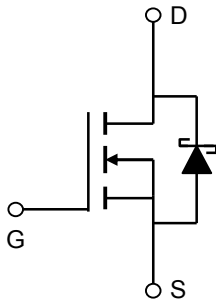
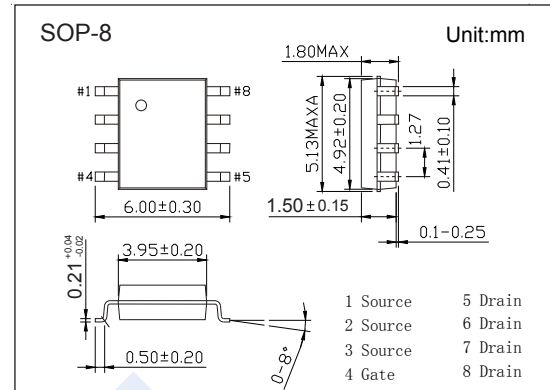


## N-Channel MOSFET

## AO4718 (KO4718)

## ■ Features

- $V_{DS} = 30V$
- $I_D = 15 A$  ( $V_{GS} = 10V$ )
- $R_{DS(ON)} < 9m\Omega$  ( $V_{GS} = 10V$ )
- $R_{DS(ON)} < 14m\Omega$  ( $V_{GS} = 4.5V$ )
- SRFET™ Soft Recovery MOSFET: Integrated Schottky Diode

■ 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	$I_D$	$T_A=25^\circ C$	15	
		$T_A=70^\circ C$	12	
Pulsed Drain Current	$I_{DM}$	80	A	
Avalanche Current	$I_{AS}, I_{AR}$	25		
Repetitive Avalanche Energy	$L=0.3mH$	$E_{AS}, E_{AR}$	94	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	$^\circ C$	
Storage Temperature Range	$T_{stg}$	-55 to 150		

## N-Channel MOSFET

### AO4718 (KO4718)

#### ■ 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> =250μA, 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			0.1	mA	
		V <sub>DS</sub> =30V, V <sub>GS</sub> =0V, T <sub>J</sub> =125°C			10		
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 μ A	1.3		2.5	V	
Static Drain-Source On-Resistance	R <sub>DS(on)</sub>	V <sub>GS</sub> =10V, I <sub>D</sub> =15A			9	mΩ	
		V <sub>GS</sub> =10V, I <sub>D</sub> =15A T <sub>J</sub> =125°C			13		
		V <sub>GS</sub> =5V, I <sub>D</sub> =12A			14		
On State Drain Current	I <sub>D(ON)</sub>	V <sub>GS</sub> =10V, V <sub>DS</sub> =5V	80			A	
Forward Transconductance	g <sub>FS</sub>	V <sub>DS</sub> =5V, I <sub>D</sub> =15A		43		S	
Input Capacitance	C <sub>iss</sub>	V <sub>GS</sub> =0V, V <sub>DS</sub> =15V, f=1MHz		1620	1950	pF	
Output Capacitance	C <sub>oss</sub>			382			
Reverse Transfer Capacitance	C <sub>rss</sub>			162			
Gate Resistance	R <sub>g</sub>	V <sub>GS</sub> =0V, V <sub>DS</sub> =0V, f=1MHz		1.2	1.8	Ω	
Total Gate Charge (10V)	Q <sub>g</sub>	V <sub>GS</sub> =10V, V <sub>DS</sub> =15V, I <sub>D</sub> =15A		24.7	32	nC	
Total Gate Charge (4.5V)				12	16		
Gate Source Charge			Q <sub>gs</sub>		4		
Gate Drain Charge			Q <sub>gd</sub>		5.6		
Turn-On DelayTime	t <sub>d(on)</sub>	V <sub>GS</sub> =10V, V <sub>DS</sub> =15V, R <sub>L</sub> =1Ω, R <sub>GEN</sub> =3Ω		6.3		ns	
Turn-On Rise Time	t <sub>r</sub>			9.3			
Turn-Off DelayTime	t <sub>d(off)</sub>			21.6			
Turn-Off Fall Time	t <sub>f</sub>			5.4			
Body Diode Reverse Recovery Time	t <sub>rr</sub>	I <sub>F</sub> = 15A, di/dt= 300A/us		19	23	nC	
Body Diode Reverse Recovery Charge	Q <sub>rr</sub>			36.4			
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			0.5	V	

