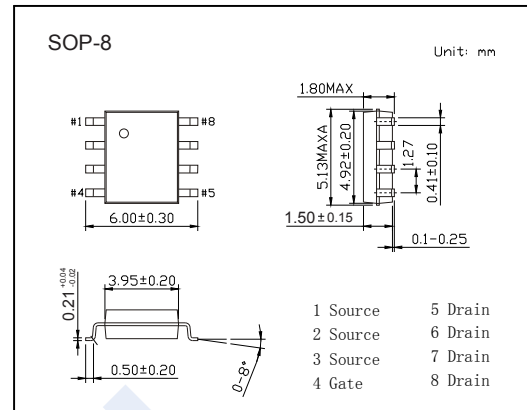
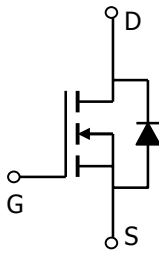


## N-Channel MOSFET

## AO4444 (KO4444)

## ■ Features

- $V_{DS} (V) = 30V$
- $I_D = 20 A (V_{GS} = 10V)$
- $R_{DS(ON)} < 5.5m\Omega (V_{GS} = 10V)$
- $R_{DS(ON)} < 7.5m\Omega (V_{GS} = 4.5V)$

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

Parameter	Symbol	Rating	Unit
Drain-Source Voltage	$V_{DS}$	30	V
Gate-Source Voltage	$V_{GS}$	$\pm 20$	V
Continuous Drain Current	$I_D$	$T_A=25^\circ C$	20
		$T_A=70^\circ C$	17
Pulsed Drain Current	$I_{DM}$	80	A
Power Dissipation	$P_D$	$T_A=25^\circ C$	3
		$T_A=70^\circ C$	2.1
Thermal Resistance.Junction- to-Ambient	$R_{thJA}$	$t \leq 10s$	40
		Steady-State	75
Thermal Resistance.Junction- to-Lead	$R_{thJL}$	24	$^\circ C/W$
Junction Temperature	$T_J$	150	$^\circ C$
Storage Temperature Range	$T_{stg}$	-55 to 150	$^\circ C$

## N-Channel MOSFET

## AO4444 (KO4444)

## ■ 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> =24V, V <sub>GS</sub> =0V			1	μA	
		V <sub>DS</sub> =24V, V <sub>GS</sub> =0V, T <sub>J</sub> =55°C			5		
Gate-Body Leakage Current	I <sub>less</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> =20A			5.5	mΩ	
		V <sub>GS</sub> =10V, I <sub>D</sub> =20A, T <sub>J</sub> =125°C			6.2		
		V <sub>GS</sub> =4.5V, I <sub>D</sub> =15A			7.5		
On State Drain Current	I <sub>D(on)</sub>	V <sub>GS</sub> =10V, V <sub>DS</sub> =5V	60			A	
Forward Transconductance	g <sub>FS</sub>	V <sub>DS</sub> =5V, I <sub>D</sub> =20A		106		S	
Input Capacitance	C <sub>iss</sub>	V <sub>GS</sub> =0V, V <sub>DS</sub> =15V, f=1MHz		3200	3840	pF	
Output Capacitance	C <sub>oss</sub>			590			
Reverse Transfer Capacitance	C <sub>rss</sub>			414			
Gate Resistance	R <sub>g</sub>	V <sub>GS</sub> =0V, V <sub>DS</sub> =0V, f=1MHz		0.54	0.7	Ω	
Total Gate Charge (10V)	Q <sub>g</sub>	V <sub>GS</sub> =4.5V, V <sub>DS</sub> =15V, I <sub>D</sub> =20A		63	76	nC	
Total Gate Charge (4.5V)				33	40		
Gate Source Charge			Q <sub>gs</sub>		8.6		
Gate Drain Charge			Q <sub>gd</sub>		17.6		
Turn-On DelayTime	t <sub>d(on)</sub>	V <sub>GS</sub> =10V, V <sub>DS</sub> =15V, R <sub>L</sub> =0.75Ω, R <sub>GEN</sub> =3Ω		12		ns	
Turn-On Rise Time	t <sub>r</sub>			15.5			
Turn-Off DelayTime	t <sub>d(off)</sub>			40			
Turn-Off Fall Time	t <sub>f</sub>			14			
Body Diode Reverse Recovery Time	t <sub>rr</sub>	I <sub>F</sub> = 20A, di/dt= 100A/μs		34	41	nA	
Body Diode Reverse Recovery Charge	Q <sub>rr</sub>			30			
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 <300μs pulses, duty cycle 0.5% max.

