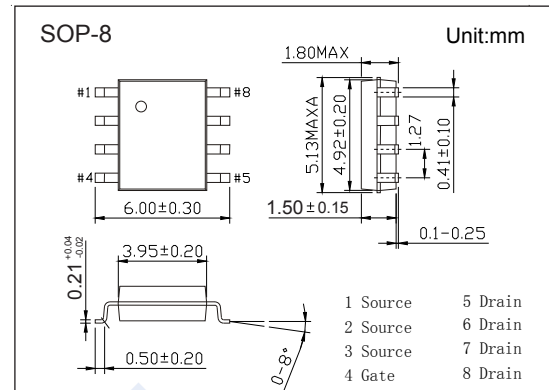
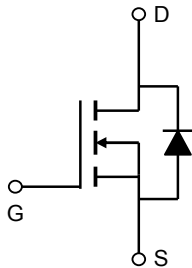


## N-Channel MOSFET

## AO4498 (KO4498)

## ■ Features

- $V_{DS} (V) = 30V$
- $I_D = 18 A (V_{GS} = 10V)$
- $R_{DS(ON)} < 5.5m\Omega (V_{GS} = 10V)$
- $R_{DS(ON)} < 7.5m\Omega (V_{GS} = 4.5V)$

■ 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	
		$T_A=70^\circ C$		14
Pulsed Drain Current	$I_{DM}$	140	A	
Avalanche Current	$I_{AR}$	42		
Repetitive Avalanche Energy	$L=0.1mH$	$E_{AR}$	88	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

## AO4498 (KO4498)

## ■ 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	1.3		2.5	V
Static Drain-Source On-Resistance	R <sub>DS(on)</sub>	V <sub>GS</sub> =10V, I <sub>D</sub> =18A			5.5	mΩ
		V <sub>GS</sub> =10V, I <sub>D</sub> =18A T <sub>J</sub> =125°C			8	
		V <sub>GS</sub> =4.5V, I <sub>D</sub> =16A			7.5	
On State Drain Current	I <sub>D(on)</sub>	V <sub>GS</sub> =10V, V <sub>DS</sub> =5V	140			A
Forward Transconductance	g <sub>FS</sub>	V <sub>DS</sub> =5V, I <sub>D</sub> =18A		53		S
Input Capacitance	C <sub>iss</sub>	V <sub>GS</sub> =0V, V <sub>DS</sub> =15V, f=1MHz		1910	2300	pF
Output Capacitance	C <sub>oss</sub>			316		
Reverse Transfer Capacitance	C <sub>rss</sub>			227		
Gate Resistance	R <sub>g</sub>	V <sub>GS</sub> =0V, V <sub>DS</sub> =0V, f=1MHz	0.7		2.1	Ω
Total Gate Charge (10V)	Q <sub>g</sub>	V <sub>GS</sub> =10V, V <sub>DS</sub> =15V, I <sub>D</sub> =18A		37	44.5	nC
Total Gate Charge (4.5V)				18		
Gate Source Charge	Q <sub>gs</sub>			4.8		
Gate Drain Charge	Q <sub>gd</sub>			11		
Turn-On DelayTime	t <sub>d(on)</sub>		V <sub>GS</sub> =10V, V <sub>DS</sub> =15V, R <sub>L</sub> =0.83Ω, R <sub>GEN</sub> =3Ω		8.1	
Turn-On Rise Time	t <sub>r</sub>			8.6		
Turn-Off DelayTime	t <sub>d(off)</sub>			29		
Turn-Off Fall Time	t <sub>f</sub>			8		
Body Diode Reverse Recovery Time	t <sub>rr</sub>	I <sub>F</sub> = 18A, di/dt= 500A/us		14	17	nC
Body Diode Reverse Recovery Charge	Q <sub>rr</sub>			40		
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 us pulses, duty cycle 0.5% max.

## ■ Marking

Marking	4498 KC****
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### N-Channel MOSFET

### AO4498 (KO4498)

■ Typical Characteristics

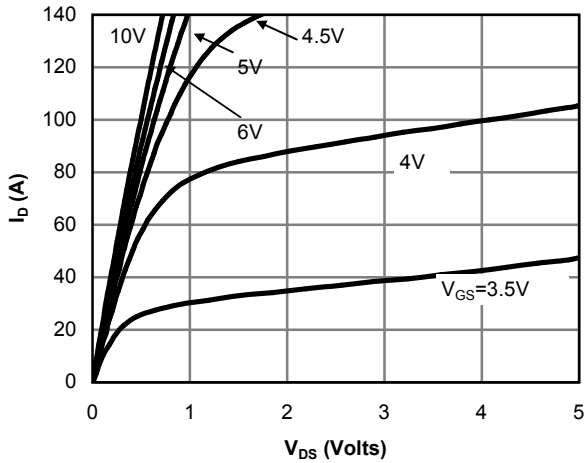


Fig 1: On-Region Characteristics (Note E)

