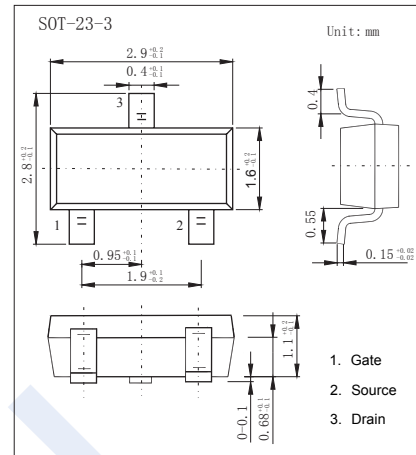
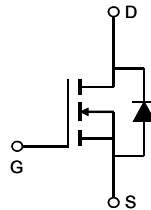


## N-Channel MOSFET

## AO3406 (KO3406)

## ■ Features

- $V_{DS} (V) = 30V$
- $I_D = 3.6 A (V_{GS} = 10V)$
- $R_{DS(ON)} < 50m\Omega (V_{GS} = 10V)$
- $R_{DS(ON)} < 70m\Omega (V_{GS} = 4.5V)$

■ 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
		$T_A=70^\circ C$	
Pulsed Drain Current	$I_{DM}$	15	
Power Dissipation	$P_D$	$T_A=25^\circ C$	W
		$T_A=70^\circ C$	
Thermal Resistance.Junction- to-Ambient	$R_{thJA}$	$t \leq 10s$	$^\circ C/W$
		Steady-State	
Thermal Resistance.Junction- to-Lead	$R_{thJL}$	80	
Junction Temperature	$T_J$	150	$^\circ C$
Storage Temperature Range	$T_{stg}$	-55 to 150	

## N-Channel MOSFET

## AO3406 (KO3406)

## ■ 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> =250 μA	1.5	2	2.5	V
Static Drain-Source On-Resistance	R <sub>DS(on)</sub>	V <sub>GS</sub> =10V, I <sub>D</sub> =3.6A		36	50	mΩ
		V <sub>GS</sub> =10V, I <sub>D</sub> =3.6A, T <sub>J</sub> =125°C		57	80	
		V <sub>GS</sub> =4.5V, I <sub>D</sub> =2.8A		48	70	
On State Drain Current	I <sub>D(ON)</sub>	V <sub>GS</sub> =10V, V <sub>DS</sub> =5V	15			A
Forward Transconductance	g <sub>FS</sub>	V <sub>DS</sub> =5V, I <sub>D</sub> =3.6A		11		S
Input Capacitance	C <sub>iss</sub>	V <sub>GS</sub> =0V, V <sub>DS</sub> =15V, f=1MHz		170	210	pF
Output Capacitance	C <sub>oss</sub>			35		
Reverse Transfer Capacitance	C <sub>rss</sub>			23		
Gate Resistance	R <sub>g</sub>	V <sub>GS</sub> =0V, V <sub>DS</sub> =0V, f=1MHz	1.7	3.5	5.3	Ω
Total Gate Charge	Q <sub>g</sub>	V <sub>GS</sub> =4.5V, V <sub>DS</sub> =15V, I <sub>D</sub> =3.6A		2	3	nC
Gate Source Charge	Q <sub>gs</sub>	V <sub>GS</sub> =10V, V <sub>DS</sub> =15V, I <sub>D</sub> =3.6A		4.05	5	
Gate Drain Charge	Q <sub>gd</sub>			0.55		
Turn-On Delay Time	t <sub>d(on)</sub>	V <sub>GS</sub> =10V, V <sub>DS</sub> =15V, R <sub>L</sub> =2.2Ω, R <sub>G</sub> =3Ω		4.5		ns
Turn-On Rise Time	t <sub>r</sub>			1.5		
Turn-Off Delay Time	t <sub>d(off)</sub>			18.5		
Turn-Off Fall Time	t <sub>f</sub>			15.5		
Body Diode Reverse Recovery Time	t <sub>rr</sub>	I <sub>F</sub> = 3.6A, di/dt= 100A/μs		7.5	10	nA
Body Diode Reverse Recovery Charge	Q <sub>rr</sub>			2.5		
Maximum Body-Diode Continuous Current	I <sub>S</sub>				1.5	A
Diode Forward Voltage	V <sub>SD</sub>	I <sub>S</sub> =1A, V <sub>GS</sub> =0V		0.79	1	V

## ■ Marking

Marking	A6*
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## N-Channel MOSFET AO3406 (KO3406)

