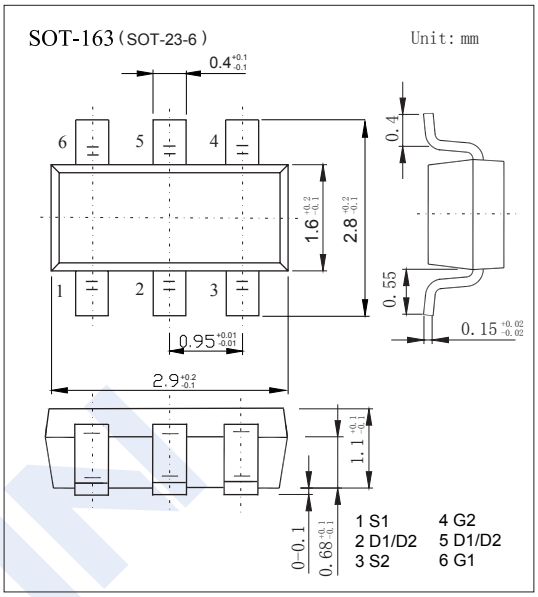
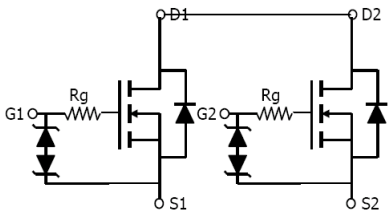
Dual N-Channel MOSFET

AO6804A (KO6804A)



■ Features

- V_{DS} (V) = 20V
- I_D =5 A (V_{GS} = 4.5V)
- $R_{DS(ON)}$ < 28mΩ (V_{GS} = 4.5V)
- $R_{DS(ON)}$ < 30mΩ (V_{GS} = 4V)
- $R_{DS(ON)}$ < 34mΩ (V_{GS} = 3.1V)
- $R_{DS(ON)}$ < 39mΩ (V_{GS} = 2.5V)
- 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	5	A
	TA=70℃		4	
Pulsed Drain Current		I_{DM}	25	
Power Dissipation	TA=25℃	P_D	1.3	W
	TA=70℃		0.8	
Thermal Resistance.Junction- to-Ambient	t ≤ 10s	R_{thJA}	95	℃/W
	Steady State		150	
Thermal Resistance.Junction- to-Lead		R_{thJL}	68	
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	20			V
Gate-Source breakdown voltage	BV_{GSO}	V_{DS}=0V, I_G=±250uA	±12			V
Zero Gate Voltage Drain Current	I_{DSS}	V_{DS}=20V, V_{GS}=0V			1	uA
		V_{DS}=20V, V_{GS}=0V, T_J=55℃			5	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=250 uA	0.5		1	V
Static Drain-Source On-Resistance	$R_{DS(ON)}$	V_{GS}=4.5V, I_D=5A			28	mΩ
		V_{GS}=4.5V, I_D=5A T_J=125℃			40	mΩ
		V_{GS}=4V, I_D=4.5A			30	mΩ
		V_{GS}=3.1V, I_D=4.5A			34	mΩ
		V_{GS}=2.5V, I_D=4A			39	mΩ
On State Drain Current	$I_{D(ON)}$	V_{GS}=4.5V, V_{DS}=5V	25			A
Forward Transconductance	g_{FS}	V_{DS}=5V, I_D=5A		18		S
Input Capacitance	C_{iss}	V_{GS}=0V, V_{DS}=10V, f=1MHz		180	225	pF
Output Capacitance	C_{oss}			95		pF
Reverse Transfer Capacitance	C_{rss}			18		pF
Gate Resistance	R_g	V_{GS}=0V, V_{DS}=0V, f=1MHz		2.7	4	kΩ
Total Gate Charge	Q_g	V_{GS}=4.5V, V_{DS}=10V, I_D=5A		5.6	7.5	nC
Gate Source Charge	Q_{gs}			0.85		nC
Gate Drain Charge	Q_{gd}			1.7		nC
Turn-On DelayTime	$t_{d(on)}$	V_{GS}=10V, V_{DS}=10V, R_L=2Ω,R_G=3Ω		172		ns
Turn-On Rise Time	t_r			368		ns
Turn-Off DelayTime	$t_{d(off)}$			2.94		us
Turn-Off Fall Time	t_f			2.5		us
Body Diode Reverse Recovery Time	t_{rr}	I_F= 5A, dI/dt= 100A/us		32	43	nS
Body Diode Reverse Recovery Charge	Q_{rr}			3.2		nC
Maximum Body-Diode Continuous Current	I_S				1.3	A
Diode Forward Voltage	V_{SD}	I_S=1A,V_{GS}=0V			1	V