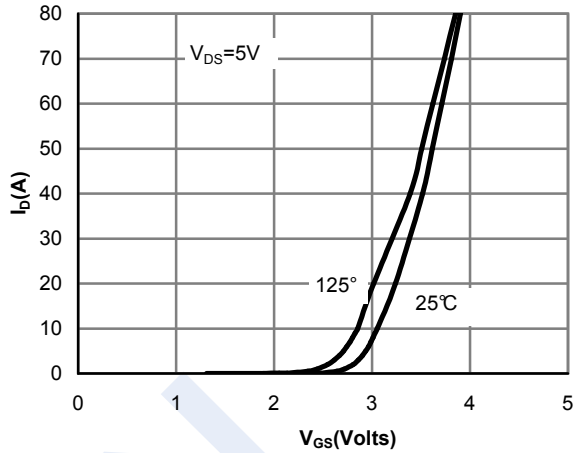


Figure 2: Transfer Characteristics (Note E)

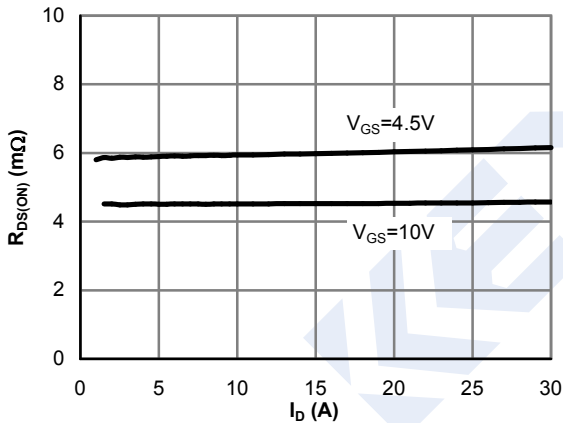


Figure 3: On-Resistance vs. Drain Current and Gate Voltage (Note E)

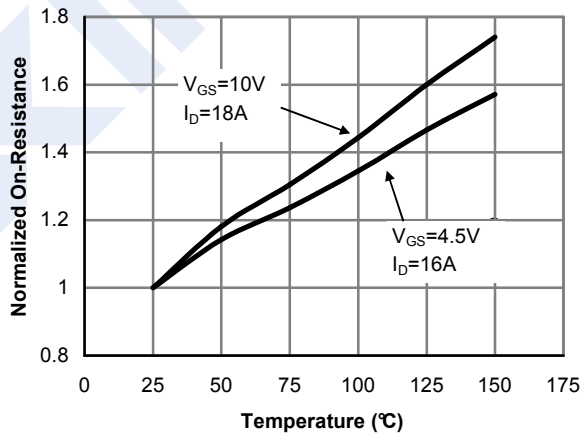


Figure 4: On-Resistance vs. Junction Temperature (Note E)

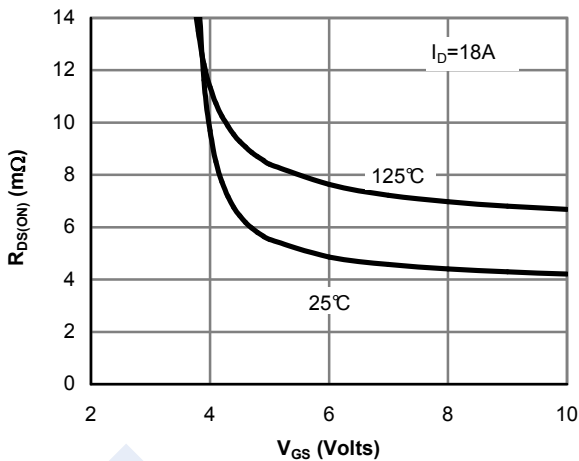


Figure 5: On-Resistance vs. Gate-Source Voltage (Note E)