## ■ Marking

Marking	4444 KC****
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## N-Channel MOSFET AO4444 (KO4444)

■ Typical Characteristics

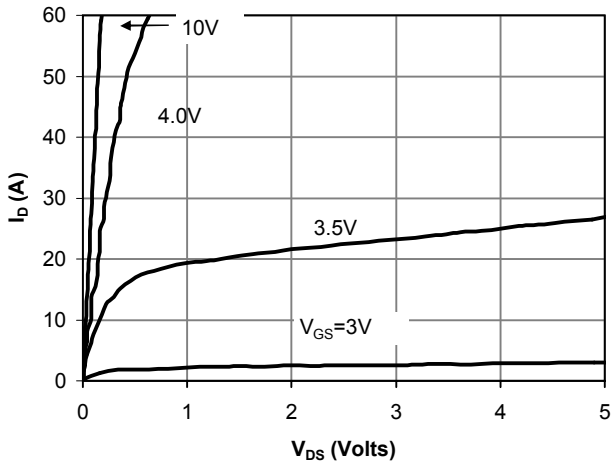


Fig 1: On-Region Characteristics

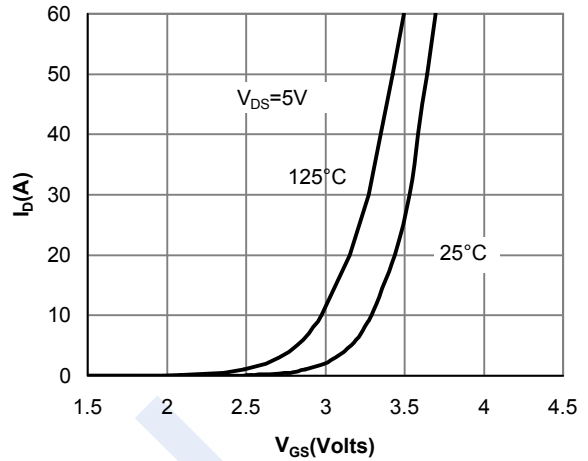


Figure 2: Transfer Characteristics

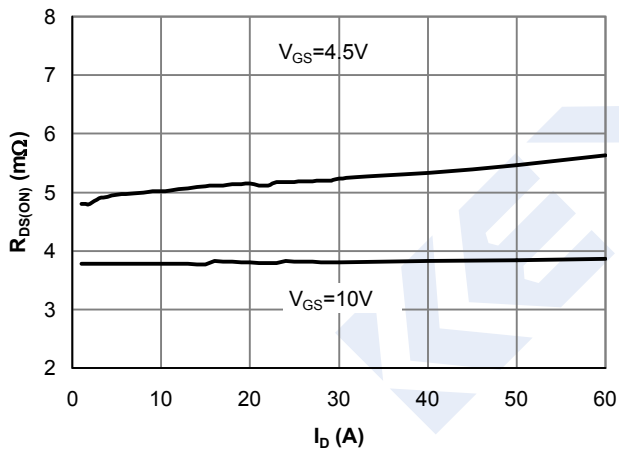


Figure 3: On-Resistance vs. Drain Current and Gate Voltage