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

#### ■ Marking

Marking	4718 KC****
---------	----------------

## N-Channel MOSFET AO4718 (KO4718)

■ Typical Characteristics

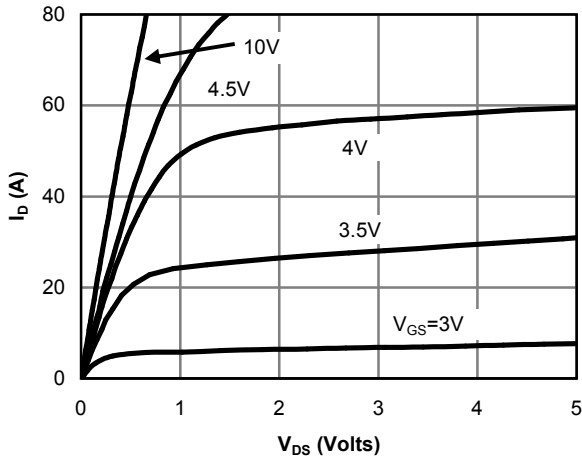


Figure 1: On-Region Characteristics

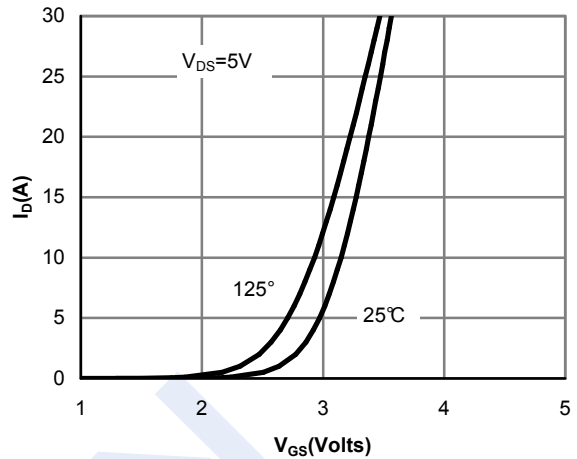


Figure 2: Transfer Characteristics

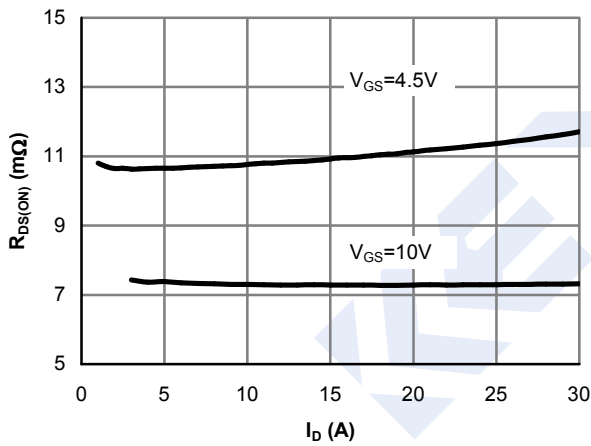


Figure 3: On-Resistance vs. Drain Current and Gate Voltage

