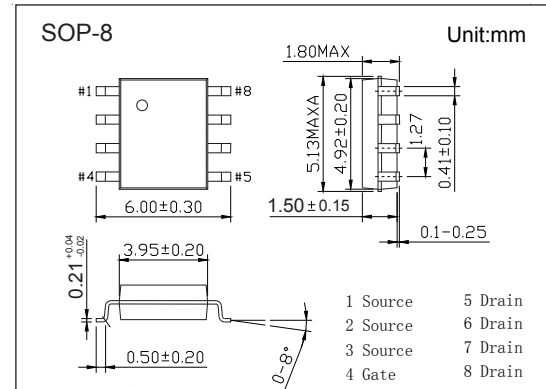
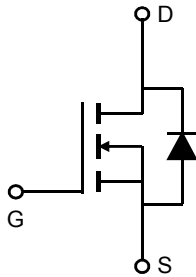


## N-Channel MOSFET

### AO4496 (KO4496)

#### ■ Features

- $V_{DS} (V) = 30V$
- $I_D = 10 A (V_{GS} = 10V)$
- $R_{DS(ON)} < 19.5m\Omega (V_{GS} = 10V)$
- $R_{DS(ON)} < 26m\Omega (V_{GS} = 4.5V)$



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

Parameter	Symbol	Rating	Unit	
Drain-Source Voltage	$V_{DS}$	30	V	
Gate-Source Voltage	$V_{GS}$	$\pm 20$		
Continuous Drain Current	$I_D$	$T_A=25^\circ C$	A	
		$T_A=70^\circ C$		7.5
Pulsed Drain Current	$I_{DM}$	50	A	
Avalanche Current	$I_{AR}$	17		
Repetitive Avalanche Energy	$L=0.1mH$	$E_{AR}$	14	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	$^\circ C$	
Junction Temperature	$T_J$	150		
Storage Temperature Range	$T_{stg}$	-55 to 150		

## N-Channel MOSFET

## AO4496 (KO4496)

## ■ 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> =±20V			±100	nA	
Gate Threshold Voltage	V <sub>GS(th)</sub>	V <sub>DS</sub> =V <sub>GS</sub> , I <sub>D</sub> =250μA	1.4		2.5	V	
Static Drain-Source On-Resistance	R <sub>DS(on)</sub>	V <sub>GS</sub> =10V, I <sub>D</sub> =10A			19.5	mΩ	
		V <sub>GS</sub> =10V, I <sub>D</sub> =10A, T <sub>J</sub> =125°C			29		
		V <sub>GS</sub> =4.5V, I <sub>D</sub> =7.5A			26		
On State Drain Current	I <sub>D(ON)</sub>	V <sub>GS</sub> =10V, V <sub>DS</sub> =5V	50			A	
Forward Transconductance	g <sub>FS</sub>	V <sub>DS</sub> =5V, I <sub>D</sub> =10A		30		S	
Input Capacitance	C <sub>iss</sub>	V <sub>GS</sub> =0V, V <sub>DS</sub> =15V, f=1MHz		550	715	pF	
Output Capacitance	C <sub>oss</sub>			110			
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	3		4.9	Ω	
Total Gate Charge (10V)	Q <sub>g</sub>	V <sub>GS</sub> =10V, V <sub>DS</sub> =15V, I <sub>D</sub> =10A		9.8	13	nC	
Total Gate Charge (4.5V)				4.6	6.1		
Gate Source Charge			Q <sub>gs</sub>		1.8		
Gate Drain Charge			Q <sub>gd</sub>		2.2		
Turn-On DelayTime	t <sub>d(on)</sub>	V <sub>GS</sub> =10V, V <sub>DS</sub> =15V, R <sub>L</sub> =1.5Ω, R <sub>GEN</sub> =3Ω		5		ns	
Turn-On Rise Time	t <sub>r</sub>			3.2			
Turn-Off DelayTime	t <sub>d(off)</sub>			24			
Turn-Off Fall Time	t <sub>f</sub>			6			
Body Diode Reverse Recovery Time	t <sub>rr</sub>	I <sub>F</sub> =10A, di/dt=500A/us		22	29	nC	
Body Diode Reverse Recovery Charge	Q <sub>rr</sub>			14			
Maximum Body-Diode Continuous Current	I <sub>S</sub>				3	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 us pulses, duty cycle 0.5% max.

