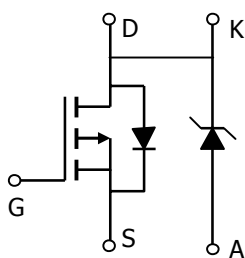
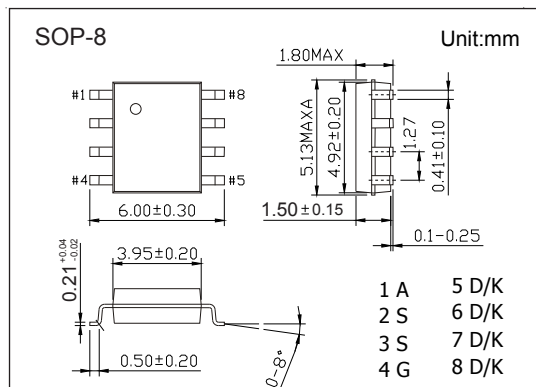


P-Channel MOSFET

AO4705 (KO4705)

■ Features

- $V_{DS} (V) = -30V$
- $I_D = -10 A$ ($V_{GS} = -10V$)
- $R_{DS(ON)} < 14m\Omega$ ($V_{GS} = 20V$)
- $R_{DS(ON)} < 16m\Omega$ ($V_{GS} = -10V$)
- $V_{DS} (V) = 30V$, $I_F = 5A$, $V_F < 0.52V @ 3A$

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

Parameter		Symbol	MOSFET	Schottky	Unit
Drain-Source Voltage		V _{DS}	-30		V
Gate-Source Voltage		V _{GS}	±25		
Schottky Reverse Voltage		V _{KA}		30	
Continuous Drain Current	T _A =25℃	I _D	-10		A
	T _A =70℃		-8		
Pulsed Drain Current		I _{DM}	-60		
Continuous Forward Current	T _A =25℃	I _F		5	
	T _A =70℃			3.5	
Pulsed Diode Forward Current		I _{FM}		30	
Power Dissipation	T _A =25℃	P _D	3		W
	T _A =70℃		2		
Thermal Resistance.Junction- to-Ambient	t ≤ 10s	R _{thJA}	40		℃/W
	Steady-State		75		
Thermal Resistance.Junction- to-Lead		R _{thJL}	30		℃
Junction Temperature		T _J	150		
Storage Temperature Range		T _{stg}	-55 to 150		

P-Channel MOSFET

AO4705 (KO4705)

■ Electrical Characteristics Ta = 25°C

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Drain-Source Breakdown Voltage	V _{DSS}	I _D =250 μA, V _{GS} =0V	-30			V
Zero Gate Voltage Drain Current	I _{DSS}	V _{DS} =-24V, V _{GS} =0V			-1	μA
		V _{DS} =-24V, V _{GS} =0V, T _J =55°C			-5	
Gate-Body Leakage Current	I _{GSS}	V _{DS} =0V, V _{GS} =±25V			±100	nA
Gate Threshold Voltage	V _{GS(th)}	V _{DS} =V _{GS} , I _D =-250 μA	-1.7		-3	V
Static Drain-Source On-Resistance	R _{DS(on)}	V _{GS} =-10V, I _D =-10A			16	mΩ
		V _{GS} =-10V, I _D =-10A, T _J =125°C			21	
		V _{GS} =-20V, I _D =-10A			14	
		V _{GS} =-4.5V, I _D =-10A		25		
On State Drain Current	I _{D(ON)}	V _{GS} =-10V, V _{DS} =-5V	60			A
Forward Transconductance	g _{FS}	V _{DS} =-5V, I _D =-10A		26		S
Input Capacitance	C _{iss}	V _{GS} =0V, V _{DS} =-15V, f=1MHz		2076		pF
Output Capacitance	C _{oss}			503		
Reverse Transfer Capacitance	C _{rss}			302		
Gate Resistance	R _g	V _{GS} =0V, V _{DS} =0V, f=1MHz		2		Ω
Total Gate Charge (4.5V)	Q _g	V _{GS} =-10V, V _{DS} =-15V, I _D =-10A		37.2		nC
Gate Source Charge	Q _{gs}			7		
Gate Drain Charge	Q _{gd}			10.4		
Turn-On DelayTime	t _{d(on)}	V _{GS} =-10V, V _{DS} =-15V, R _L =1Ω, R _{GEN} =3Ω		12.4		ns
Turn-On Rise Time	t _r			8.2		
Turn-Off DelayTime	t _{d(off)}			25.6		
Turn-Off Fall Time	t _f			12		
Body Diode+Schottky Reverse Recovery Time	t _{rr}	I _F =-10A, di/dt= 100A/us		33		nC
Body Diode+Schottky Reverse Recovery Charge	Q _{rr}			23		
Body-Diode + Schottky Continuous Current	I _S				-4.2	A
Diode + Schottky Forward Voltage	V _{SD}	I _S =1A, V _{GS} =0V			-1	V
Forward Voltage Drop	V _F	I _F =-3A			0.52	
Maximum reverse leakage current	I _{rm}	V _R =24V			0.15	mA
		V _R =24V, T _J =125°C			20	
		V _R =24V, T _J =150°C			60	
Junction Capacitance	C _T	V _R =15V		120		pF

