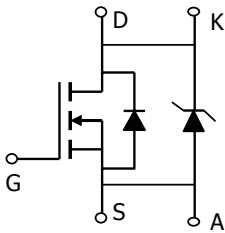
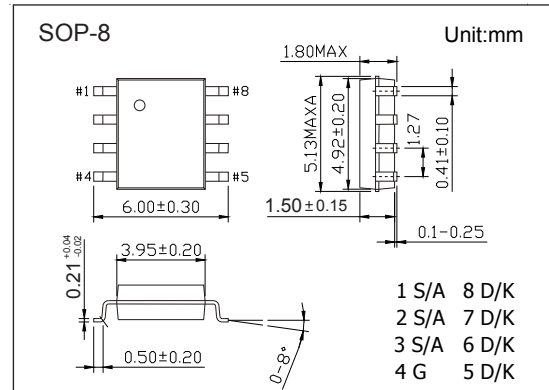


## N-Channel MOSFET

## AO4702 (KO4702)

## ■ Features

- $V_{DS} (V) = 30V$
- $I_D = 11 A (V_{GS} = 10V)$
- $R_{DS(ON)} < 16m\Omega (V_{GS} = 10V)$
- $R_{DS(ON)} < 25m\Omega (V_{GS} = 4.5V)$
- $V_{DS} (V) = 30V, I_F = 3A, V_F < 0.5V @ 1A$

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

Parameter	Symbol	MOSFET	Schottky	Unit
Drain-Source Voltage	$V_{DS}$	30		V
Gate-Source Voltage	$V_{GS}$	$\pm 20$		
Schottky Reverse Voltage	$V_{KA}$		30	
Continuous Drain Current	$I_D$	11		A
Pulsed Drain Current	$I_{DM}$	50		
Continuous Forward Current	$I_F$		4.4	
Pulsed Diode Forward Current	$I_{FM}$		30	
Power Dissipation	$P_D$	3	3	W
Thermal Resistance.Junction- to-Ambient	$R_{thJA}$	40	40	$^\circ C/W$
Thermal Resistance.Junction- to-Lead	$R_{thJL}$	24	30	
Junction Temperature	$T_J$	150		$^\circ C$
Storage Temperature Range	$T_{stg}$	-55 to 150		

## N-Channel MOSFET

### AO4702 (KO4702)

#### ■ 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			0.05	mA	
		V <sub>DS</sub> =30V, V <sub>GS</sub> =0V, T <sub>J</sub> =125°C			10		
		V <sub>DS</sub> =30V, V <sub>GS</sub> =0V, T <sub>J</sub> =150°C			20		
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> =250 μA	1		3	V	
Static Drain-Source On-Resistance	R <sub>DS(on)</sub>	V <sub>GS</sub> =10V, I <sub>D</sub> =11A			16	mΩ	
		V <sub>GS</sub> =10V, I <sub>D</sub> =11A, T <sub>J</sub> =125°C			21		
		V <sub>GS</sub> =4.5V, I <sub>D</sub> =8A			25		
On State Drain Current	I <sub>D(ON)</sub>	V <sub>GS</sub> =4.5V, V <sub>DS</sub> =5V	40			A	
Forward Transconductance	g <sub>FS</sub>	V <sub>DS</sub> =5V, I <sub>D</sub> =11A		25		S	
Input Capacitance	C <sub>iss</sub>	V <sub>GS</sub> =0V, V <sub>DS</sub> =15V, f=1MHz		1040	1250	pF	
Output Capacitance	C <sub>oss</sub>			212			
Reverse Transfer Capacitance	C <sub>rss</sub>			121			
Gate Resistance	R <sub>g</sub>	V <sub>GS</sub> =0V, V <sub>DS</sub> =0V, f=1MHz		0.7	0.85	Ω	
Total Gate Charge (10V)	Q <sub>g</sub>	V <sub>GS</sub> =10V, V <sub>DS</sub> =15V, I <sub>D</sub> =11A		19.8	24	nC	
Total Gate Charge (4.5V)				9.8	12		
Gate Source Charge			Q <sub>gs</sub>		2.5		
Gate Drain Charge			Q <sub>gd</sub>		3.5		
Turn-On DelayTime	t <sub>d(on)</sub>	V <sub>GS</sub> =10V, V <sub>DS</sub> =15V, R <sub>L</sub> =1.35Ω, R <sub>GEN</sub> =3Ω		4.5	7	ns	
Turn-On Rise Time	t <sub>r</sub>			3.9	7		
Turn-Off DelayTime	t <sub>d(off)</sub>			17.4	30		
Turn-Off Fall Time	t <sub>f</sub>			3.2	5.7		
Body Diode Reverse Recovery Time	t <sub>rr</sub>		I <sub>F</sub> =11A, di/dt=100A/us		19		23
Body Diode Reverse Recovery Charge	Q <sub>rr</sub>			9	11	nC	
Body-Diode + Schottky Continuous Current	I <sub>S</sub>				5	A	
Diode + Schottky Forward Voltage	V <sub>SD</sub>	I <sub>S</sub> =1A, V <sub>GS</sub> =0V			0.5	V	