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

■ Marking

Marking	84**

Dual N-Channel MOSFET

AO6804A (KO6804A)

■ Typical Characterisitics

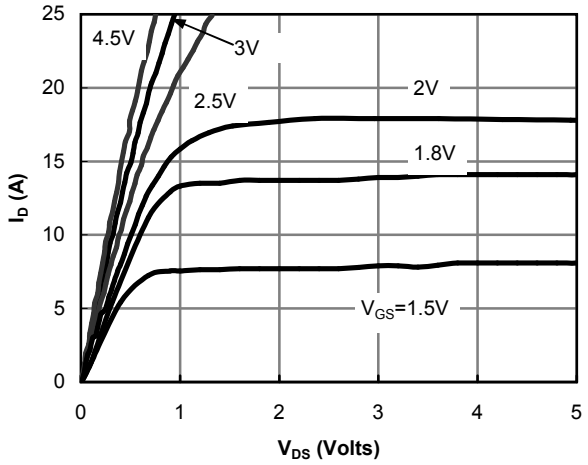

Figure 1: On-Region Characteristics

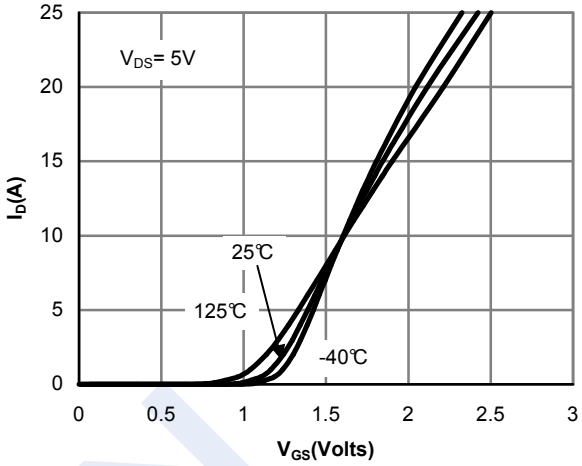

Figure 2: Transfer Characteristics

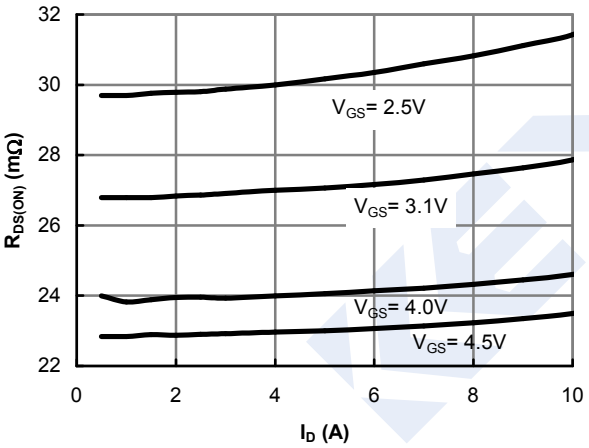

Figure 3: On-Resistance vs. Drain Current and Gate Voltage

