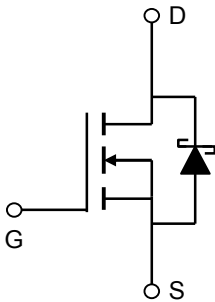
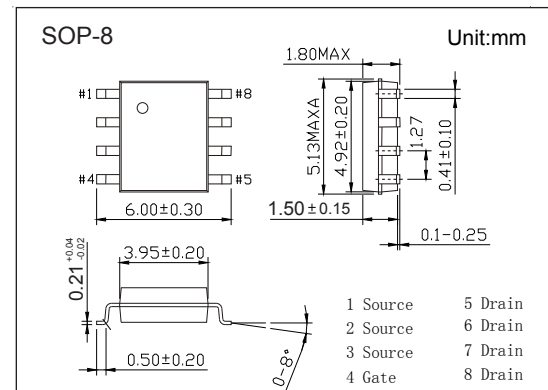


N-Channel MOSFET

AO4706 (K04706)

■ Features

- $V_{DS} (V) = 30V$
- $I_D = 16.5 A (V_{GS} = 10V)$
- $R_{DS(ON)} < 6.8m\Omega (V_{GS} = 10V)$
- $R_{DS(ON)} < 8.2m\Omega (V_{GS} = 4.5V)$
- SRFET™ Soft Recovery MOSFET: Integrated Schottky Diode



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

Parameter	Symbol	Rating	Unit	
Drain-Source Voltage	V_{DS}	30	V	
Gate-Source Voltage	V_{GS}	± 12		
Continuous Drain Current	I_D	$T_A=25^\circ C$	A	
		$T_A=70^\circ C$		13.2
Pulsed Drain Current	I_{DM}	100		
Avalanche Current	I_{AR}	30		
Repetitive Avalanche Energy	$L=0.3mH$	E_{AR}	135	mJ
Power Dissipation	P_D	$T_A=25^\circ C$	3.1	W
		$T_A=70^\circ C$		
Thermal Resistance.Junction- to-Ambient	R_{thJA}	$t \leq 10s$	40	$^\circ C/W$
		Steady-State	75	
Thermal Resistance.Junction- to-Lead	R_{thJL}	24		
Junction Temperature	T_J	150	$^\circ C$	
Storage Temperature Range	T_{stg}	-55 to 150		

N-Channel MOSFET

AO4706 (KO4706)

■ Electrical Characteristics Ta = 25°C

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Drain-Source Breakdown Voltage	V _{DSS}	I _D =1mA, V _{GS} =0V	30			V
Zero Gate Voltage Drain Current	I _{DSS}	V _{DS} =30V, V _{GS} =0V			0.1	mA
		V _{DS} =30V, V _{GS} =0V, T _J =125°C			20	
Gate-Body Leakage Current	I _{GSS}	V _{DS} =0V, V _{GS} =±12V			±100	nA
Gate Threshold Voltage	V _{GS(th)}	V _{DS} =V _{GS} , I _D =250 μA	1.5		2.4	V
Static Drain-Source On-Resistance	R _{DS(on)}	V _{GS} =10V, I _D =16.5A			6.8	mΩ
		V _{GS} =10V, I _D =16.5A, T _J =125°C			10.5	
		V _{GS} =4.5V, I _D =15A			8.2	
On State Drain Current	I _{D(ON)}	V _{GS} =10V, V _{DS} =5V	100			A
Forward Transconductance	g _{FS}	V _{DS} =5V, I _D =16.5A		112		S
Input Capacitance	C _{iss}	V _{GS} =0V, V _{DS} =15V, f=1MHz		4000	5000	pF
Output Capacitance	C _{oss}			520		
Reverse Transfer Capacitance	C _{rss}			217		
Gate Resistance	R _g	V _{GS} =0V, V _{DS} =0V, f=1MHz		0.6	0.9	Ω
Total Gate Charge (10V)	Q _g	V _{GS} =10V, V _{DS} =15V, I _D =17A		59	77	nC
Total Gate Charge (4.5V)				27	35	
Gate Source Charge	Q _{gs}			12		
Gate Drain Charge	Q _{gd}			11		
Turn-On DelayTime	t _{d(on)}		V _{GS} =10V, V _{DS} =15V, R _L =0.9Ω, R _{GEN} =3Ω		9	
Turn-On Rise Time	t _r			9		
Turn-Off DelayTime	t _{d(off)}			37		
Turn-Off Fall Time	t _f			8		
Body Diode Reverse Recovery Time	t _{rr}	I _F =16.5A, di/dt=300A/μs		17	20	nC
Body Diode Reverse Recovery Charge	Q _{rr}			21		
Maximum Body-Diode Continuous Current	I _S				5	A
Diode Forward Voltage	V _{SD}	I _S =1A, V _{GS} =0V			0.5	V