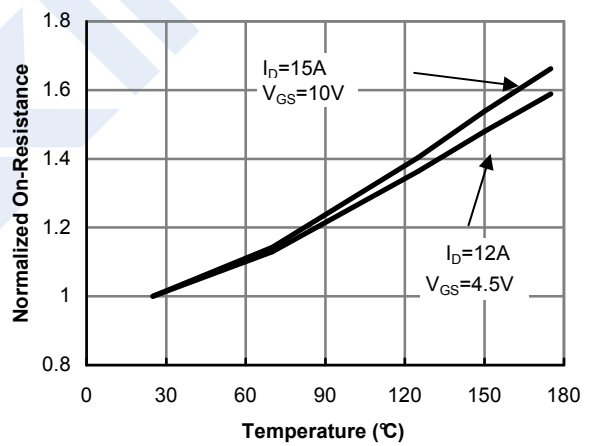


Figure 4: On-Resistance vs. Junction Temperature

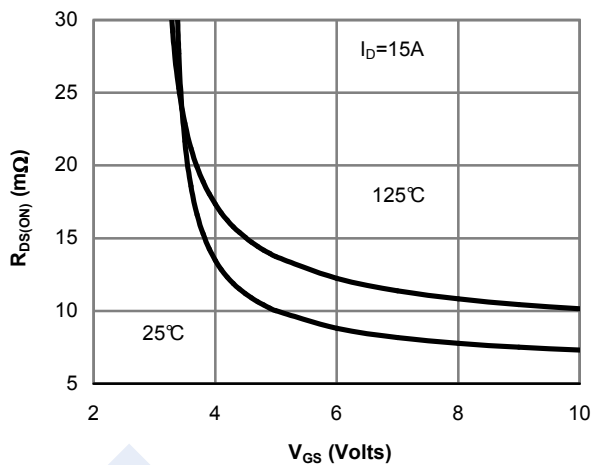


Figure 5: On-Resistance vs. Gate-Source Voltage

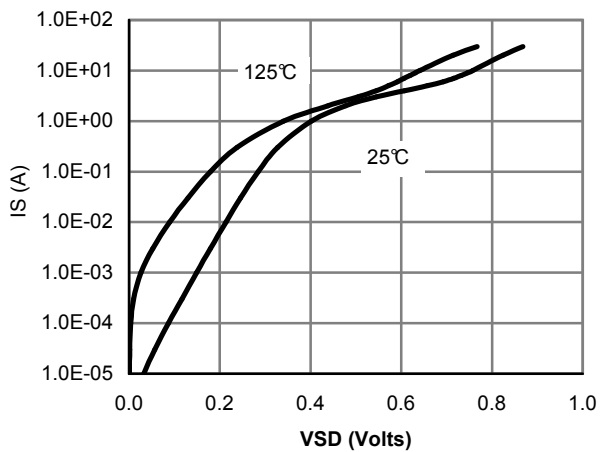


Figure 6: Body-Diode Characteristics

## N-Channel MOSFET AO4718 (KO4718)

■ Typical Characteristics

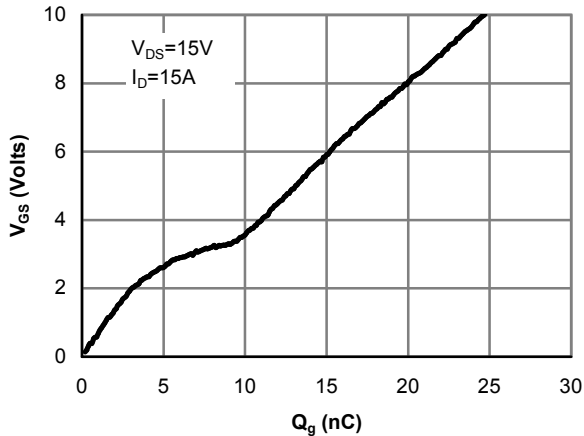


Figure 7: Gate-Charge Characteristics