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

#### ■ Marking

Marking	4702 KC****
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## N-Channel MOSFET AO4702 (KO4702)

■ Typical Characteristics

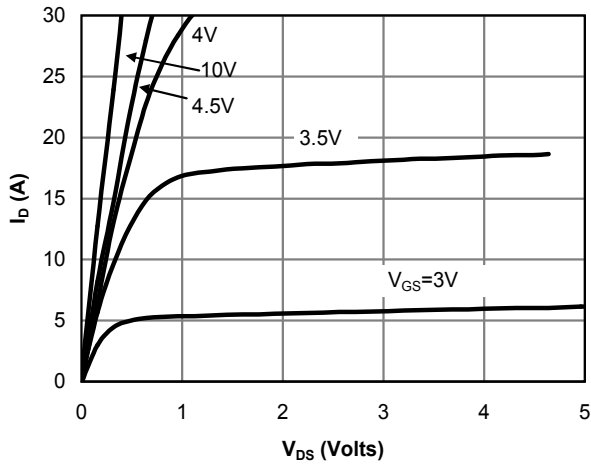


Fig 1: On-Region Characteristics

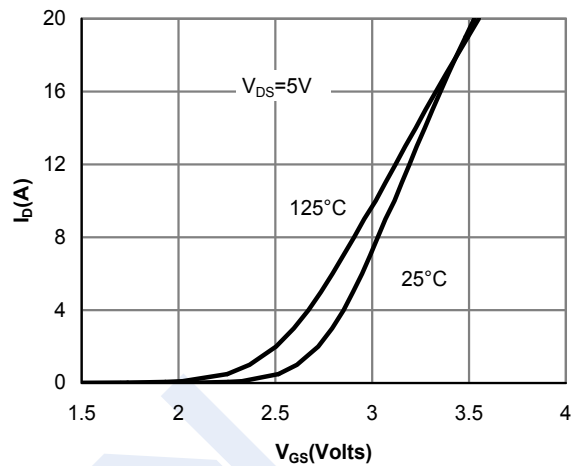


Figure 2: Transfer Characteristics

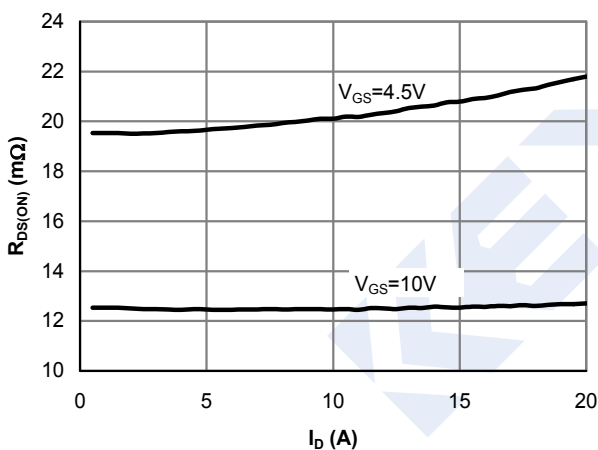