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

■ Marking

Marking	4706 KC****
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N-Channel MOSFET AO4706 (KO4706)

■ Typical Characteristics

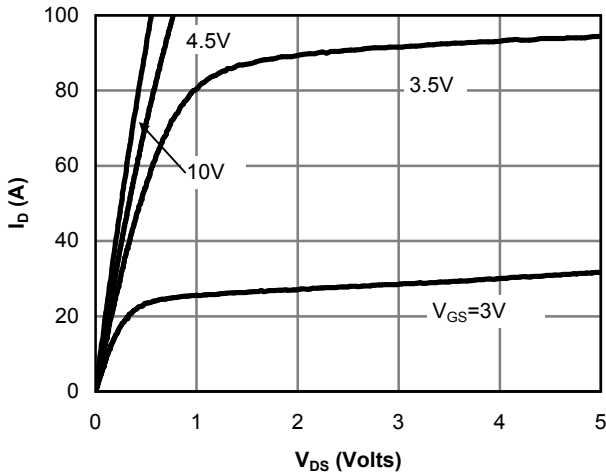


Figure 1: On-Region Characteristics

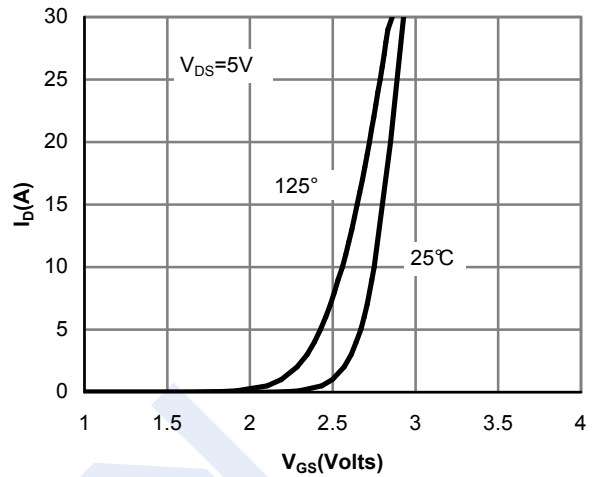


Figure 2: Transfer Characteristics

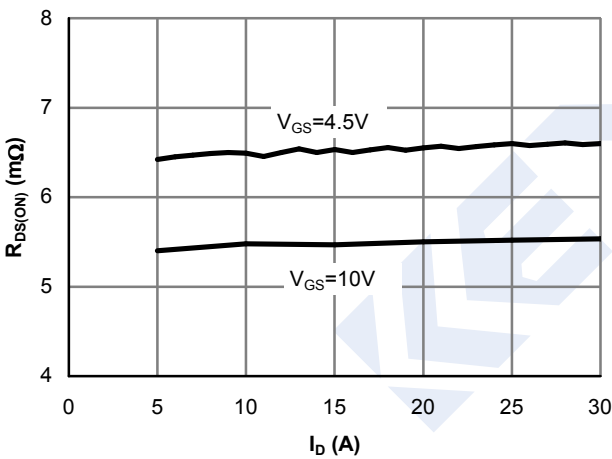


Figure 3: On-Resistance vs. Drain Current and Gate Voltage