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

■ Marking

Marking	4705 KC****
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P-Channel MOSFET

AO4705 (KO4705)

■ Typical Characteristics

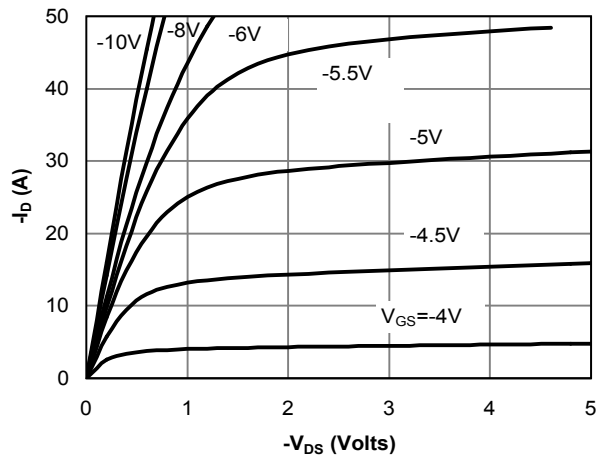


Fig 1: On-Region Characteristics

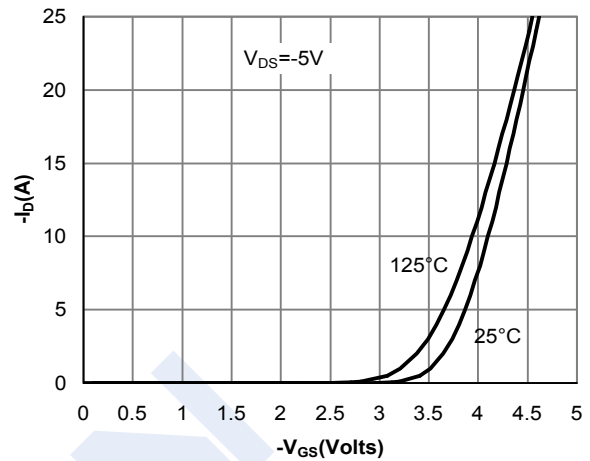


Figure 2: Transfer Characteristics

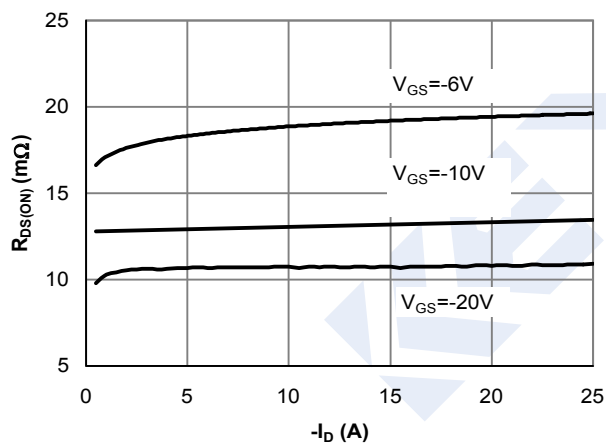


