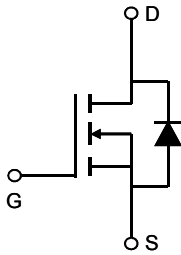
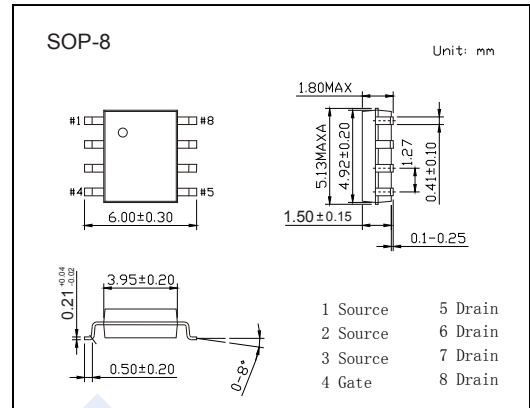


## N-Channel MOSFET

### AO4404B-HF (KO4404B-HF)

#### ■ Features

- $V_{DS} (V) = 30V$
- $I_D = 8.5 A (V_{GS} = 10V)$
- $R_{DS(ON)} < 24m\Omega (V_{GS} = 10V)$
- $R_{DS(ON)} < 30m\Omega (V_{GS} = 4.5V)$
- $R_{DS(ON)} < 48m\Omega (V_{GS} = 2.5V)$
- Pb-Free Package May be Available. The G-Suffix Denotes a Pb-Free Lead Finish



#### ■ Absolute Maximum Ratings $T_a = 25^\circ\text{C}$

Parameter	Symbol	Rating	Unit
Drain-Source Voltage	$V_{DS}$	30	V
Gate-Source Voltage	$V_{GS}$	$\pm 12$	
Continuous Drain Current	$I_D$	$T_A = 25^\circ\text{C}$	A
		$T_A = 70^\circ\text{C}$	
Pulsed Drain Current	$I_{DM}$	60	
Avalanche Current	$I_{AS}$	14	
Avalanche energy	$E_{AS}$	10	mJ
Power Dissipation	$P_D$	$T_A = 25^\circ\text{C}$	W
		$T_A = 70^\circ\text{C}$	
Thermal Resistance.Junction- to-Ambient	$R_{thJA}$	$t \leq 10s$	$^\circ\text{C}/\text{W}$
		Steady-State	
Thermal Resistance.Junction- to-Lead	$R_{thJL}$	24	
Junction Temperature	$T_J$	150	$^\circ\text{C}$
Storage Temperature Range	$T_{stg}$	-55 to 150	

## N-Channel MOSFET

### AO4404B-HF (KO4404B-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> =250μA	0.65		1.45	V
Static Drain-Source On-Resistance	R <sub>DS(on)</sub>	V <sub>GS</sub> =10V, I <sub>D</sub> =8.5A			24	mΩ
		V <sub>GS</sub> =10V, I <sub>D</sub> =8.5A, T <sub>J</sub> =125°C			34	
		V <sub>GS</sub> =4.5V, I <sub>D</sub> =8.5A			30	
		V <sub>GS</sub> =2.5V, I <sub>D</sub> =5A			48	
On State Drain Current	I <sub>D(on)</sub>	V <sub>GS</sub> =4.5V, V <sub>DS</sub> =5V	60			A
Forward Transconductance	g <sub>FS</sub>	V <sub>DS</sub> =5V, I <sub>D</sub> =8.5A		37		S
Input Capacitance	C <sub>iss</sub>	V <sub>GS</sub> =0V, V <sub>DS</sub> =15V, f=1MHz		630		pF
Output Capacitance	C <sub>oss</sub>			75		
Reverse Transfer Capacitance	C <sub>rss</sub>			50		
Gate Resistance	R <sub>g</sub>	V <sub>GS</sub> =0V, V <sub>DS</sub> =0V, f=1MHz	1.5		4.5	Ω
Total Gate Charge	Q <sub>g</sub>	V <sub>GS</sub> =4.5V, V <sub>DS</sub> =15V, I <sub>D</sub> =8.5A		6	7	nC
Gate Source Charge	Q <sub>gs</sub>			1.3		
Gate Drain Charge	Q <sub>gd</sub>			1.8		
Turn-On DelayTime	t <sub>d(on)</sub>	V <sub>GS</sub> =10V, V <sub>DS</sub> =15V, R <sub>L</sub> =1.8Ω, R <sub>GEN</sub> =3Ω		3		ns
Turn-On Rise Time	t <sub>r</sub>			2.5		
Turn-Off DelayTime	t <sub>d(off)</sub>			25		
Turn-Off Fall Time	t <sub>f</sub>			4		
Body Diode Reverse Recovery Time	t <sub>rr</sub>	I <sub>F</sub> = 8.5A, di/dt= 100A/us		8.5		nC
Body Diode Reverse Recovery Charge	Q <sub>rr</sub>			2.6		
Maximum Body-Diode Continuous Current	I <sub>S</sub>				4	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	4404B
	KC**** F