## ■ Marking

Marking	4496
	KC****

### N-Channel MOSFET

### AO4496 (KO4496)

■ Typical Characteristics

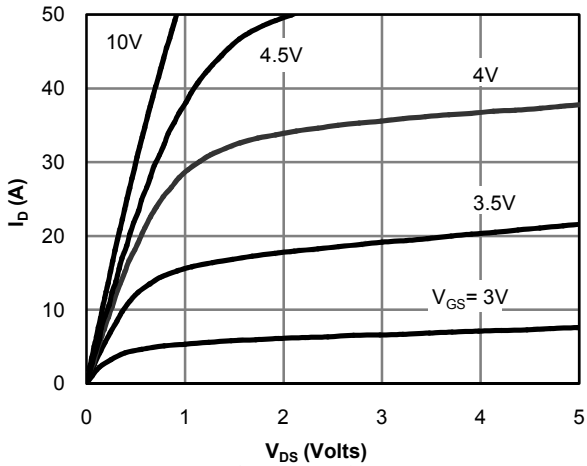


Figure 1: On-Region Characteristics

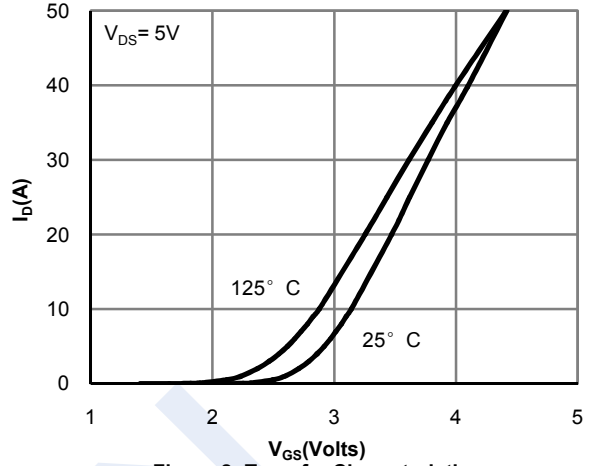


Figure 2: Transfer Characteristics

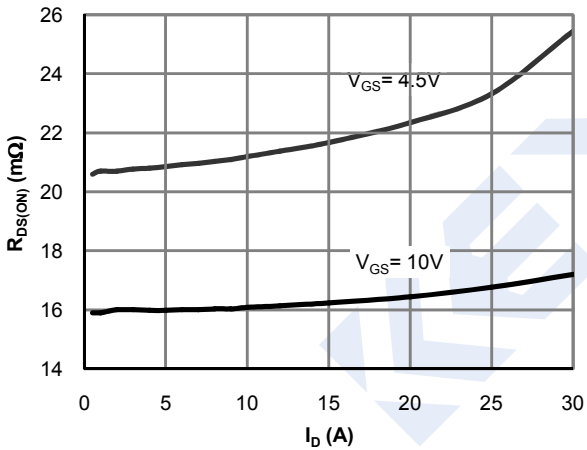


Figure 3: On-Resistance vs. Drain Current and Gate Voltage

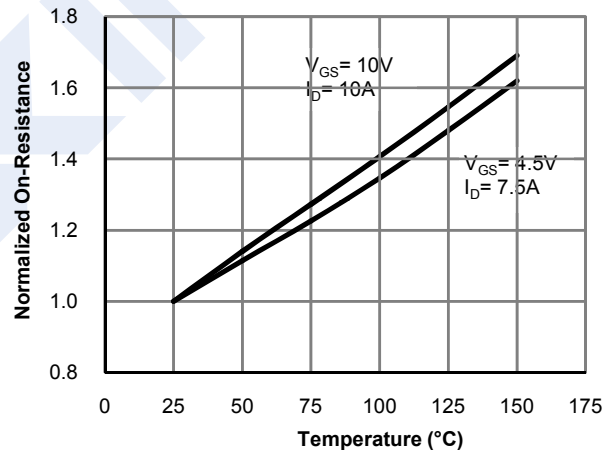