Figure 3: On-Resistance vs. Drain Current and Gate Voltage

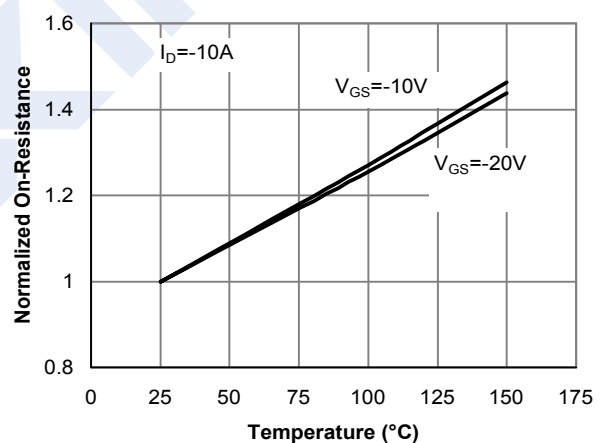


Figure 4: On-Resistance vs. Junction Temperature

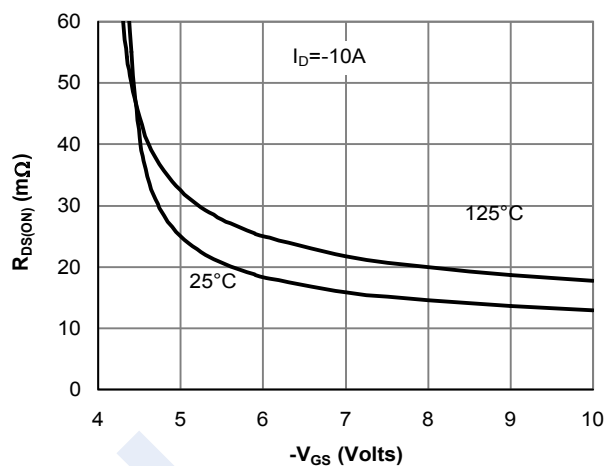


Figure 5: On-Resistance vs. Gate-Source Voltage

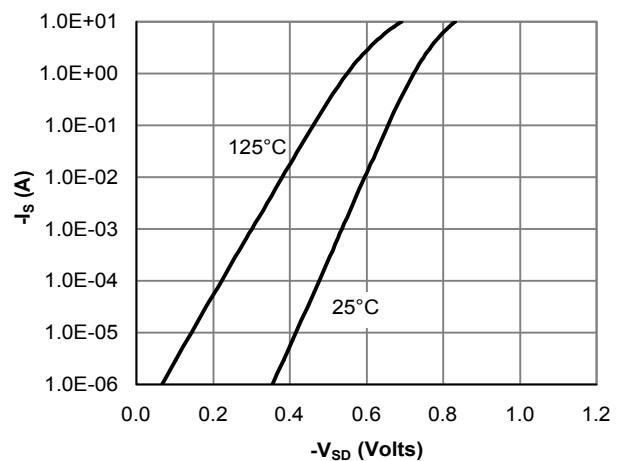


Figure 6: Body-Diode Characteristics

P-Channel MOSFET

AO4705 (KO4705)