## N-Channel MOSFET AO4404B-HF (KO4404B-HF)

■ Typical Characteristics

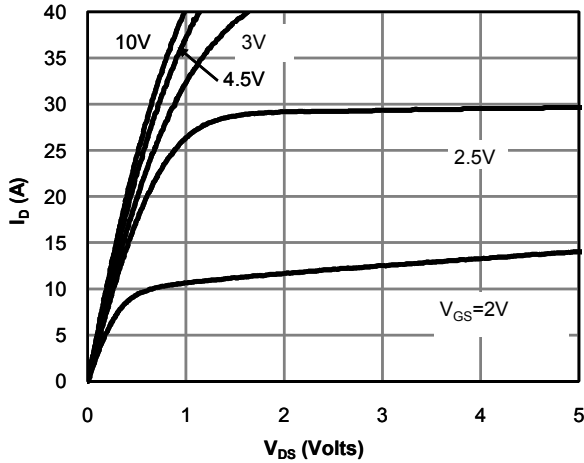


Fig 1: On-Region Characteristics (Note E)

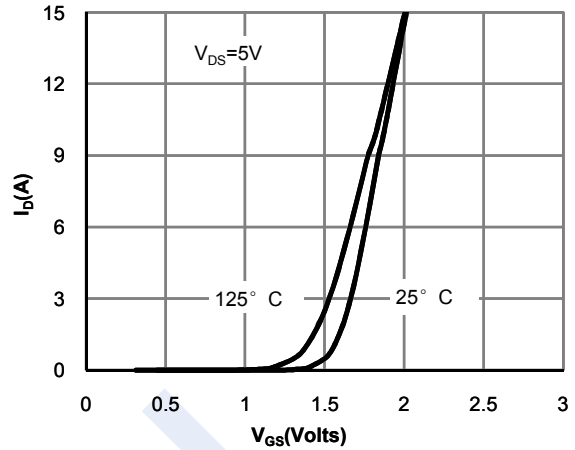


Figure 2: Transfer Characteristics (Note E)

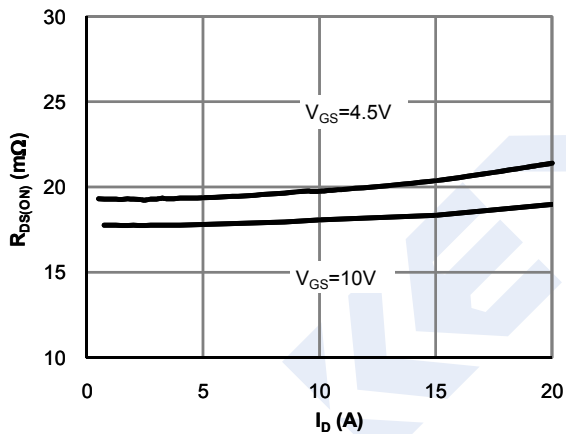


Figure 3: On-Resistance vs. Drain Current and Gate Voltage (Note E)

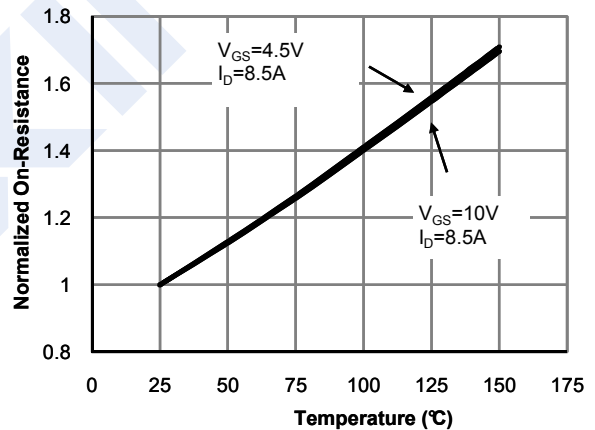


Figure 4: On-Resistance vs. Junction Temperature (Note E)