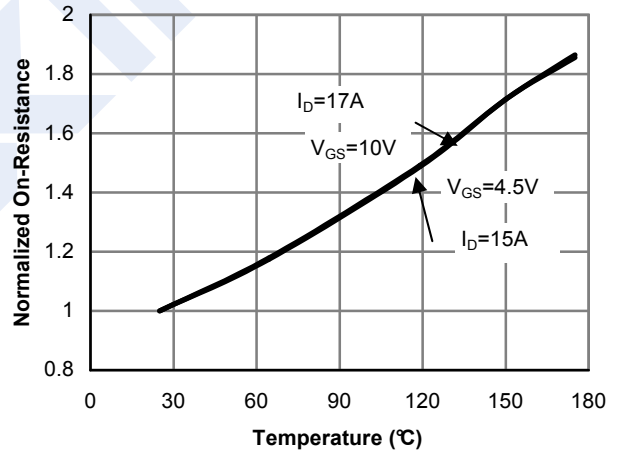


Figure 4: On-Resistance vs. Junction Temperature

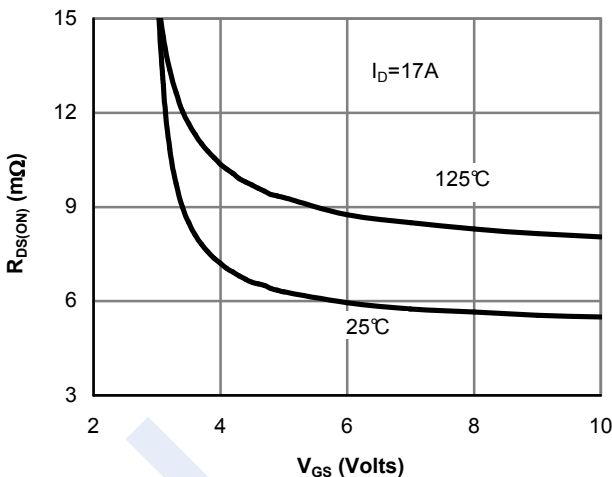


Figure 5: On-Resistance vs. Gate-Source Voltage

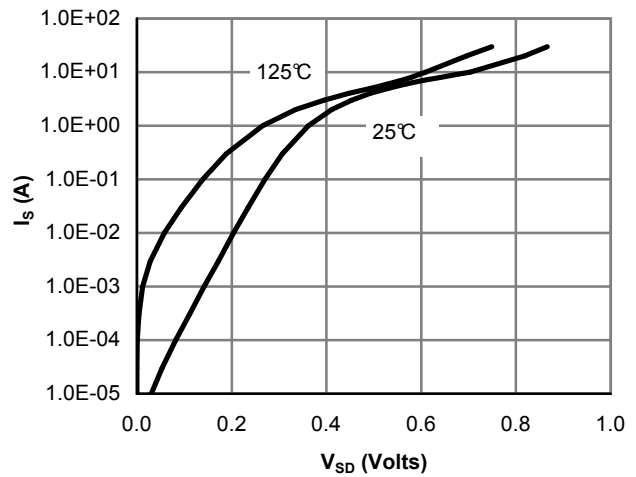


Figure 6: Body-Diode Characteristics

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■ Typical Characteristics

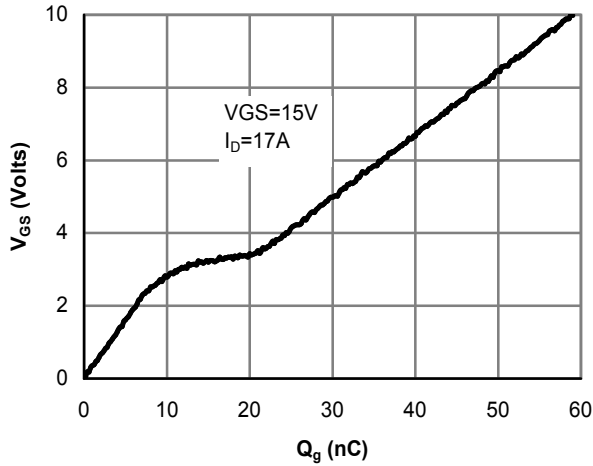