Figure 3: On-Resistance vs. Drain Current and Gate Voltage

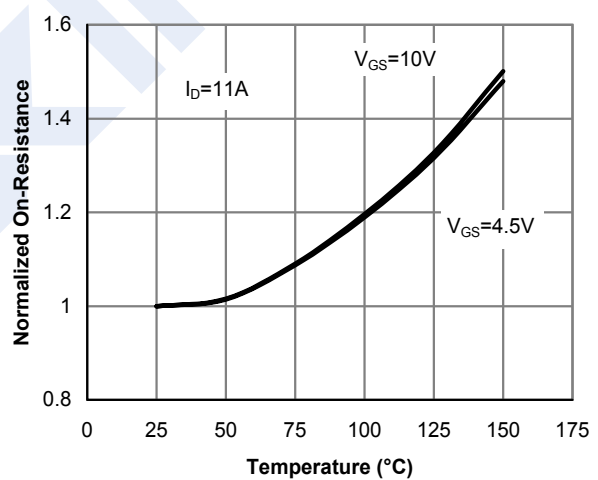


Figure 4: On-Resistance vs. Junction Temperature

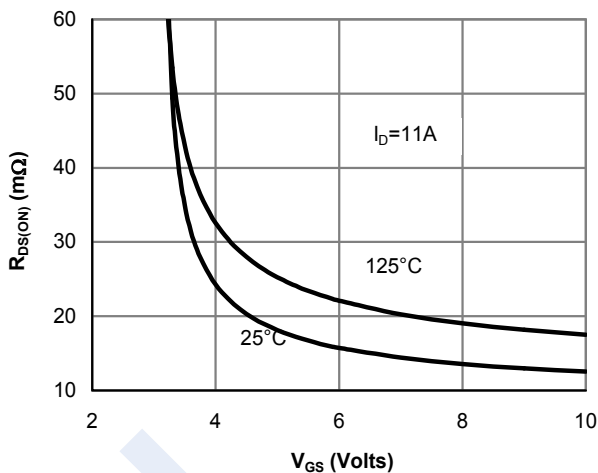


Figure 5: On-Resistance vs. Gate-Source Voltage

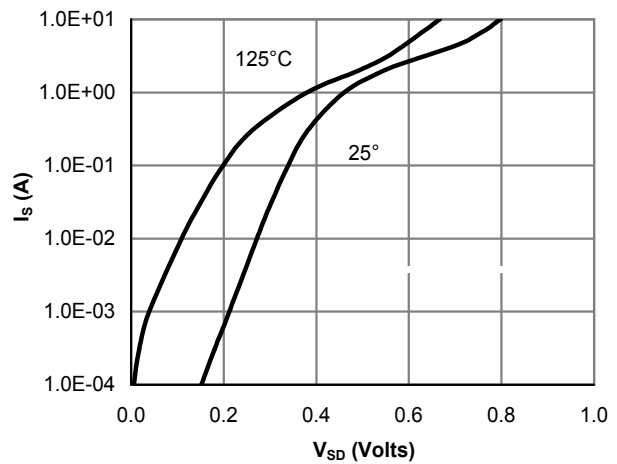


Figure 6: Body-Diode Characteristics

## N-Channel MOSFET AO4702 (KO4702)

■ Typical Characteristics

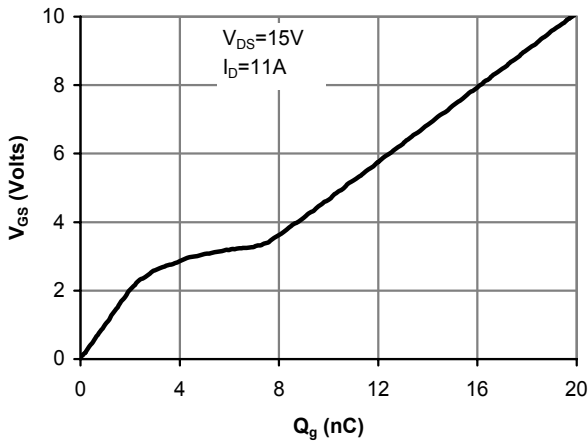


