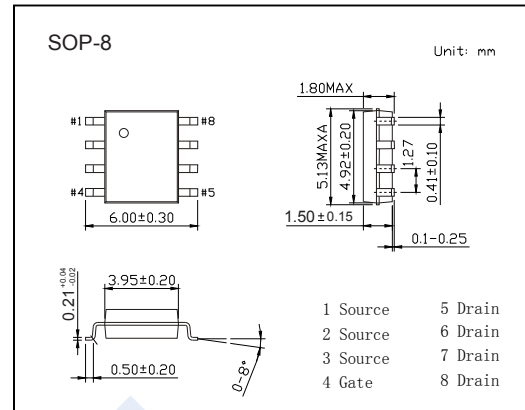
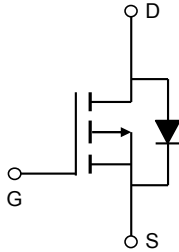


## P-Channel MOSFET

### AO4403-HF (KO4403-HF)

#### ■ Features

- $V_{DS} (V) = -30V$
- $I_D = -6 A (V_{GS} = -10V)$
- $R_{DS(ON)} < 48m\Omega (V_{GS} = -10V)$
- $R_{DS(ON)} < 57m\Omega (V_{GS} = -4.5V)$
- $R_{DS(ON)} < 80m\Omega (V_{GS} = -2.5V)$
- 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	$V_{GS}$	$\pm 12$		
Continuous Drain Current	$I_D$	$T_A = 25^\circ C$	-6	A
		$T_A = 70^\circ C$	-5	
Pulsed Drain Current	$I_{DM}$	-30		
Avalanche Current	$I_{AS}, I_{AR}$	18		
Avalanche energy	$L = 0.1mH$ $E_{AS}, E_{AR}$	16	mJ	
Power Dissipation	$P_D$	$T_A = 25^\circ C$	3.1	W
		$T_A = 70^\circ C$	2	
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	$^\circ C$	
Junction Storage Temperature Range	$T_{stg}$	-55 to 150		

## P-Channel MOSFET AO4403-HF (KO4403-HF)

### ■ Electrical Characteristics Ta = 25°C

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Drain-Source Breakdown Voltage	V <sub>DSS</sub>	I <sub>D</sub> =-250 μA, V <sub>GS</sub> =0V	-30			V
Zero Gate Voltage Drain Current	I <sub>DSS</sub>	V <sub>DS</sub> =-30V, V <sub>GS</sub> =0V			-1	μA
		V <sub>DS</sub> =-30V, V <sub>GS</sub> =0V, T <sub>J</sub> =55°C			-5	
Gate-Body leakage current	I <sub>GSS</sub>	V <sub>DS</sub> =0V, V <sub>GS</sub> =±12V			±100	nA
Gate Threshold Voltage	V <sub>GS(th)</sub>	V <sub>DS</sub> =V <sub>GS</sub> I <sub>D</sub> =-250 μA	-0.5		-1.3	V
Static Drain-Source On-Resistance	R <sub>DS(on)</sub>	V <sub>GS</sub> =-10V, I <sub>D</sub> =-6A			48	mΩ
		V <sub>GS</sub> =-10V, I <sub>D</sub> =-6A T <sub>J</sub> =125°C			72	
		V <sub>GS</sub> =-4.5V, I <sub>D</sub> =-4A			57	
		V <sub>GS</sub> =-2.5V, I <sub>D</sub> =-2A			80	
On state drain current	I <sub>D(ON)</sub>	V <sub>GS</sub> =-4.5V, V <sub>DS</sub> =-5V	-30			A
Forward Transconductance	g <sub>FS</sub>	V <sub>DS</sub> =-5V, I <sub>D</sub> =-6A		19		S
Input Capacitance	C <sub>iss</sub>	V <sub>GS</sub> =0V, V <sub>DS</sub> =-15V, f=1MHz		645	780	pF
Output Capacitance	C <sub>oss</sub>			80		
Reverse Transfer Capacitance	C <sub>rss</sub>			55		
Gate resistance	R <sub>g</sub>	V <sub>GS</sub> =0V, V <sub>DS</sub> =0V, f=1MHz	4		12	Ω
Total Gate Charge	Q <sub>g</sub>	V <sub>GS</sub> =-4.5V, V <sub>DS</sub> =-15V, I <sub>D</sub> =-6A		7		nC
Gate Source Charge	Q <sub>gs</sub>			1.5		
Gate Drain Charge	Q <sub>gd</sub>			2.5		
Turn-On DelayTime	t <sub>d(on)</sub>	V <sub>GS</sub> =-10V, V <sub>DS</sub> =-15V, R <sub>L</sub> =2.5Ω, R <sub>GEN</sub> =6Ω		6.5		ns
Turn-On Rise Time	t <sub>r</sub>			3.5		
Turn-Off DelayTime	t <sub>d(off)</sub>			41		
Turn-Off Fall Time	t <sub>f</sub>			9		
Body Diode Reverse Recovery Time	t <sub>rr</sub>	I <sub>F</sub> =-6A, di/dt=100A/us		11		nC
Body Diode Reverse Recovery Charge	Q <sub>rr</sub>			3.5		
Maximum Body-Diode Continuous Current	I <sub>S</sub>				-3.5	A
Diode Forward Voltage	V <sub>SD</sub>	I <sub>S</sub> =-1A, V <sub>GS</sub> =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	4403
	KC**** F

