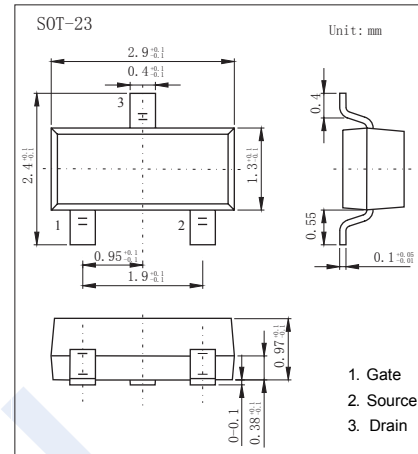
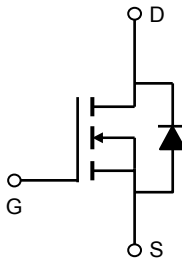


## N-Channel MOSFET

### AO3422 (KO3422)

#### ■ Features

- $V_{DS} (V) = 55V$
- $I_D = 2.1 A (V_{GS} = 4.5V)$
- $R_{DS(ON)} < 160m\Omega (V_{GS} = 4.5V)$
- $R_{DS(ON)} < 200m\Omega (V_{GS} = 2.5V)$



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

Parameter	Symbol	Rating	Unit	
Drain-Source Voltage	$V_{DS}$	55	V	
Gate-Source Voltage	$V_{GS}$	$\pm 12$		
Continuous Drain Current	$I_D$	$T_A=25^\circ C$	2.1	A
		$T_A=70^\circ C$	1.7	
Pulsed Drain Current	$I_{DM}$	10		
Power Dissipation	$P_D$	$T_A=25^\circ C$	1.25	W
		$T_A=70^\circ C$	0.8	
Thermal Resistance.Junction- to-Ambient	$R_{thJA}$	$t \leq 10s$	100	$^\circ C/W$
		Steady-State	150	
Thermal Resistance.Junction- to-Case	$R_{thJC}$	60		
Junction Temperature	$T_J$	150	$^\circ C$	
Storage Temperature Range	$T_{stg}$	-55 to 150		

## N-Channel MOSFET

### AO3422 (KO3422)

#### ■ 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> =10 mA, V <sub>GS</sub> =0V	55			V
Zero Gate Voltage Drain Current	I <sub>DSS</sub>	V <sub>DS</sub> =44V, V <sub>GS</sub> =0V			1	μA
		V <sub>DS</sub> =44V, 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> =±12V			±100	nA
Gate Threshold Voltage	V <sub>GS(th)</sub>	V <sub>DS</sub> =V <sub>GS</sub> , I <sub>D</sub> =250 μA	0.6		2	V
Static Drain-Source On-Resistance	R <sub>DS(on)</sub>	V <sub>GS</sub> =4.5V, I <sub>D</sub> =2.1A			160	mΩ
		V <sub>GS</sub> =4.5V, I <sub>D</sub> =2.1A, T <sub>J</sub> =125°C			210	
		V <sub>GS</sub> =2.5V, I <sub>D</sub> =1.5A			200	
On state drain current	I <sub>D(ON)</sub>	V <sub>GS</sub> =4.5V, V <sub>DS</sub> =5V	10			A
Forward Transconductance	g <sub>FS</sub>	V <sub>DS</sub> =5V, I <sub>D</sub> =2.1A		11		S
Input Capacitance	C <sub>iss</sub>	V <sub>GS</sub> =0V, V <sub>DS</sub> =25V, f=1MHz		214	300	pF
Output Capacitance	C <sub>oss</sub>			31		
Reverse Transfer Capacitance	C <sub>rss</sub>			12.6		
Gate Resistance	R <sub>g</sub>		V <sub>GS</sub> =0V, V <sub>DS</sub> =0V, f=1MHz		1.3	
Total Gate Charge	Q <sub>g</sub>	V <sub>GS</sub> =4.5V, V <sub>DS</sub> =27.5V, I <sub>D</sub> =2.1A		2.6	3.3	nC
Gate Source Charge	Q <sub>gs</sub>			0.6		
Gate Drain Charge	Q <sub>gd</sub>			0.8		
Turn-On DelayTime	t <sub>d(on)</sub>		V <sub>GS</sub> =10V, V <sub>DS</sub> =27.5V, R <sub>L</sub> =12Ω, R <sub>G</sub> =3Ω		2.3	
Turn-On Rise Time	t <sub>r</sub>			2.4		
Turn-Off DelayTime	t <sub>d(off)</sub>			16.5		
Turn-Off Fall Time	t <sub>f</sub>			2		
Body Diode Reverse Recovery Time	t <sub>rr</sub>	I <sub>F</sub> = 2.1A, di/dt= 100A/us			20	30
Body Diode Reverse Recovery Charge	Q <sub>rr</sub>			17		nC
Maximum Body-Diode Continuous Current	I <sub>S</sub>				1	A
Diode Forward Voltage	V <sub>SD</sub>	I <sub>S</sub> =1A, V <sub>GS</sub> =0V			1	V