Figure 7: Gate-Charge Characteristics

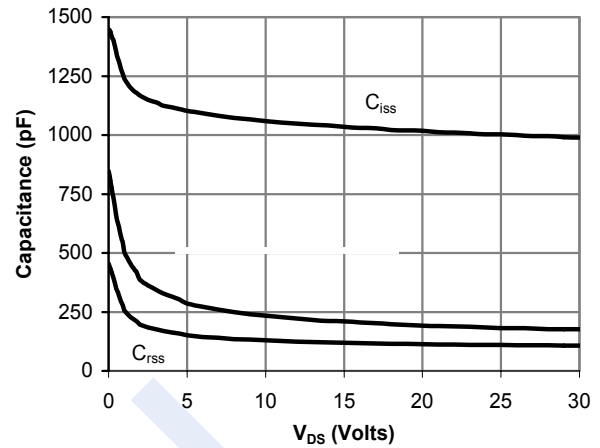


Figure 8: Capacitance Characteristics

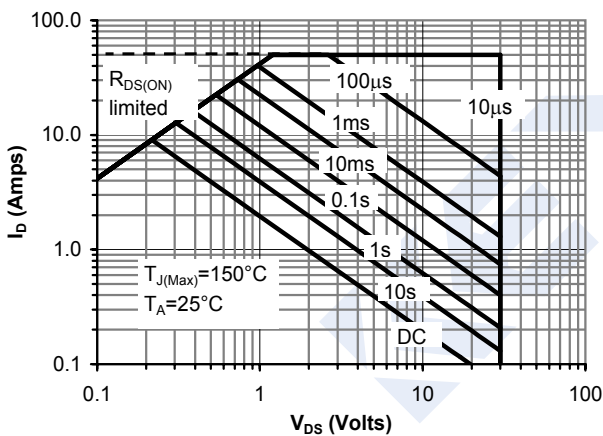


Figure 9: Maximum Forward Biased Safe Operating Area

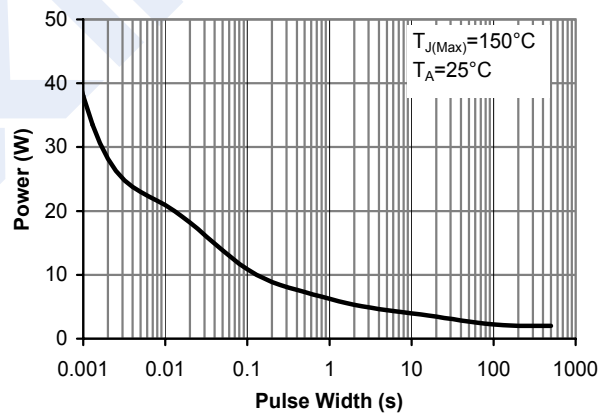


Figure 10: Single Pulse Power Rating Junction-to-Ambient (Note E)

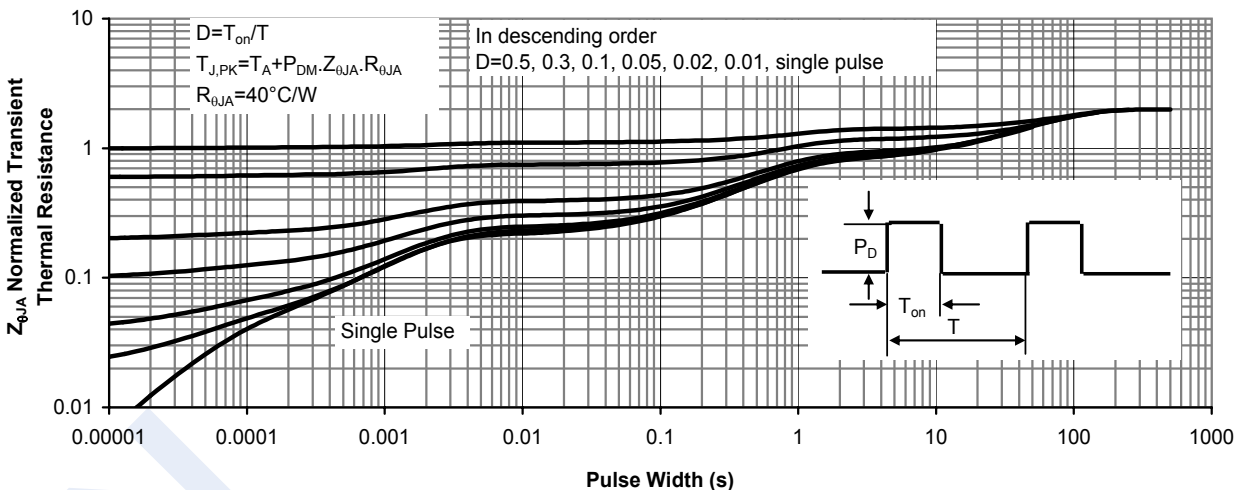


Figure 11: Normalized Maximum Transient Thermal Impedance