## P-Channel MOSFET AO4403-HF (KO4403-HF)

■ Typical Characteristics

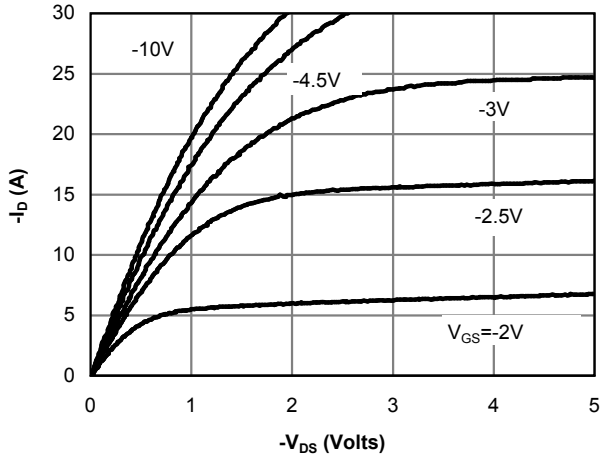


Fig 1: On-Region Characteristics (Note E)

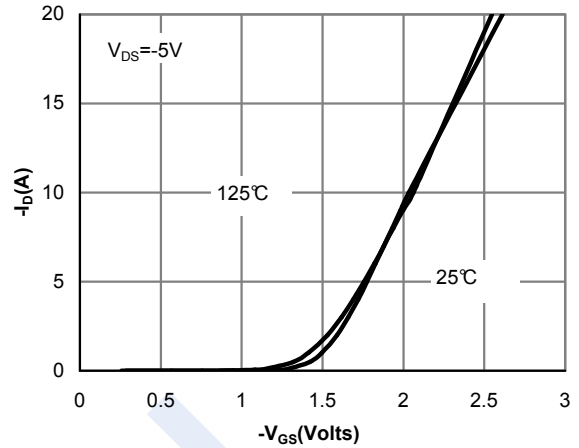


Figure 2: Transfer Characteristics (Note E)

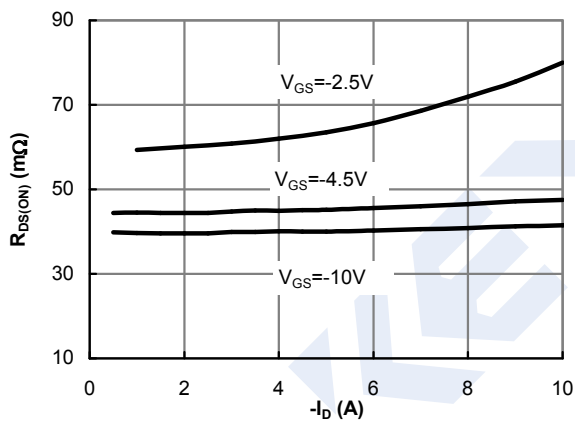


Figure 3: On-Resistance vs. Drain Current and Gate Voltage (Note E)