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

#### ■ Marking

Marking	AR**
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## N-Channel MOSFET AO3422 (KO3422)

■ Typical Characteristics

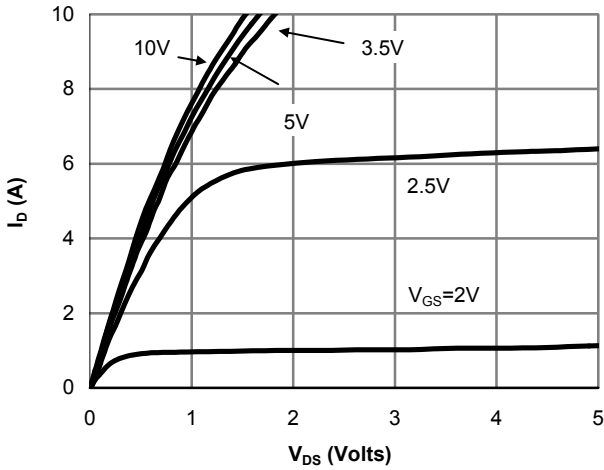


Fig 1: On-Region characteristics

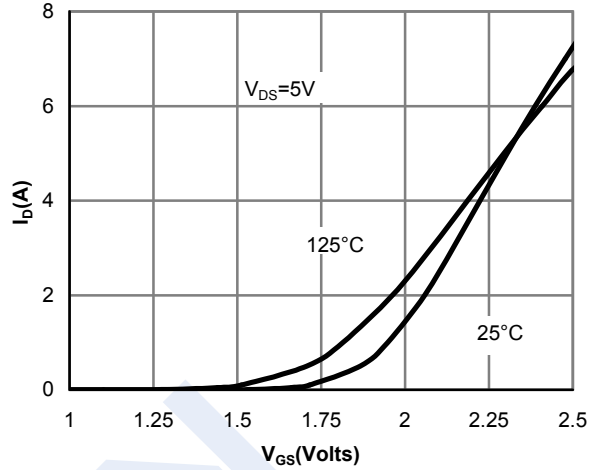


Figure 2: Transfer Characteristics

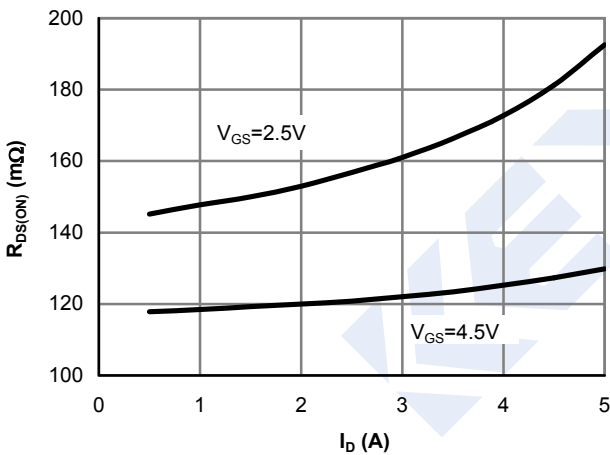


