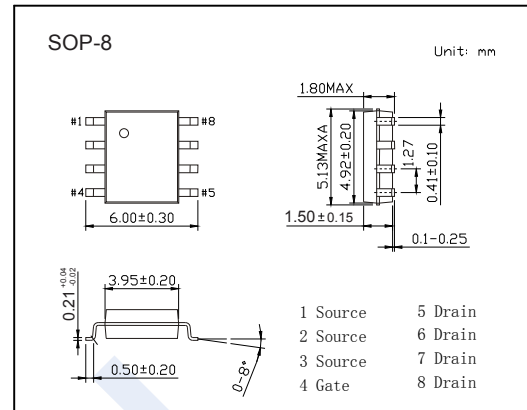
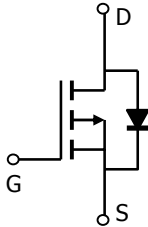


P-Channel MOSFET

AO4411-HF (K04411-HF)

■ Features

- $V_{DS} (V) = -30V$
- $I_D = -8 A (V_{GS} = -10V)$
- $R_{DS(ON)} < 32m\Omega (V_{GS} = -10V)$
- $R_{DS(ON)} < 55m\Omega (V_{GS} = -4.5V)$
- Pb-Free Package May be Available. The G-Suffix Denotes a Pb-Free Lead Finish



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

Parameter	Symbol	Rating	Unit
Drain-Source Voltage	V_{DS}	-30	V
Gate-Source Voltage	V_{GS}	± 20	
Continuous Drain Current	I_D	$T_A = 25^\circ C$	-8
		$T_A = 70^\circ C$	-6.6
Pulsed Drain Current	I_{DM}	-40	A
Power Dissipation	P_D	$T_A = 25^\circ C$	3
		$T_A = 70^\circ C$	2.1
Thermal Resistance.Junction- to-Ambient	R_{thJA}	$t \leq 10s$	40
		Steady-State	75
Thermal Resistance.Junction- to-Lead	R_{thJL}	30	$^\circ C/W$
Junction Temperature	T_J	150	$^\circ C$
Junction Storage Temperature Range	T_{stg}	-55 to 150	

P-Channel MOSFET AO4411-HF (K04411-HF)

■ 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} =±20V			±100	nA	
Gate Threshold Voltage	V _{GS(th)}	V _{DS} =V _{GS} I _D =-250 μA	-1.2		-2.4	V	
Static Drain-Source On-Resistance	R _{DS(on)}	V _{GS} =-10V, I _D =-8A			32	mΩ	
		V _{GS} =-10V, I _D =-8A T _J =125°C		33			
		V _{GS} =-4.5V, I _D =-5A			55		
On state drain current	I _{D(ON)}	V _{GS} =-10V, V _{DS} =-5V	-40			A	
Forward Transconductance	g _{FS}	V _{DS} =-5V, I _D =-8A		14.5		S	
Input Capacitance	C _{iss}	V _{GS} =0V, V _{DS} =-15V, f=1MHz		920	1120	pF	
Output Capacitance	C _{oss}			190			
Reverse Transfer Capacitance	C _{rss}			122			
Gate resistance	R _g		V _{GS} =0V, V _{DS} =0V, f=1MHz		3.6		5
Total Gate Charge (10V)	Q _g	V _{GS} =-10V, V _{DS} =-15V, I _D =-8A		18.4	23	nC	
Total Gate Charge (4.5V)				9.3	11.5		
Gate Source Charge			Q _{gs}		2.7		
Gate Drain Charge			Q _{gd}		4.9		
Turn-On DelayTime	t _{d(on)}	V _{GS} =-10V, V _{DS} =-15V, R _L =1.8Ω, R _{GEN} =3Ω		7.1		ns	
Turn-On Rise Time	t _r			3.4			
Turn-Off DelayTime	t _{d(off)}			18.9			
Turn-Off Fall Time	t _f			8.4			
Body Diode Reverse Recovery Time	t _{rr}	I _F =-8A, di/dt=100A/us		21.5	27	nC	
Body Diode Reverse Recovery Charge	Q _{rr}			12.5			
Maximum Body-Diode Continuous Current	I _S				-4.2	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 <300 μs pulses, duty cycle 0.5% max.