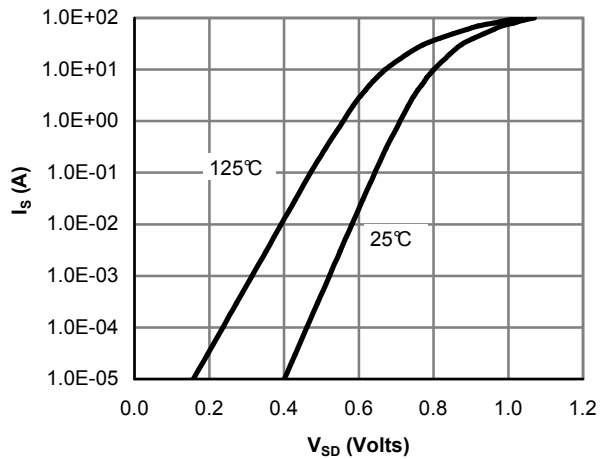


Figure 6: Body-Diode Characteristics (Note E)

### N-Channel MOSFET

### AO4498 (KO4498)

■ Typical Characteristics

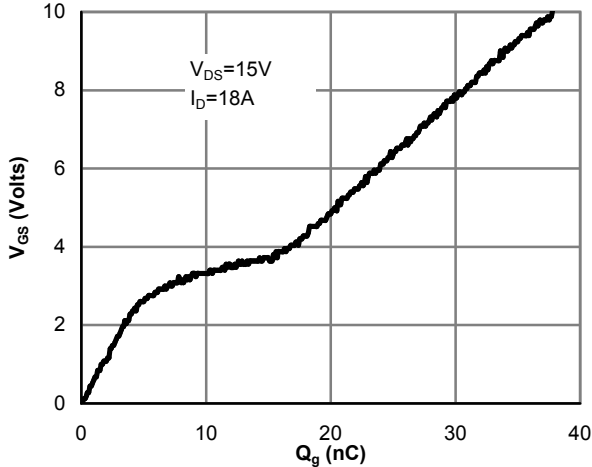


Figure 7: Gate-Charge Characteristics

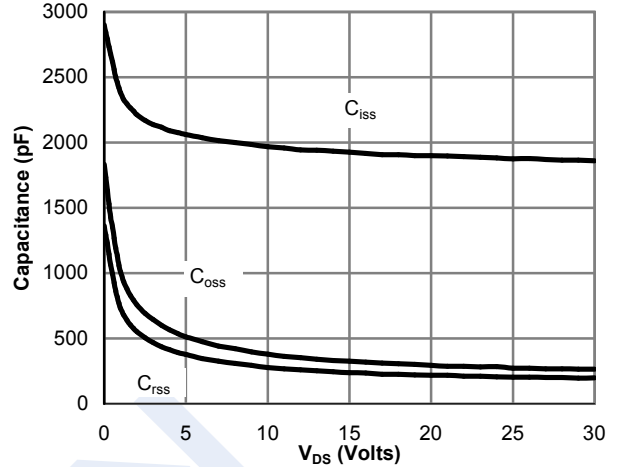


Figure 8: Capacitance Characteristics

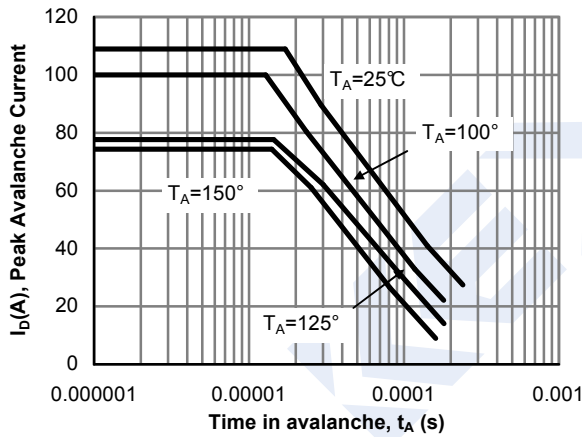


Figure 12: Single Pulse Avalanche capability (Note C)

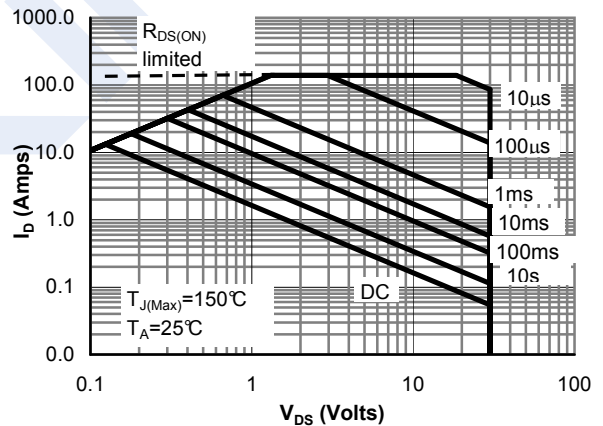


Figure 9: Maximum Forward Biased Safe Operating Area (Note F)