Figure 3: On-Resistance vs. Drain Current and Gate Voltage

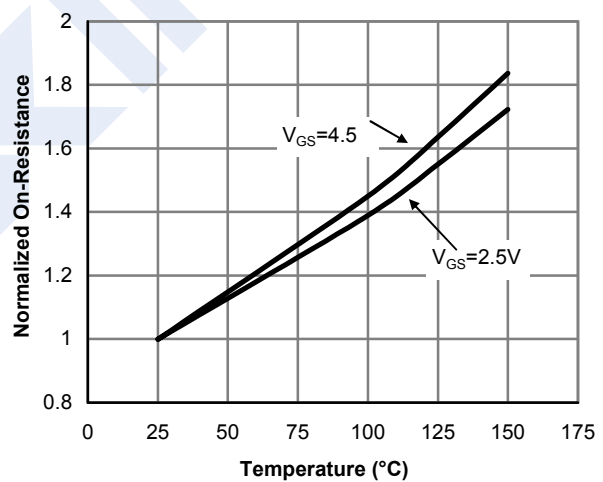


Figure 4: On-Resistance vs. Junction Temperature

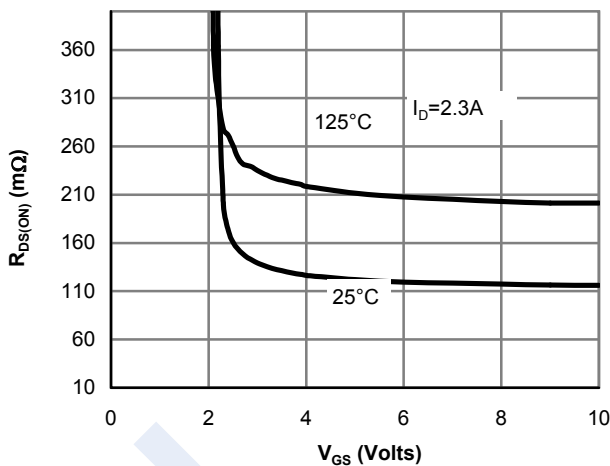


Figure 5: On-Resistance vs. Gate-Source Voltage

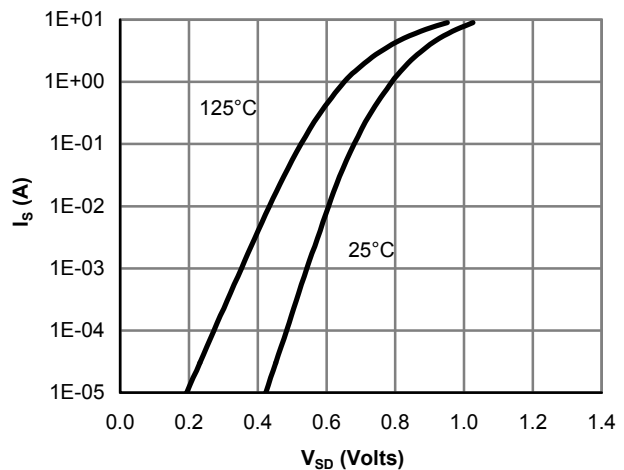


Figure 6: Body-Diode Characteristics

## N-Channel MOSFET AO3422 (KO3422)

■ Typical Characteristics

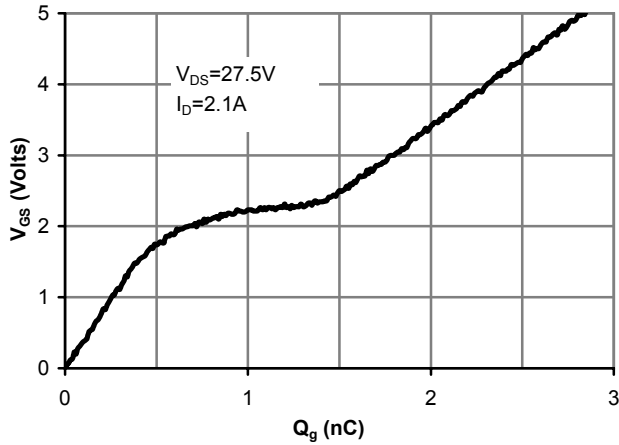