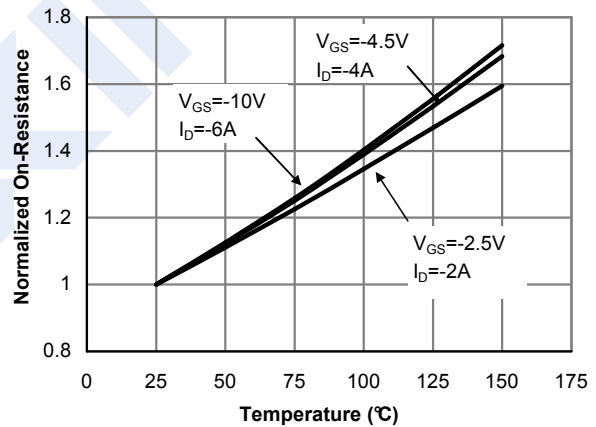


Figure 4: On-Resistance vs. Junction Temperature

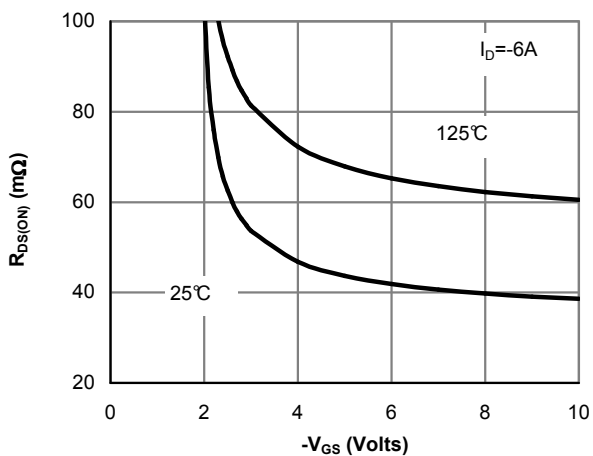


Figure 5: On-Resistance vs. Gate-Source Voltage (Note E)

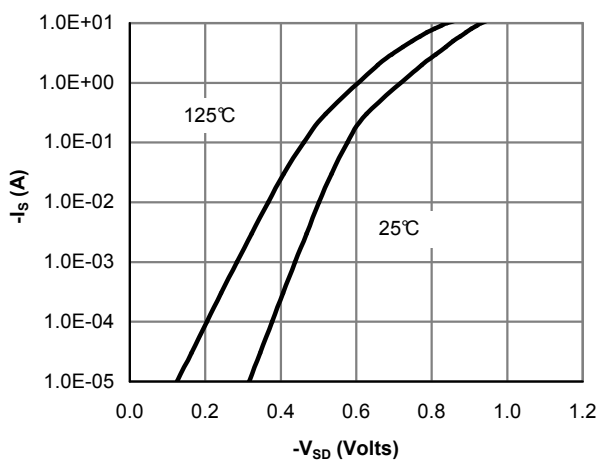


Figure 6: Body-Diode Characteristics (Note E)