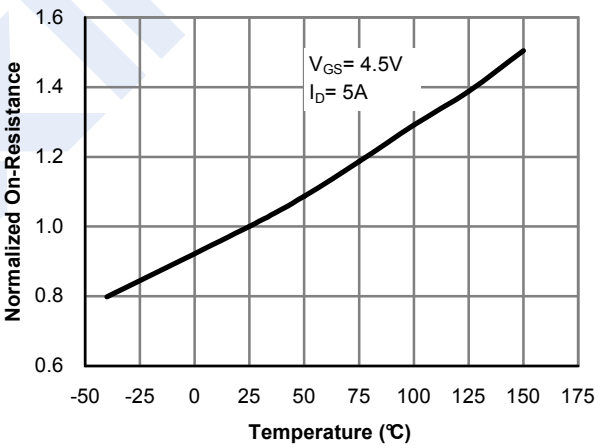

Figure 4: On-Resistance vs. Junction Temperature

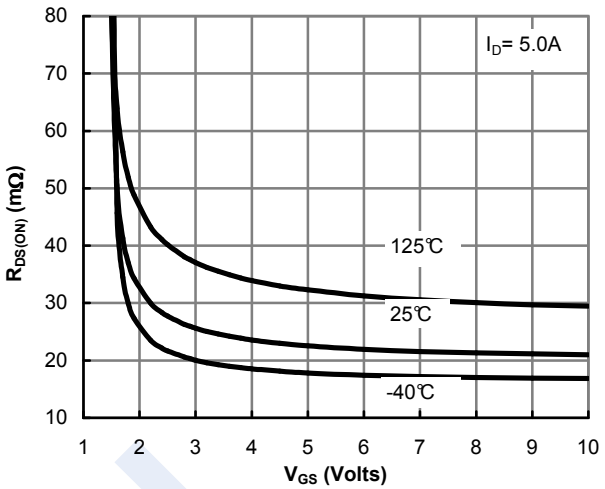

Figure 5: On-Resistance vs. Gate-Source Voltage

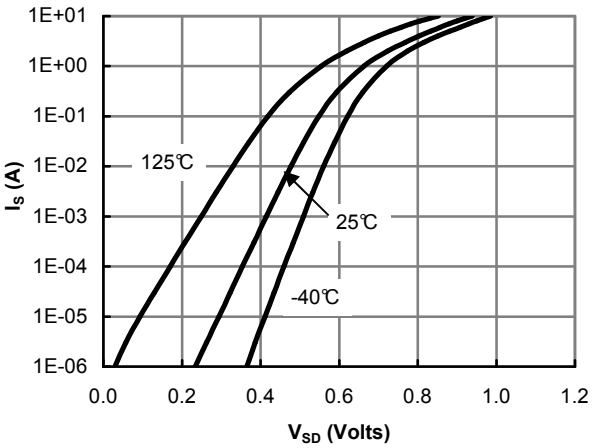

Figure 6: Body-Diode Characteristics

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■ Typical Characterisitics

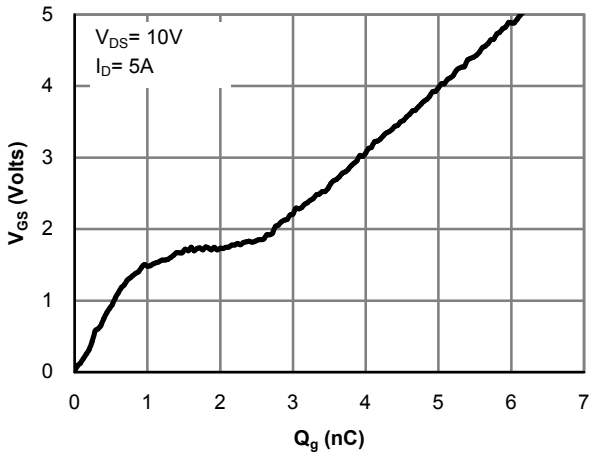

Figure 7: Gate-Charge Characteristics