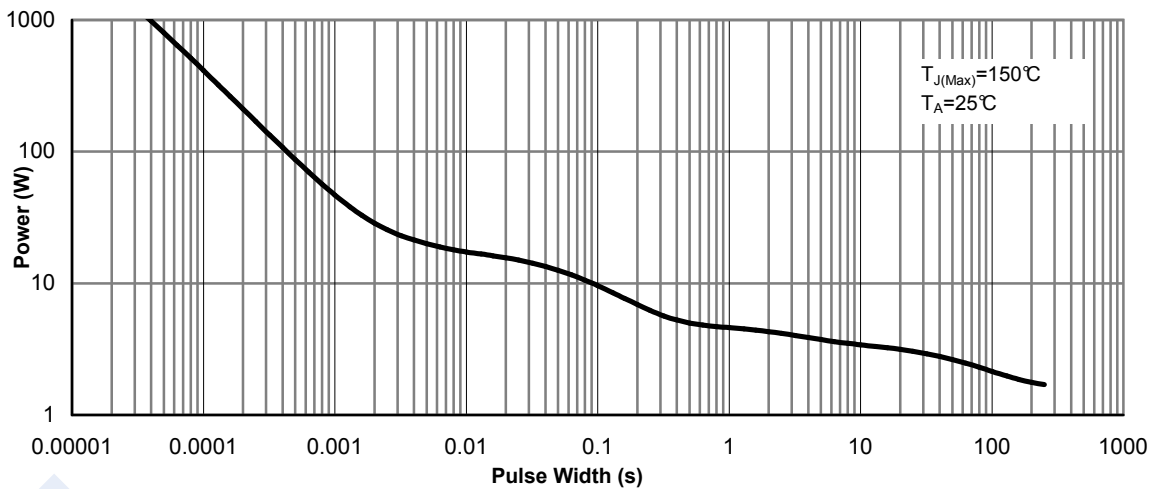


Figure 15: Single Pulse Power Rating Junction-to-Ambient (Note F)

## N-Channel MOSFET AO4498 (KO4498)

■ Typical Characteristics

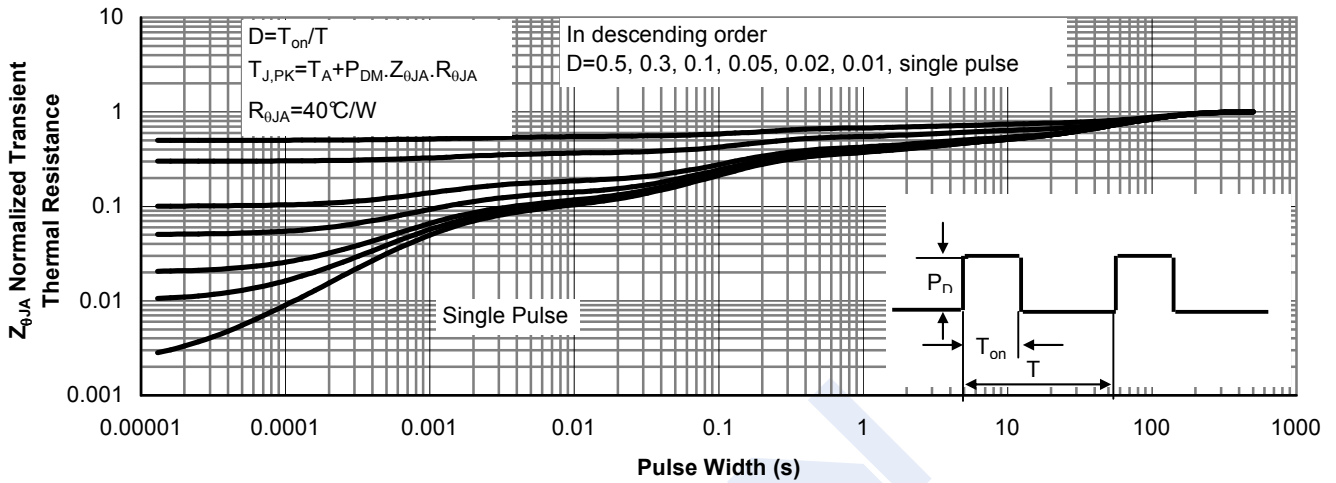


Figure 16: Normalized Maximum Transient Thermal Impedance (Note F)