■ Typical Characteristics

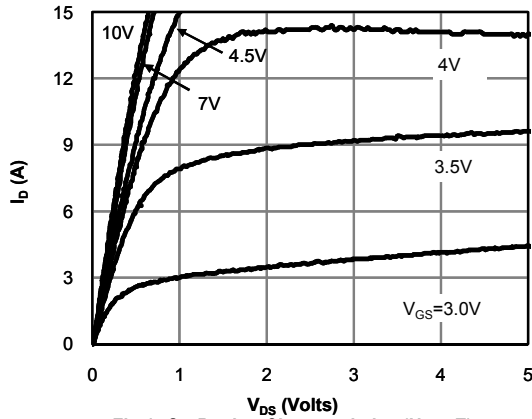


Figure 1: On-Region Characteristics (Note E)

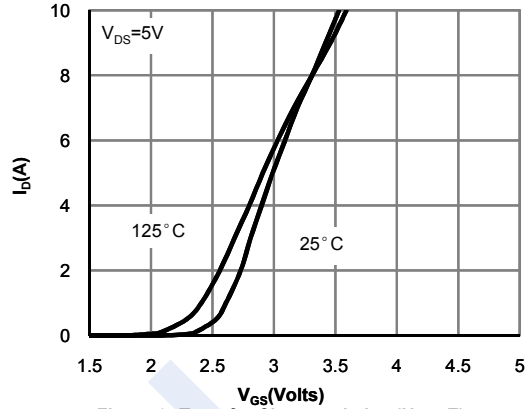


Figure 2: Transfer Characteristics (Note E)

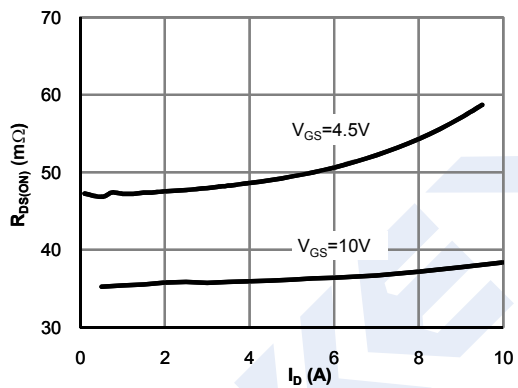


Figure 3: On-Resistance vs. Drain Current and Gate Voltage (Note E)

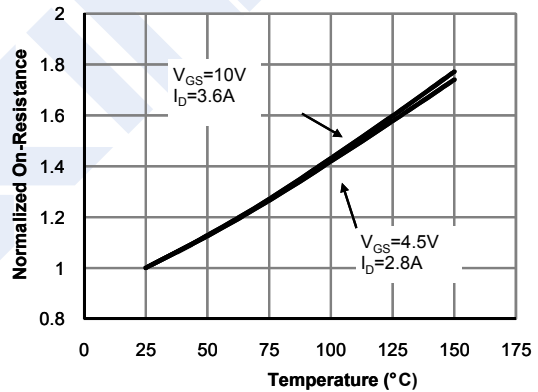


Figure 4: On-Resistance vs. Junction Temperature (Note E)

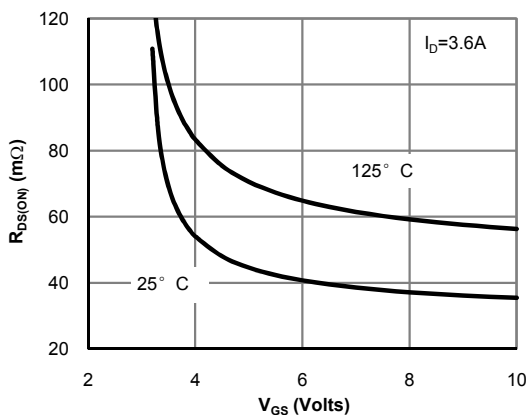


Figure 5: On-Resistance vs. Gate-Source Voltage (Note E)

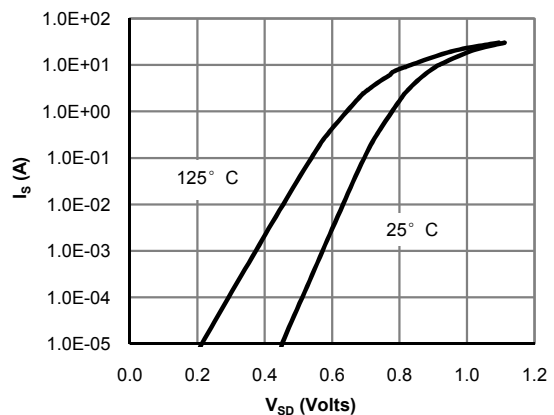


Figure 6: Body-Diode Characteristics (Note E)