Figure 7: Gate-Charge Characteristics

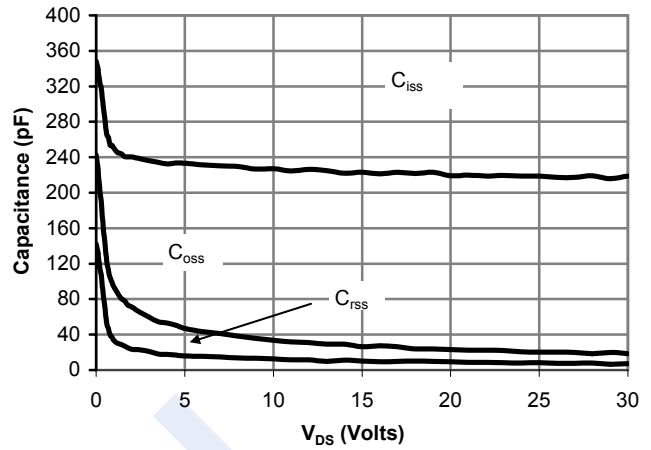


Figure 8: Capacitance Characteristics

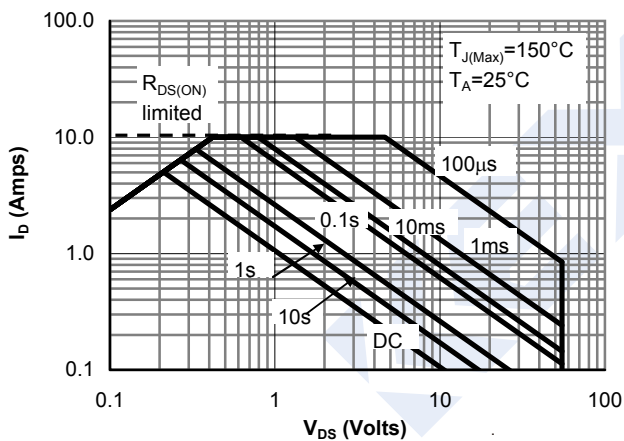


Figure 9: Maximum Forward Biased Safe Operating Area (Note E)

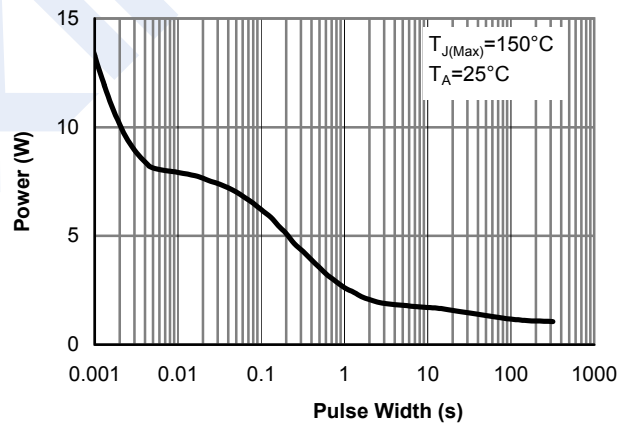


Figure 10: Single Pulse Power Rating Junction-to-Ambient (Note E)

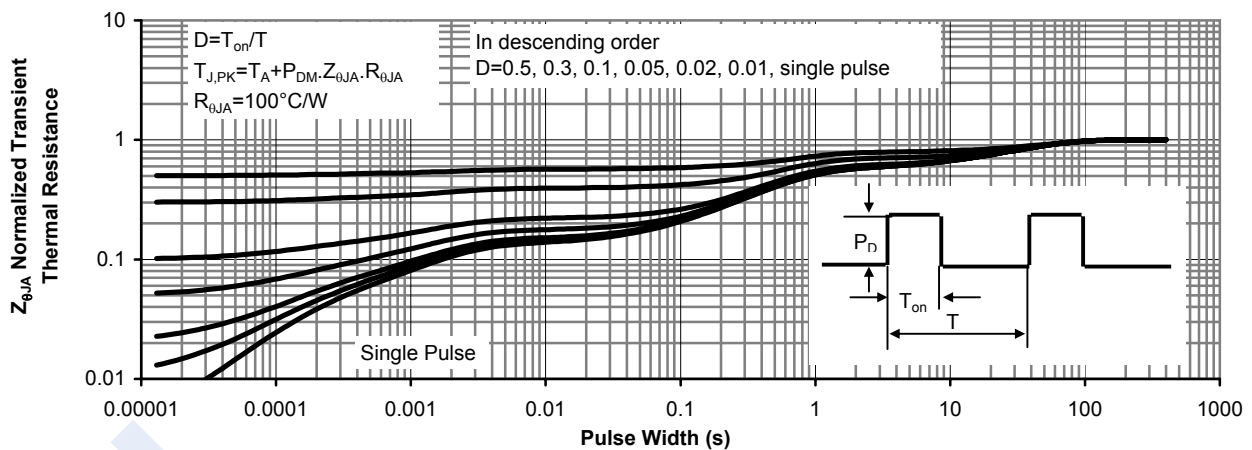


Figure 11: Normalized Maximum Transient Thermal Impedance