■ Typical Characteristics

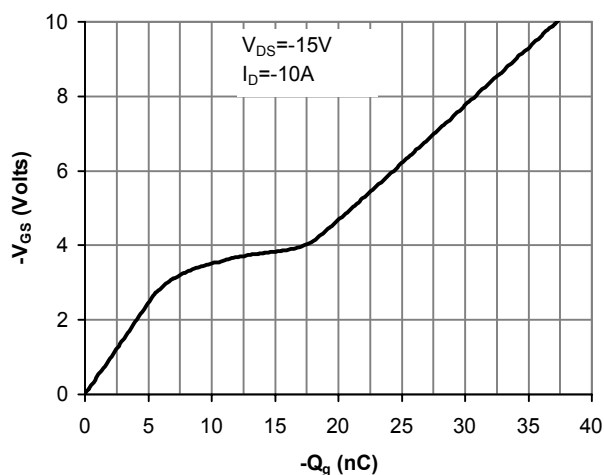


Figure 7: Gate-Charge Characteristics

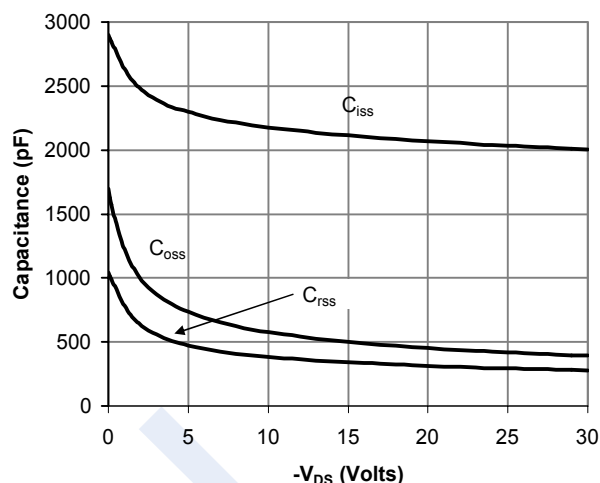


Figure 8: Capacitance Characteristics

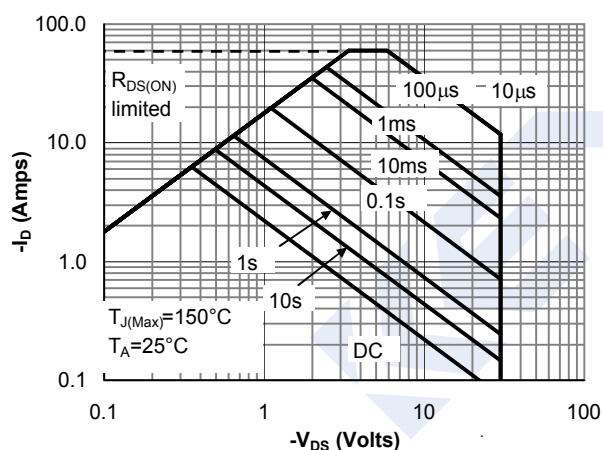


Figure 9: Maximum Forward Biased Safe Operating Area (Note E)

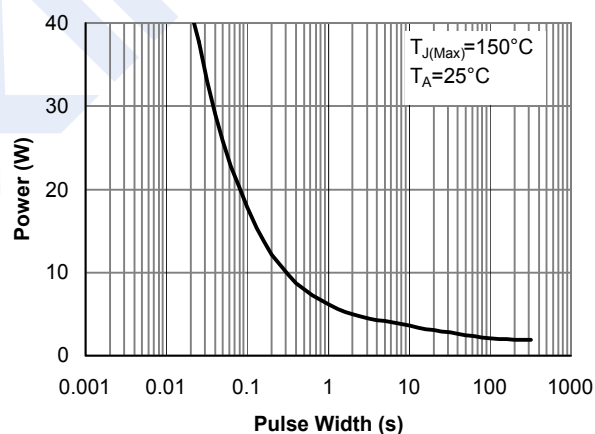


Figure 10: Single Pulse Power Rating Junction-to-Ambient (Note E)

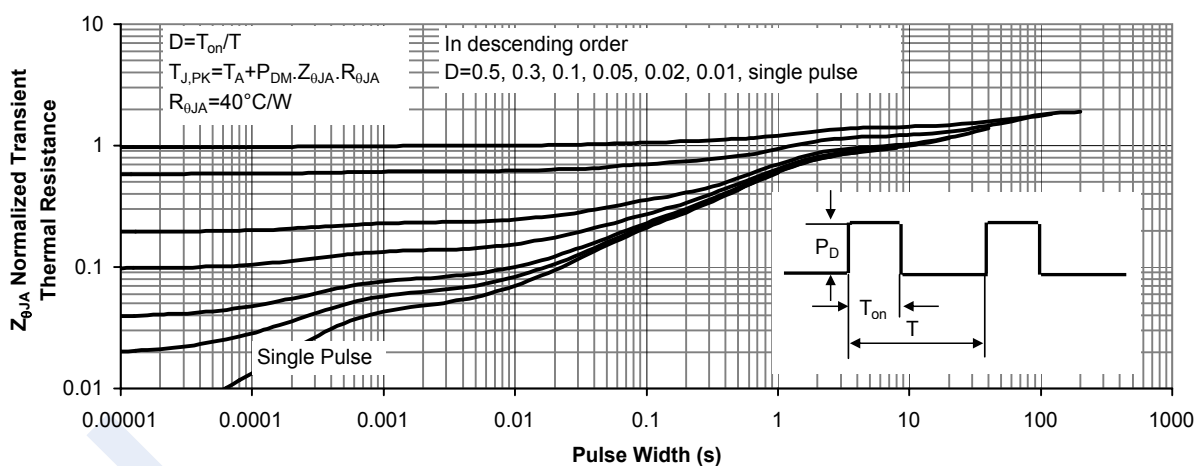


Figure 11: Normalized Maximum Transient Thermal Impedance

P-Channel MOSFET

AO4705 (KO4705)