## P-Channel MOSFET AO4403-HF (KO4403-HF)

■ Typical Characteristics

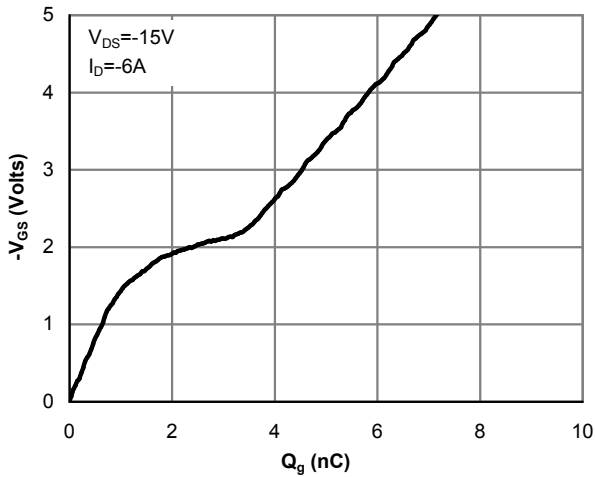


Figure 7: Gate-Charge Characteristics

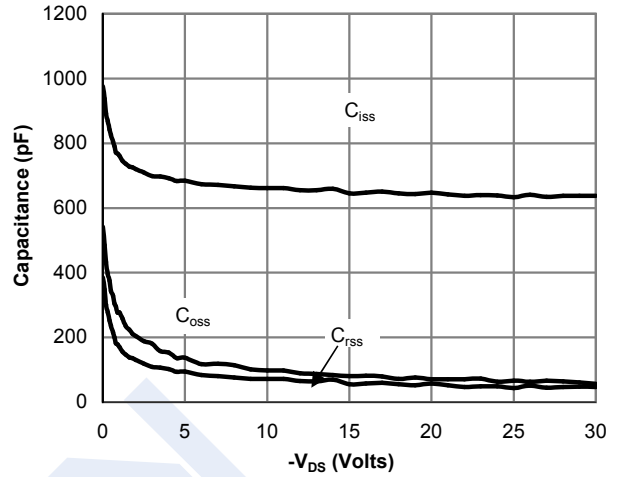


Figure 8: Capacitance Characteristics

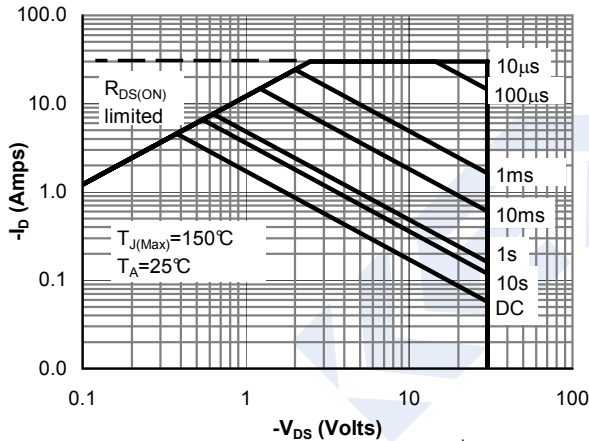


Figure 9: Maximum Forward Biased Safe Operating Area (Note F)

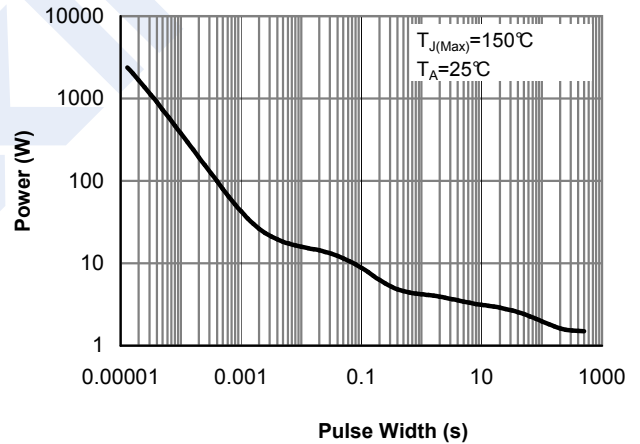


Figure 10: Single Pulse Power Rating Junction-to-Ambient (Note F)

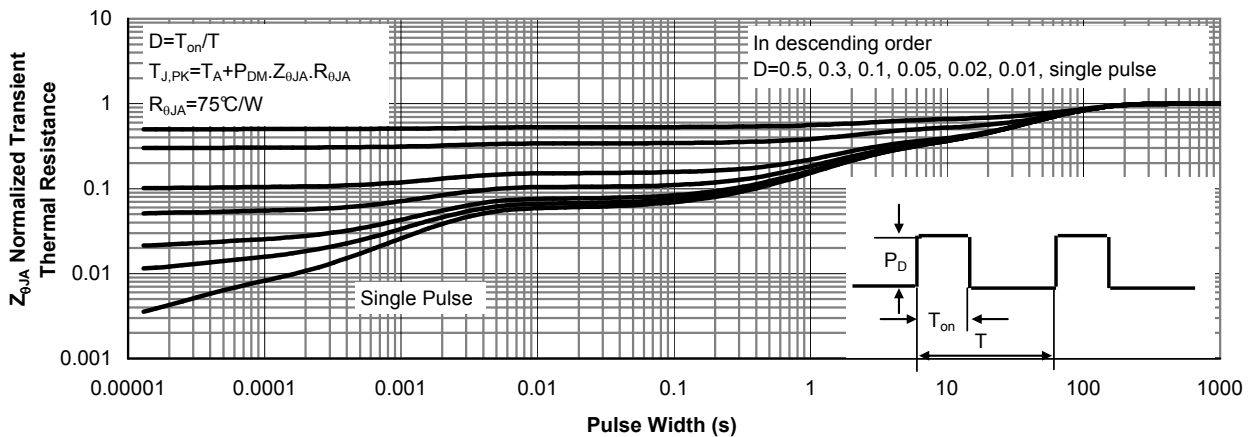


Figure 11: Normalized Maximum Transient Thermal Impedance (Note F)