■ Marking

Marking	4411
	KC**** _F

P-Channel MOSFET AO4411-HF (KO4411-HF)

■ Typical Characteristics

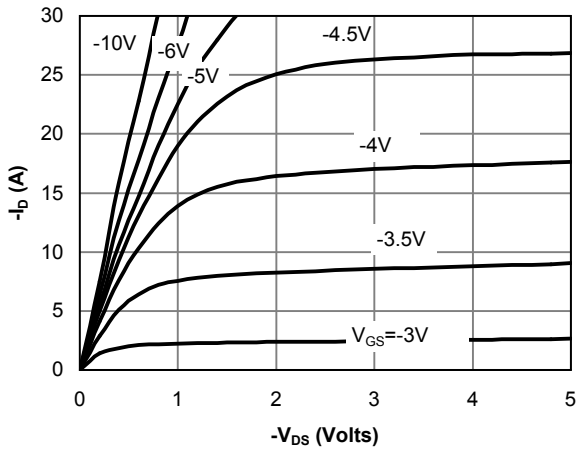


Fig 1: On-Region Characteristics

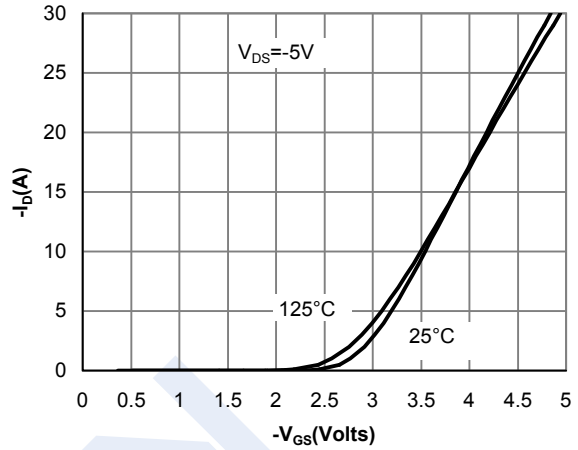


Figure 2: Transfer Characteristics

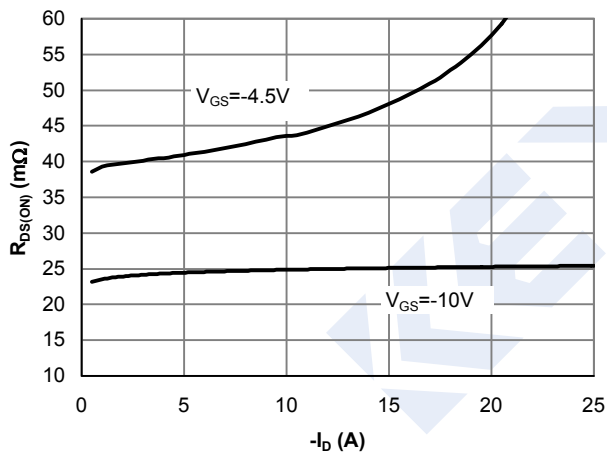


Figure 3: On-Resistance vs. Drain Current and Gate Voltage