Figure 4: On-Resistance vs. Junction Temperature

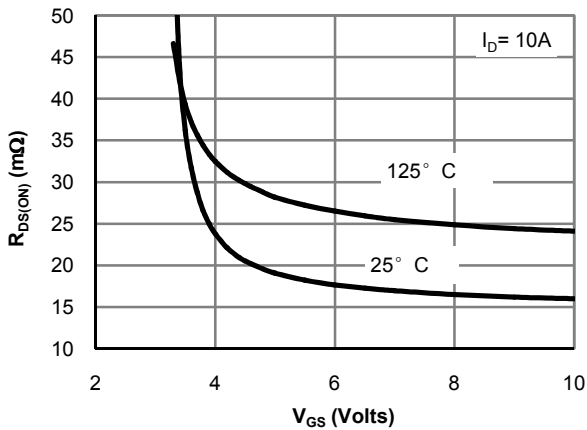


Figure 5: On-Resistance vs. Gate-Source Voltage

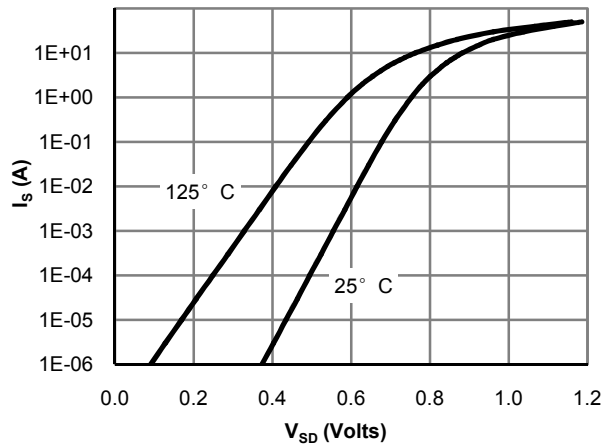


Figure 6: Body-Diode Characteristics

## N-Channel MOSFET AO4496 (KO4496)

■ Typical Characteristics

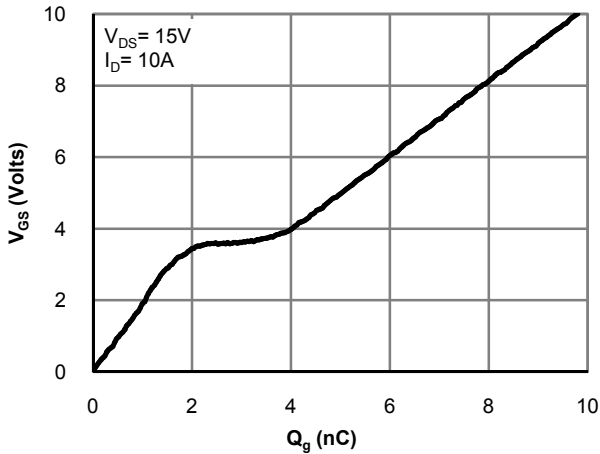


Figure 7: Gate-Charge Characteristics

