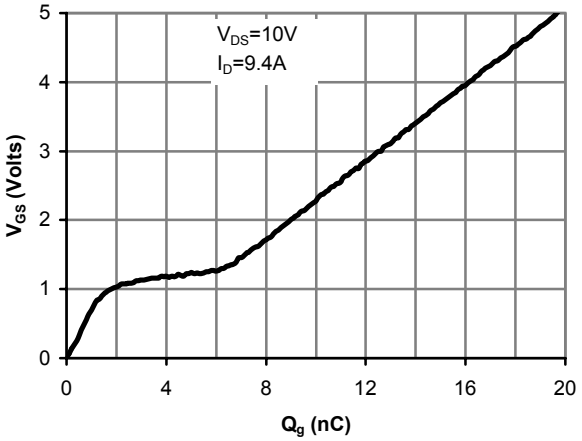


Figure 7: Gate-Charge Characteristics

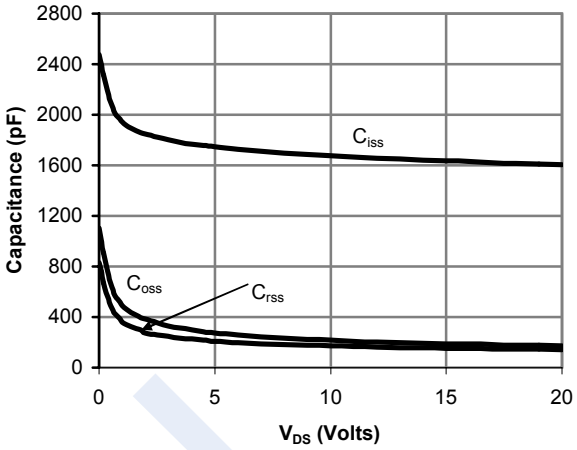


Figure 8: Capacitance Characteristics

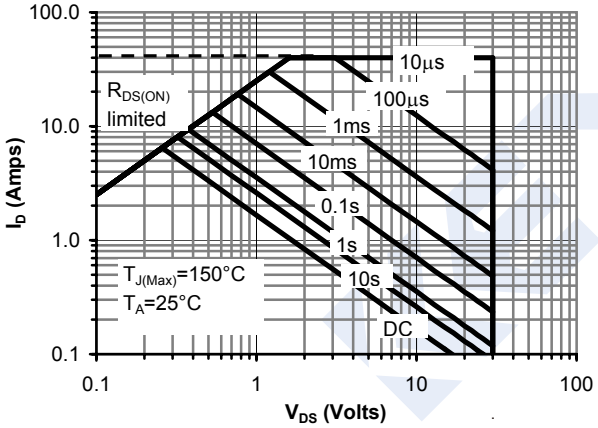


Figure 9: Maximum Forward Biased Safe Operating Area (Note E)

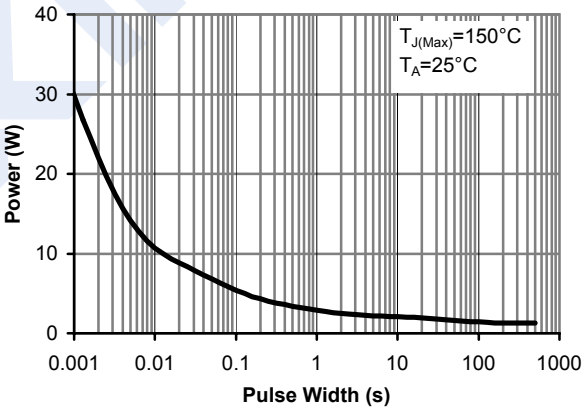


Figure 10: Single Pulse Power Rating Junction-to-Ambient (Note E)

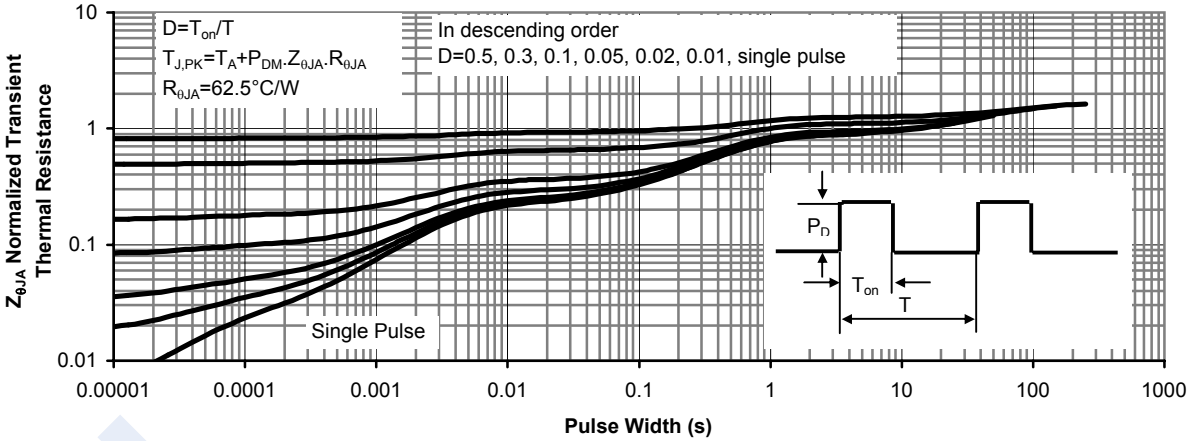


Figure 11: Normalized Maximum Transient Thermal Impedance