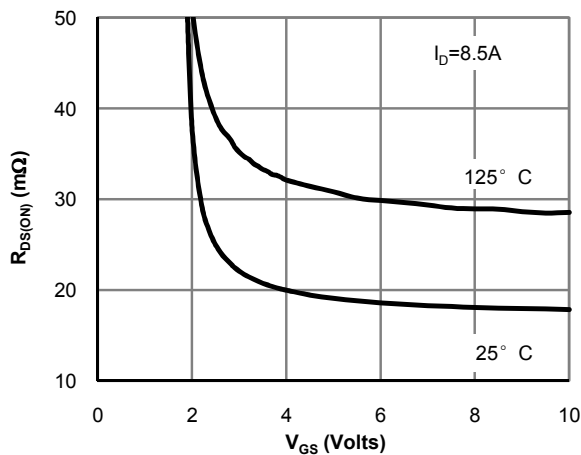


Figure 5: On-Resistance vs. Gate-Source Voltage (Note E)

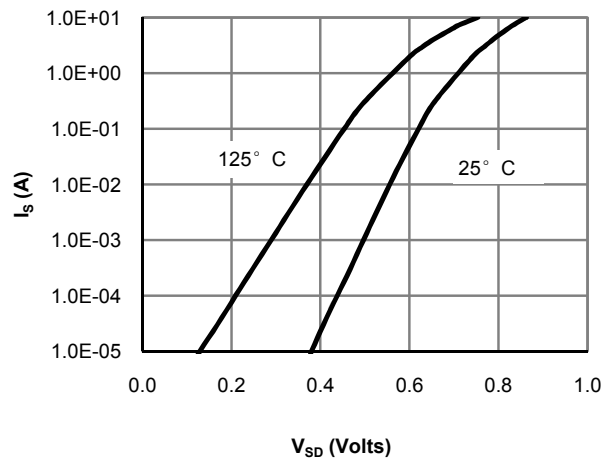


Figure 6: Body-Diode Characteristics (Note E)

## N-Channel MOSFET AO4404B-HF (KO4404B-HF)

■ Typical Characteristics

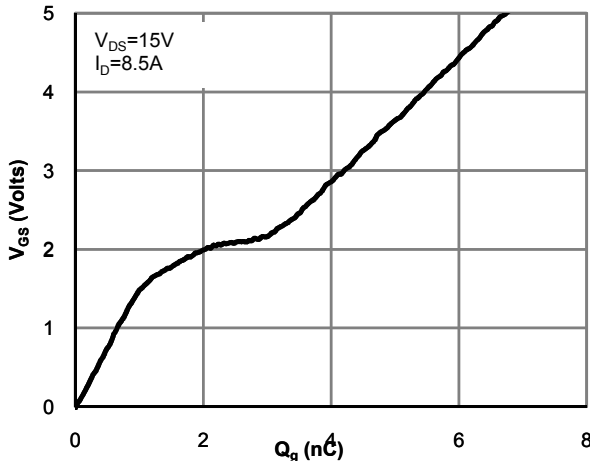


Figure 7: Gate-Charge Characteristics

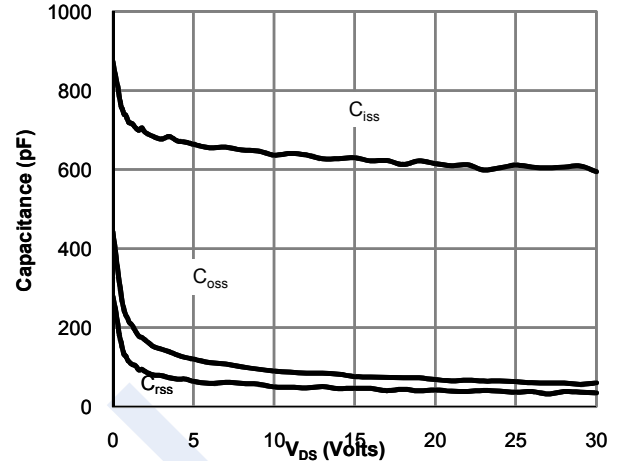


Figure 8: Capacitance Characteristics

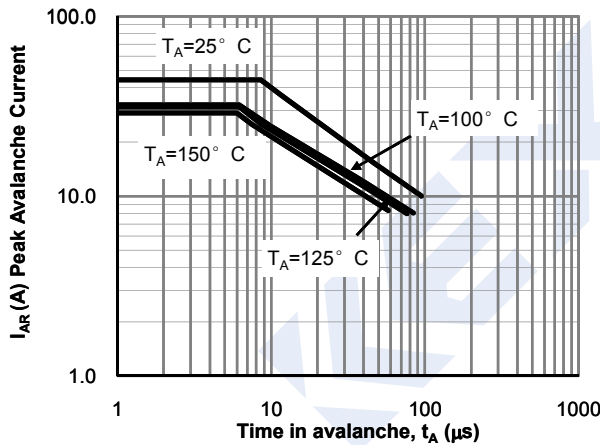


Figure 9: Single Pulse Avalanche capability (Note C)