# N-Channel MOSFET

## AO3406 (KO3406)

### Typical Characteristics

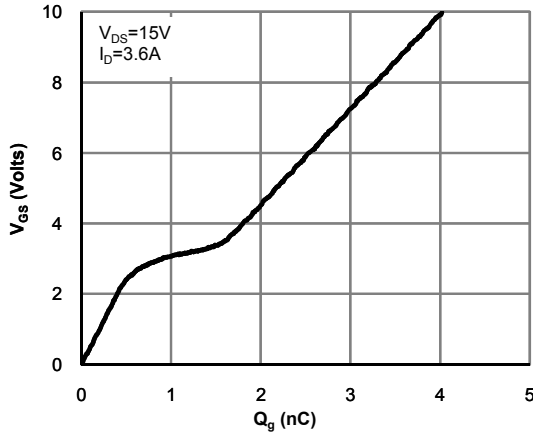


Figure 7: Gate-Charge Characteristics

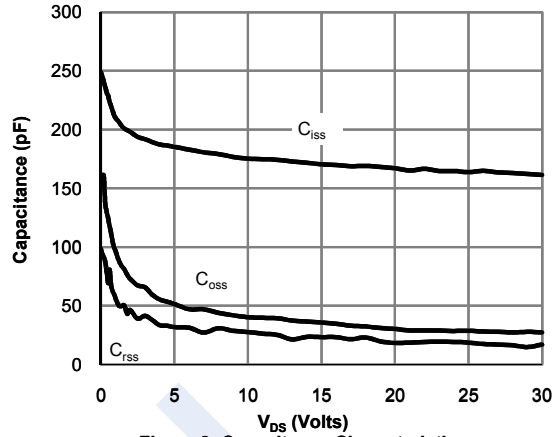


Figure 8: Capacitance Characteristics

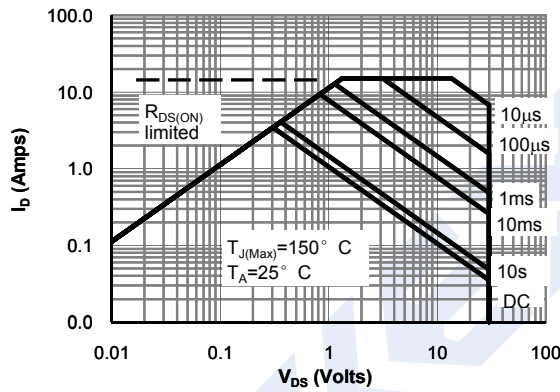


Figure 9: Maximum Forward Biased Safe Operating Area (Note F)

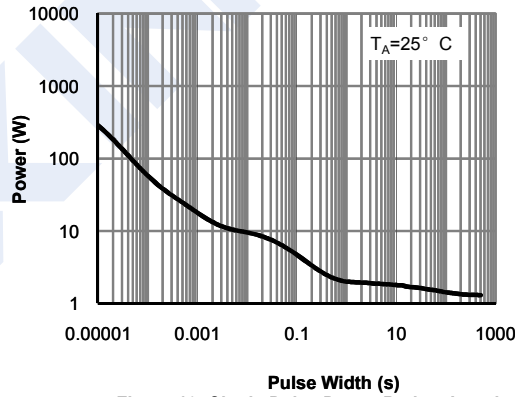


Figure 10: Single Pulse Power Rating Junction-to-Ambient (Note F)

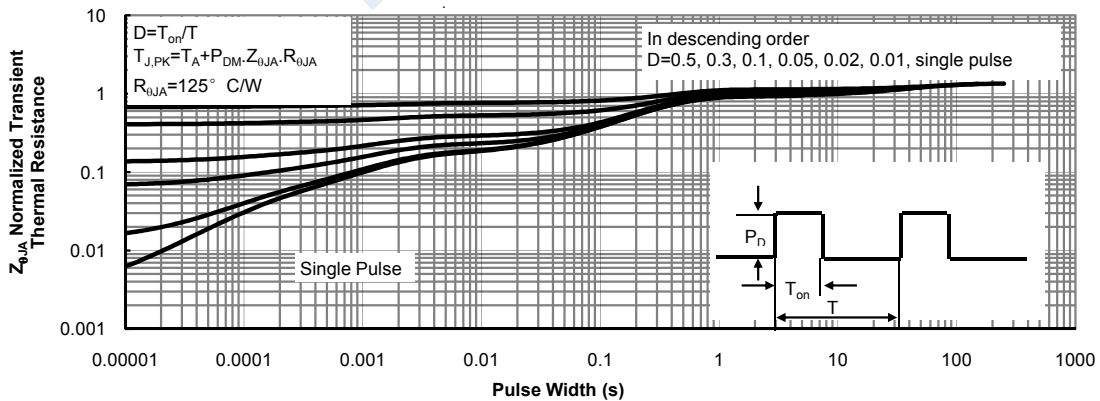


Figure 11: Normalized Maximum Transient Thermal Impedance (Note F)