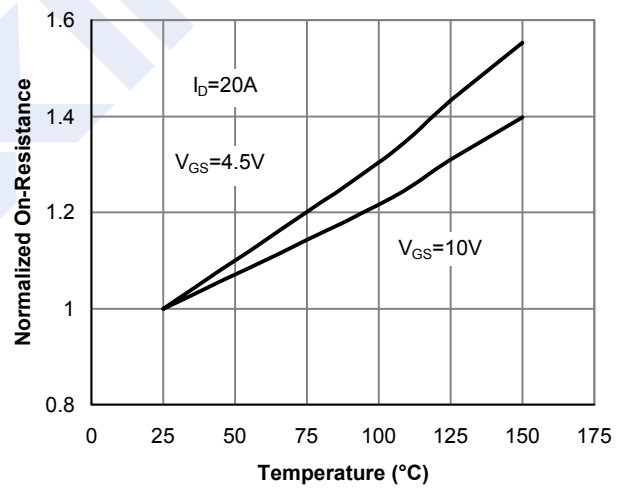


Figure 4: On-Resistance vs. Junction Temperature

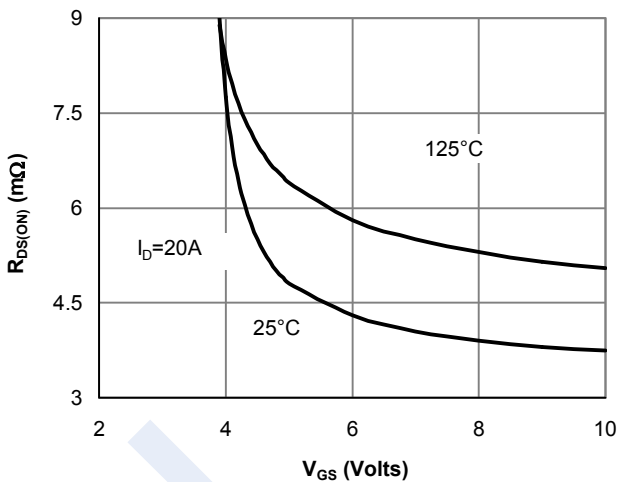


Figure 5: On-Resistance vs. Gate-Source Voltage

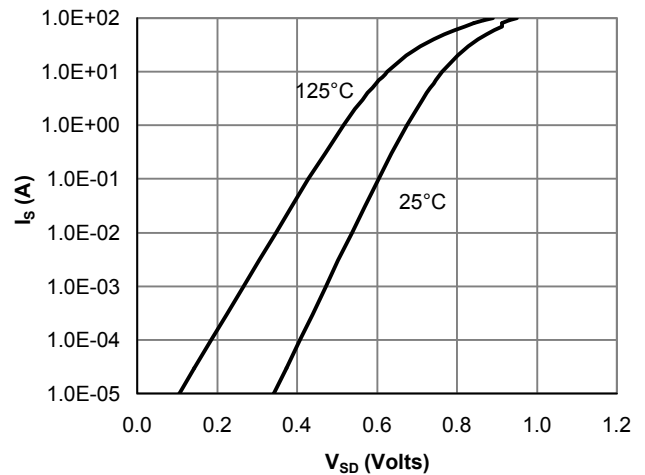


Figure 6: Body-Diode Characteristics

## N-Channel MOSFET AO4444 (KO4444)

■ Typical Characteristics

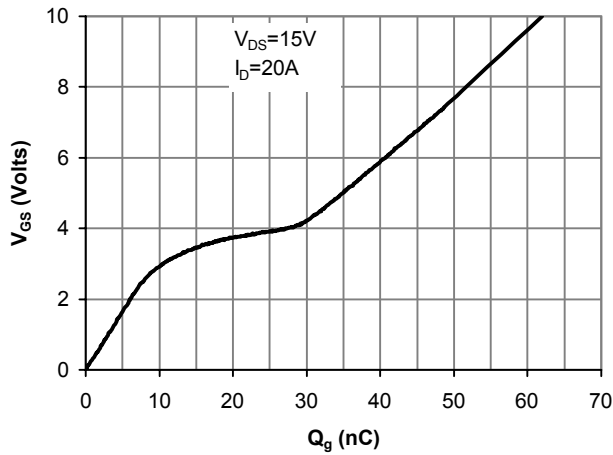


Figure 7: Gate-Charge Characteristics