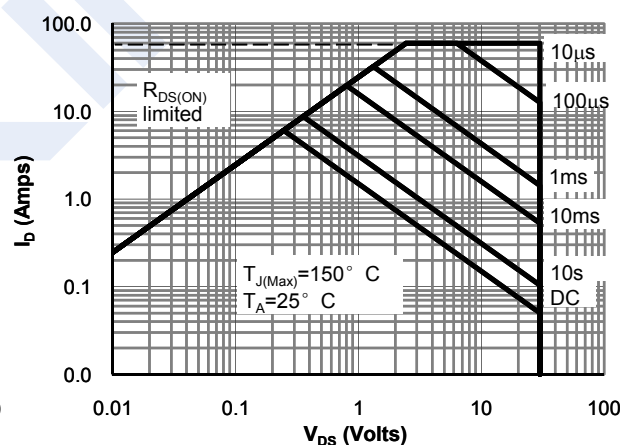


Figure 10: Maximum Forward Biased Safe Operating Area (Note F)

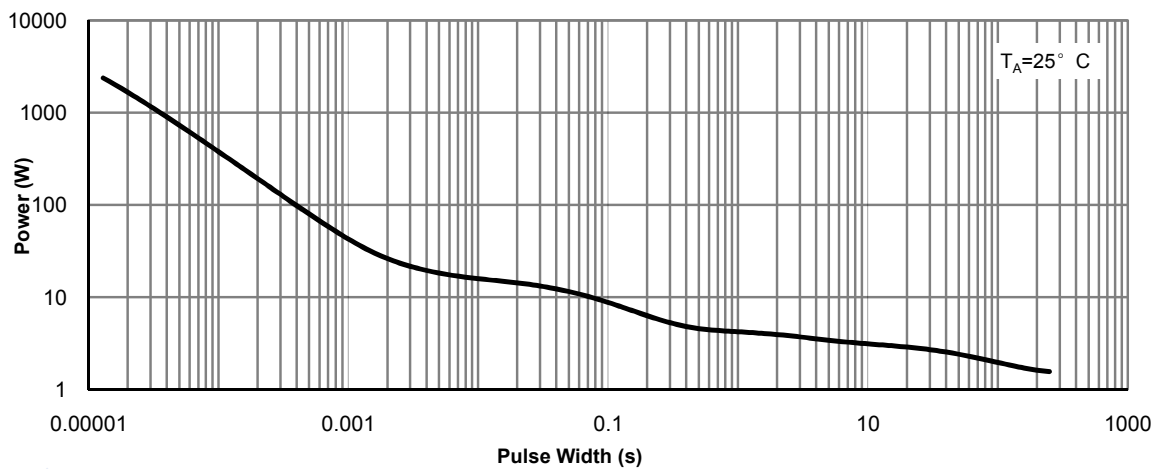


Figure 11: Single Pulse Power Rating Junction-to-Ambient (Note F)

## N-Channel MOSFET AO4404B-HF (KO4404B-HF)

■ Typical Characteristics

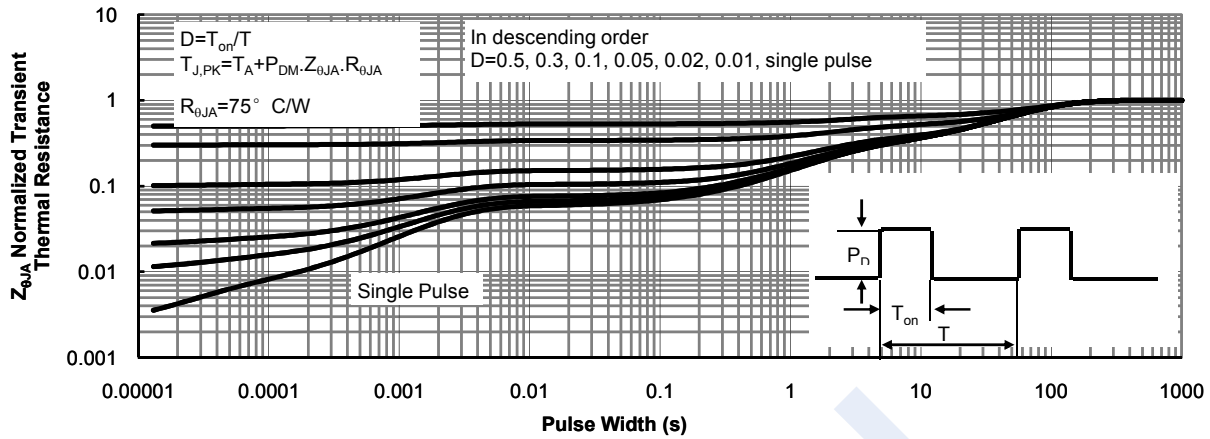


Figure 12: Normalized Maximum Transient Thermal Impedance (Note F)