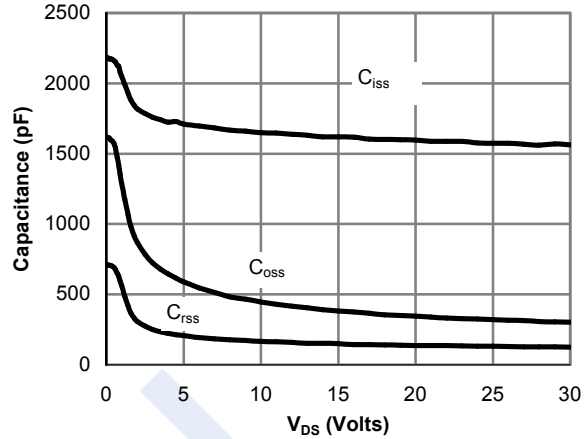


Figure 8: Capacitance Characteristics

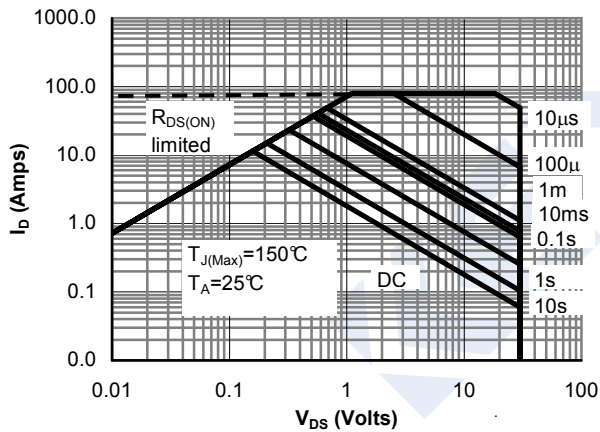


Figure 9: Maximum Forward Biased Safe Operating Area (Note E)

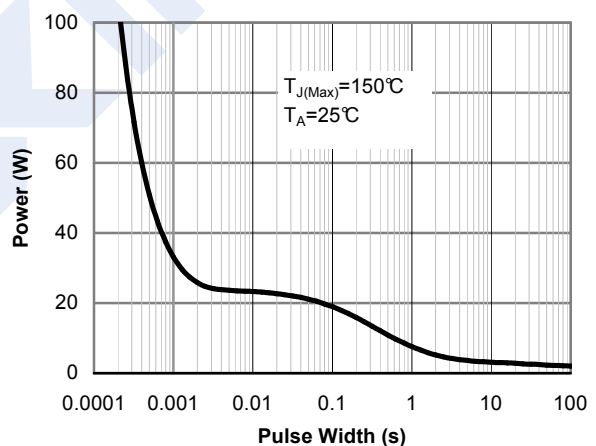


Figure 10: Single Pulse Power Rating Junction-to-Ambient (Note E)

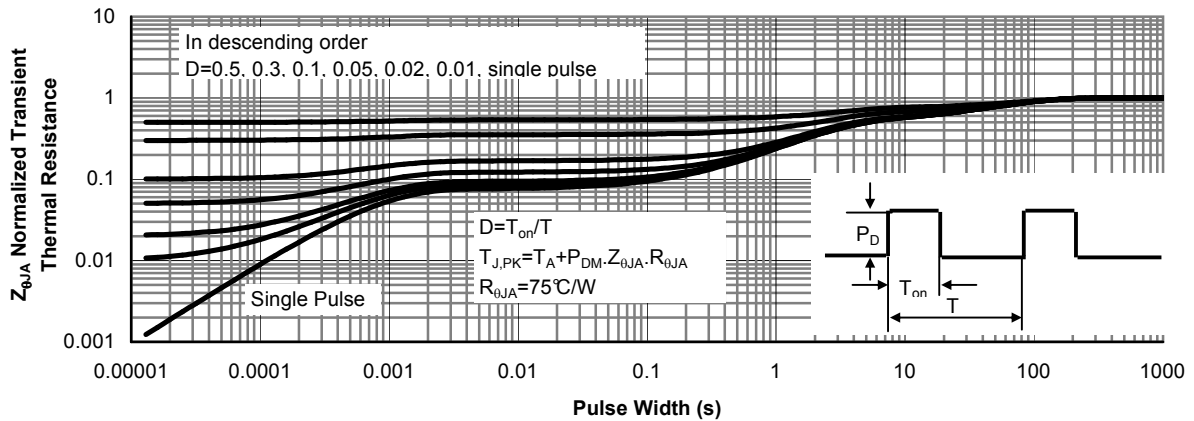


Figure 11: Normalized Maximum Transient Thermal Impedance (Note E)