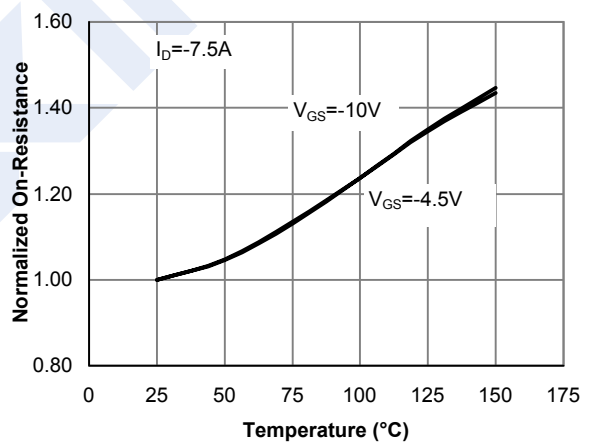


Figure 4: On-Resistance vs. Junction Temperature

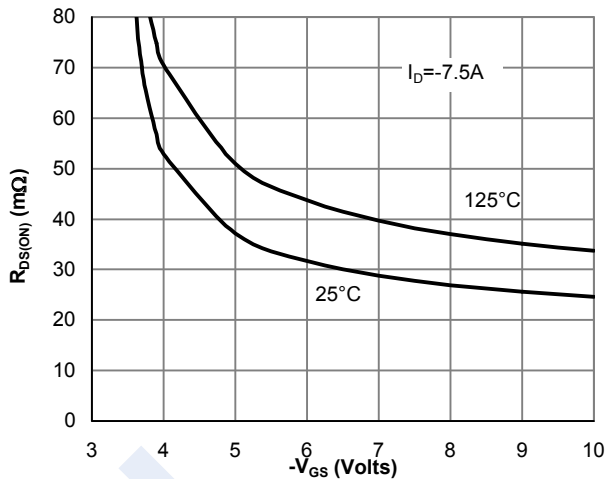


Figure 5: On-Resistance vs. Gate-Source Voltage

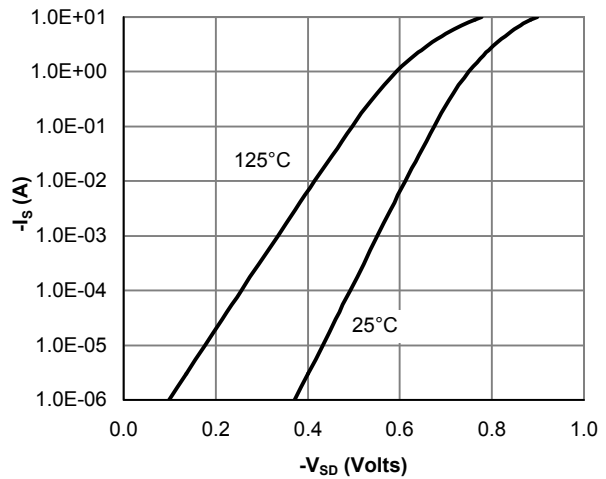


Figure 6: Body-Diode Characteristics

P-Channel MOSFET AO4411-HF (KO4411-HF)