■ Typical Characteristics

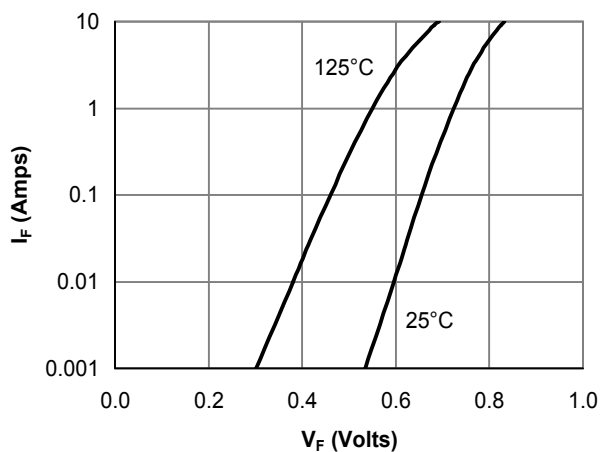


Figure 12: Schottky Forward Characteristics

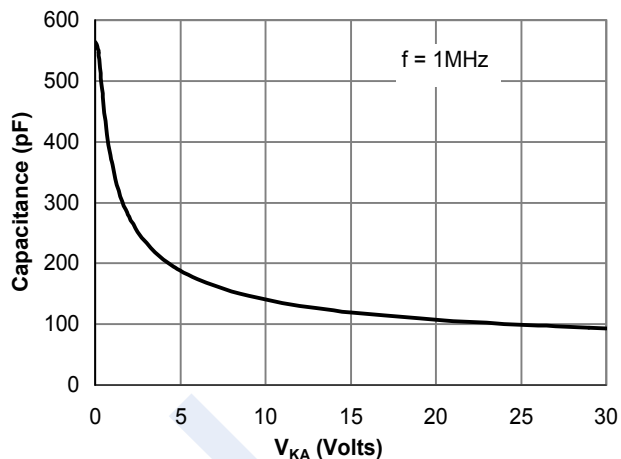


Figure 13: Schottky Capacitance Characteristics

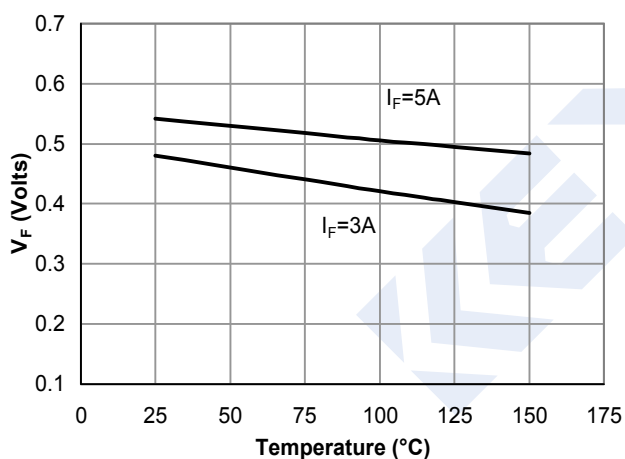


Figure 14: Schottky Forward Drop vs. Junction Temperature

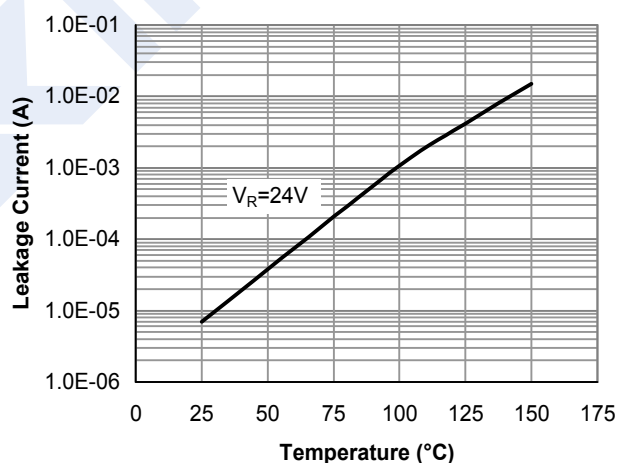


Figure 15: Schottky Leakage current vs. Junction Temperature