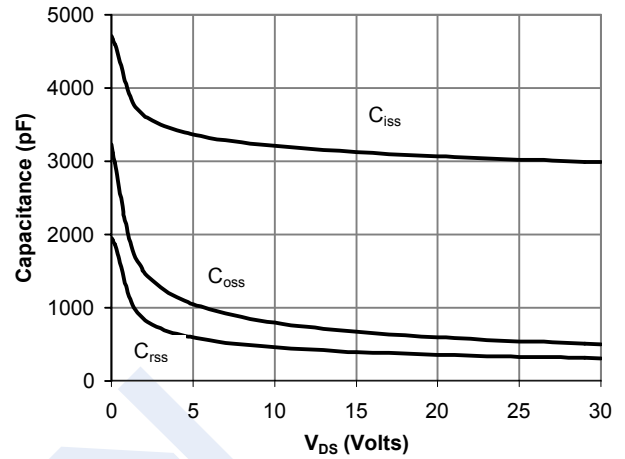


Figure 8: Capacitance Characteristics

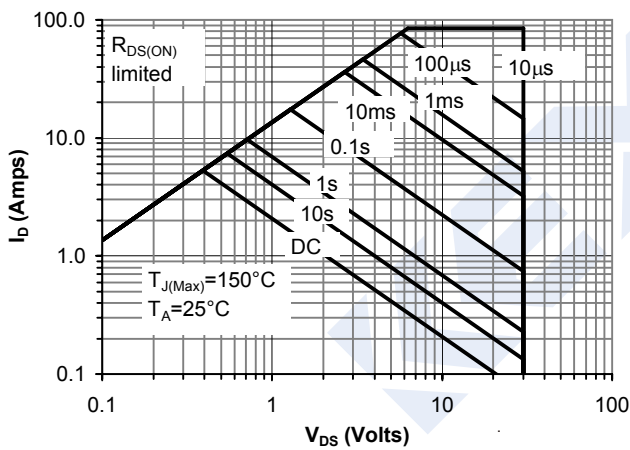


Figure 9: Maximum Forward Biased Safe Operating Area (Note E)

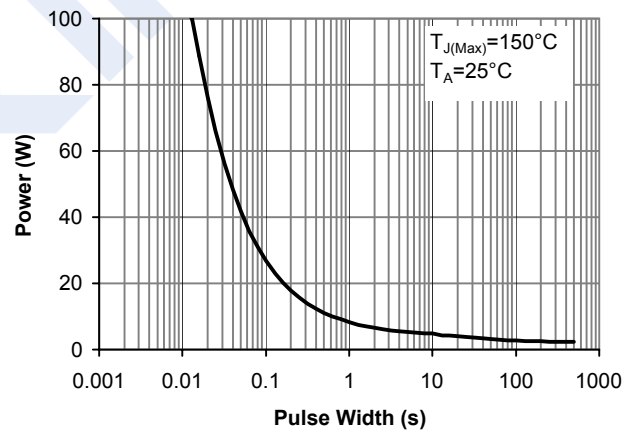


Figure 10: Single Pulse Power Rating Junction-to-Ambient (Note F)

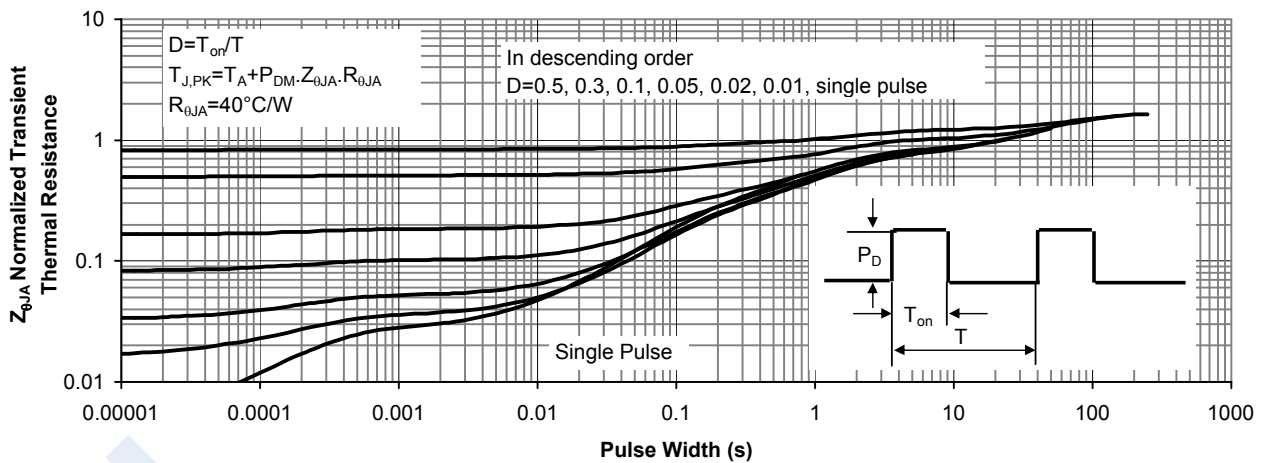


Figure 11: Normalized Maximum Transient Thermal Impedance