■ Typical Characteristics

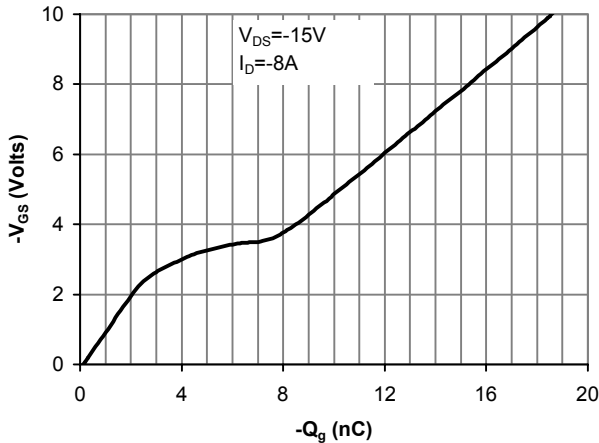


Figure 7: Gate-Charge Characteristics

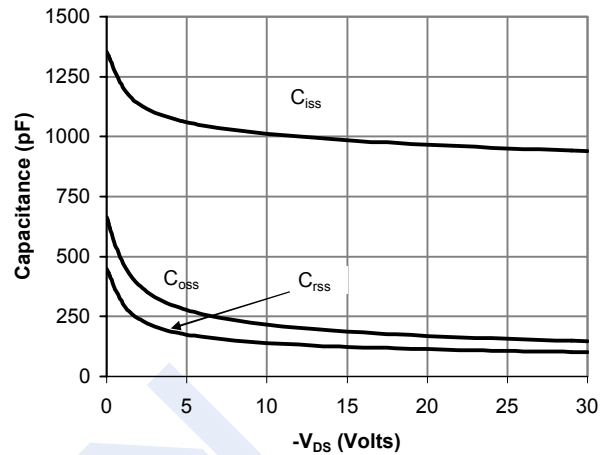


Figure 8: Capacitance Characteristics

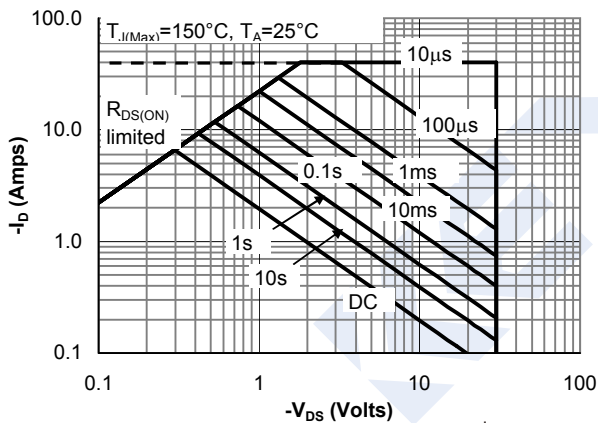


Figure 9: Maximum Forward Biased Safe Operating Area (Note E)

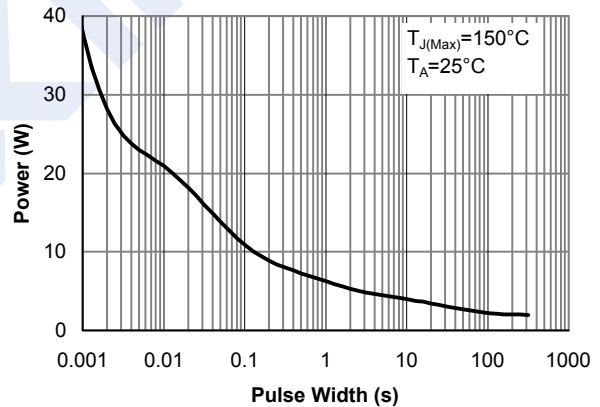


Figure 10: Single Pulse Power Rating Junction-to-Ambient (Note E)

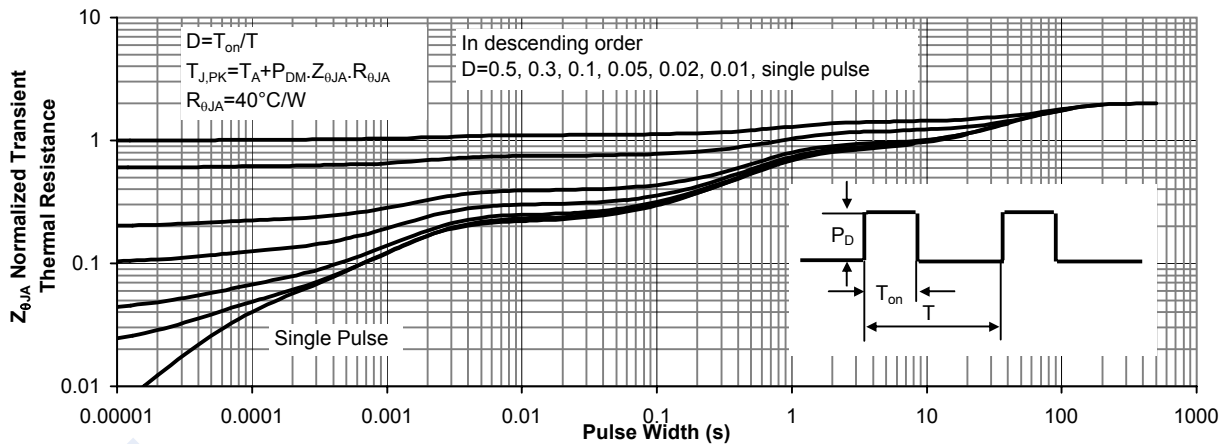


Figure 11: Normalized Maximum Transient Thermal Impedance