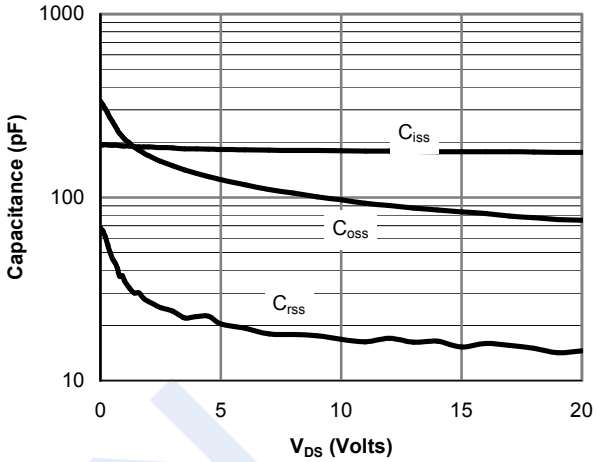

Figure 8: Capacitance Characteristics

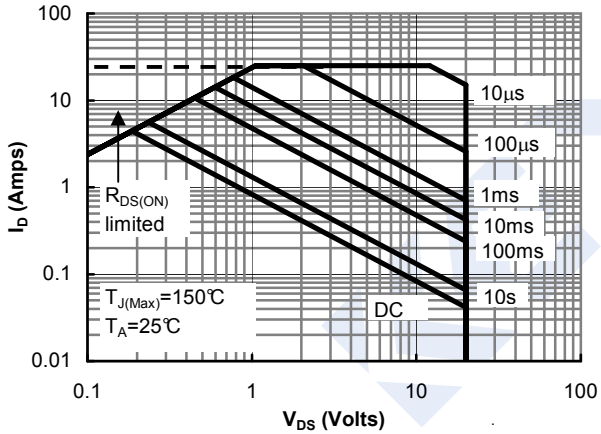

Figure 9: Maximum Forward Biased Safe Operating Area (Note E)

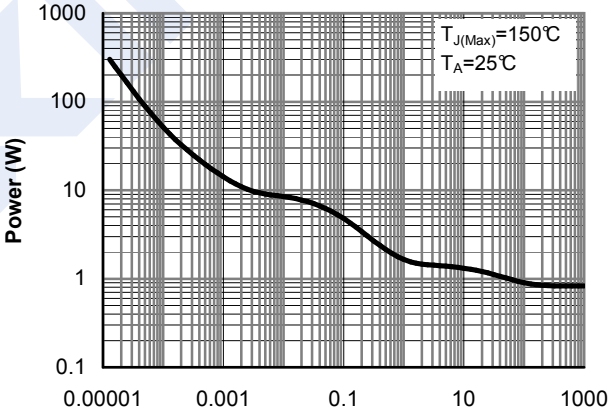

Figure 10: Single Pulse Power Rating Junction-to-Ambient (Note E)

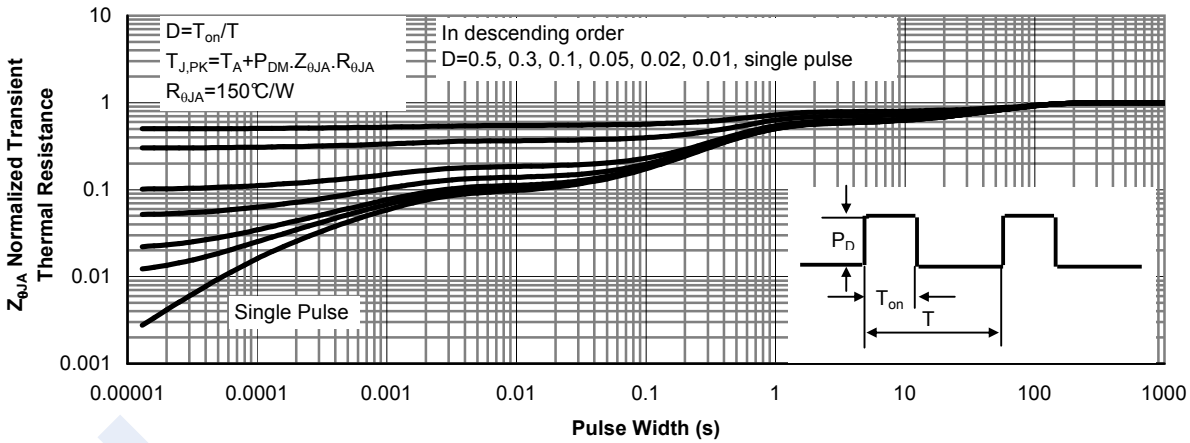

Figure 11: Normalized Maximum Transient Thermal Impedance(Note E)