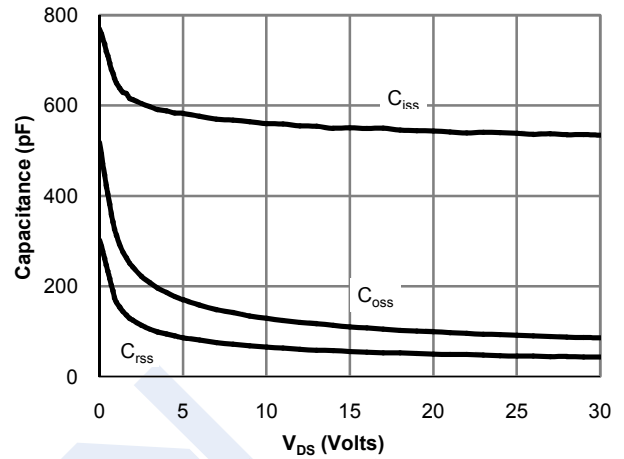


Figure 8: Capacitance Characteristics

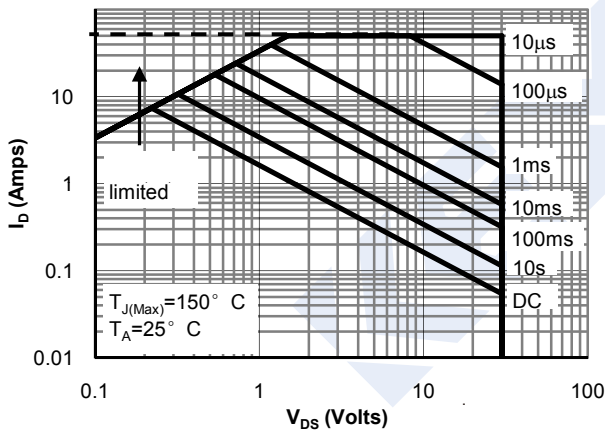


Figure 9: Maximum Forward Biased Safe Operating Area (Note E)

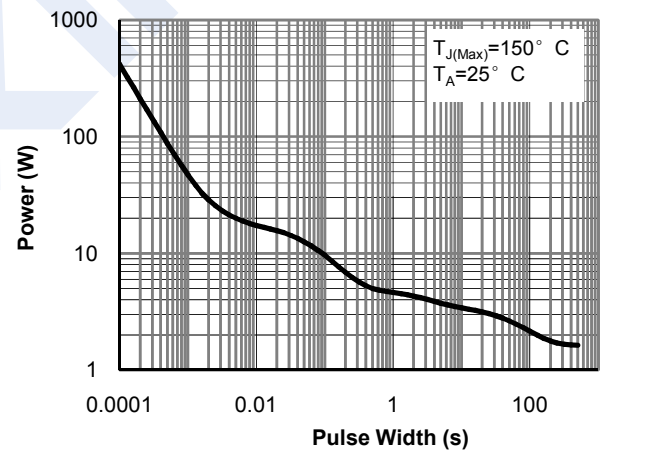


Figure 10: Single Pulse Power Rating Junction-to-Ambient (Note E)

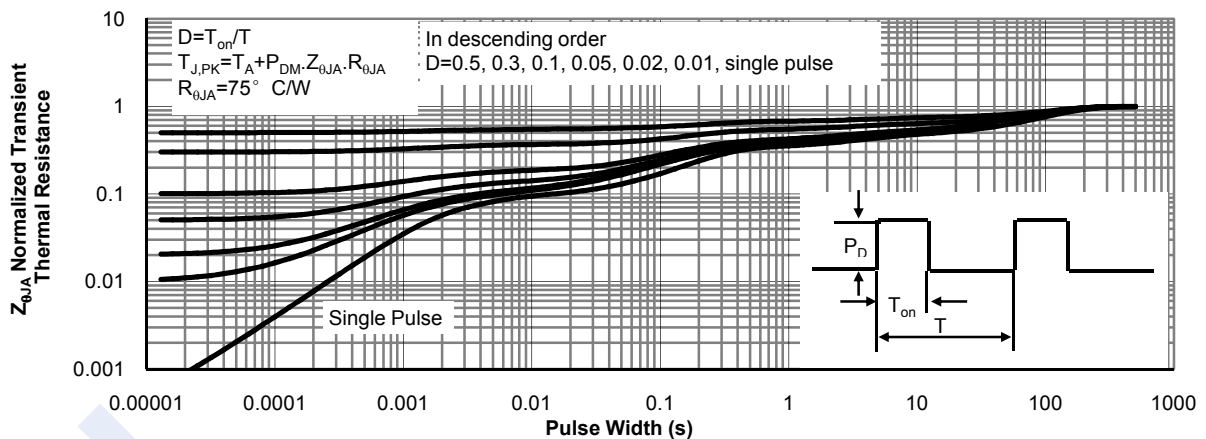


Figure 11: Normalized Maximum Transient Thermal Impedance (Note E)