Figure 7: Gate-Charge Characteristics

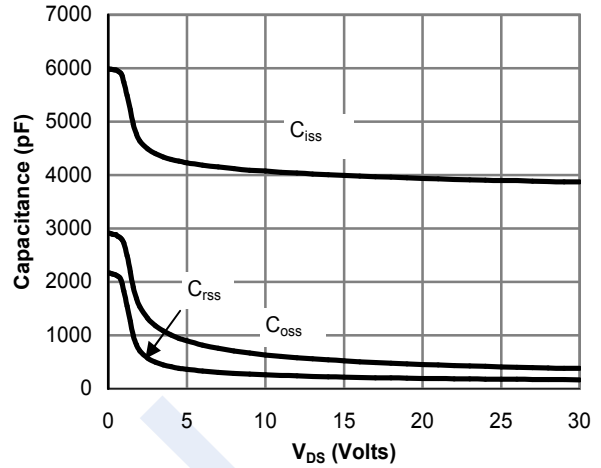


Figure 8: Capacitance Characteristics

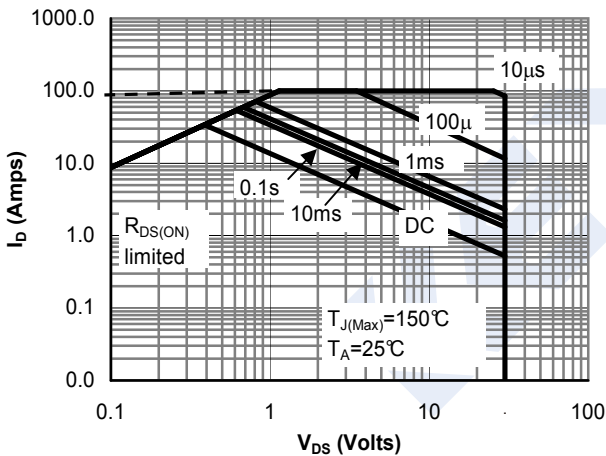


Figure 9: Maximum Forward Biased Safe Operating Area (Note E)

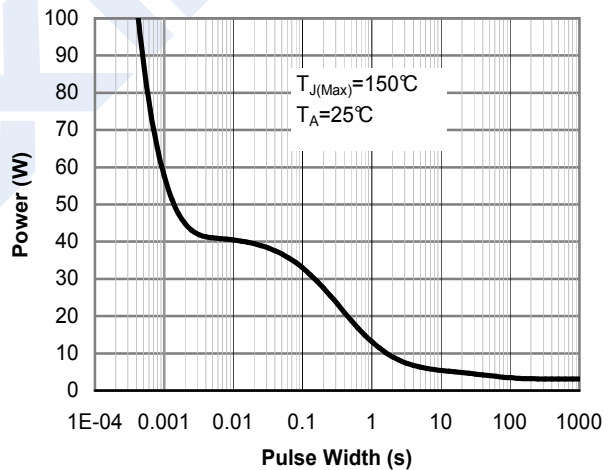


Figure 10: Single Pulse Power Rating Junction-to-Ambient (Note E)

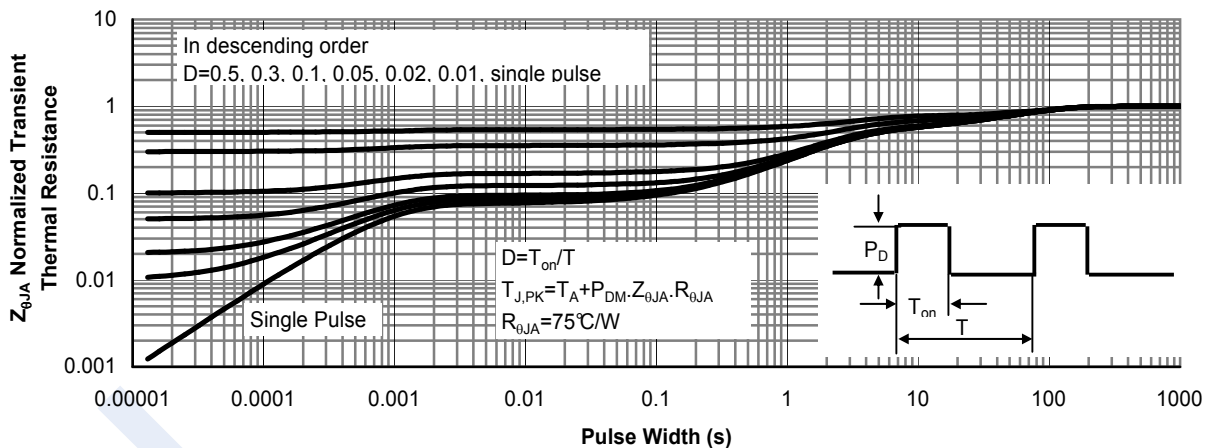


Figure 11: Normalized Maximum Transient Thermal Impedance (Note E)