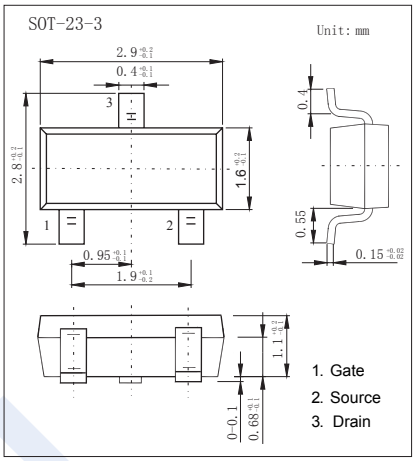
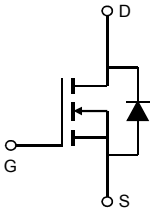
N-Channel MOSFET

AO3420 (KO3420)



■ Features

- $V_{DS\ (V)}$ = 20V
- I_D = 6 A (V_{GS} = 10V)
- $R_{DS(ON)}$ < 24mΩ (V_{GS} = 10V)
- $R_{DS(ON)}$ < 27mΩ (V_{GS} = 4.5V)
- $R_{DS(ON)}$ < 42mΩ (V_{GS} = 2.5V)
- $R_{DS(ON)}$ < 55mΩ (V_{GS} = 1.8V)



■ Absolute Maximum Ratings Ta = 25℃

Parameter		Symbol	Rating	Unit
Drain-Source Voltage		V_{DS}	20	V
Gate-Source Voltage		V_{GS}	±12	
Continuous Drain Current	TA=25℃	I_D	6	A
	TA=70℃		5	
Pulsed Drain Current		I_{DM}	30	
Power Dissipation	TA=25℃	P_D	1.4	W
	TA=70℃		0.9	
Thermal Resistance.Junction- to-Ambient	t ≤ 10s	R_{thJA}	90	℃/W
	Steady-State		125	
Thermal Resistance.Junction- to-Lead		R_{thJL}	80	
Junction Temperature		T_J	150	℃
Storage Temperature Range		T_{stg}	-55 to 150	

N-Channel MOSFET

AO3420 (KO3420)

■ Electrical Characteristics Ta = 25℃

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Drain-Source Breakdown Voltage	V_{DSS}	I_D=250μA, V_{GS}=0V	20			V
Zero Gate Voltage Drain Current	I_{DSS}	V_{DS}=20V, V_{GS}=0V			1	uA
		V_{DS}=20V, V_{GS}=0V, T_J=55℃			5	
Gate-Body Leakage Current	I_{GSS}	V_{DS}=0V, V_{GS}=±12V			±100	nA
Gate Threshold Voltage	$V_{GS(th)}$	V_{DS}=V_{GS} , I_D=250μA	0.4		1.1	V
Static Drain-Source On-Resistance	$R_{DS(ON)}$	V_{GS}=10V, I_D=6A			24	mΩ
		V_{GS}=10V, I_D=6A T_J=125℃			35	
		V_{GS}=4.5V, I_D=5A			27	
		V_{GS}=2.5V, I_D=4A			42	
		V_{GS}=1.8V, I_D=2A			55	
Forward Transconductance	g_{FS}	V_{DS}=5V, I_D=6A		25		S
Input Capacitance	C_{iss}	V_{GS}=0V, V_{DS}=10V, f=1MHz	420		630	pF
Output Capacitance	C_{oss}		65		125	
Reverse Transfer Capacitance	C_{rss}		45		105	
Gate Resistance	R_g	V_{GS}=0V, V_{DS}=0V, f=1MHz	0.8		2.6	Ω
Total Gate Charge (10V)	Q_g	V_{GS}=10V, V_{DS}=10V, I_D=6A		12.5		nC
Total Gate Charge (4.5V)				6		
Gate Source Charge	Q_{gs}			1		
Gate Drain Charge	Q_{gd}			2		
Turn-On DelayTime	$t_{d(on)}$	V_{GS}=10V, V_{DS}=10V, R_L=1.7Ω ,R_G=3Ω		3		ns
Turn-On Rise Time	t_r			7.5		
Turn-Off DelayTime	$t_{d(off)}$			20		
Turn-Off Fall Time	t_f			6		
Body Diode Reverse Recovery Time	t_{rr}	I_F= 6A, dI/dt= 100A/us		14		
Body Diode Reverse Recovery Charge	Q_{rr}			6		nC
Maximum Body-Diode Continuous Current	I_S				2	A
Diode Forward Voltage	V_{SD}	I_S=1A,V_{GS}=0V			1	V

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

■ Marking

Marking	AN**

N-Channel MOSFET

AO3420 (KO3420)

■ Typical Characterisitics

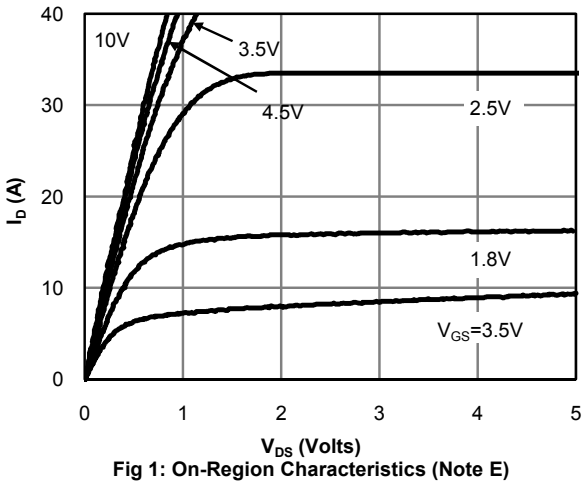


Fig 1: On-Region Characteristics (Note E)

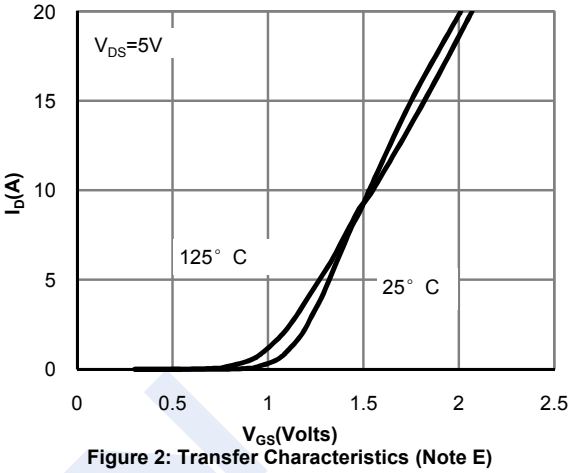


Figure 2: Transfer Characteristics (Note E)

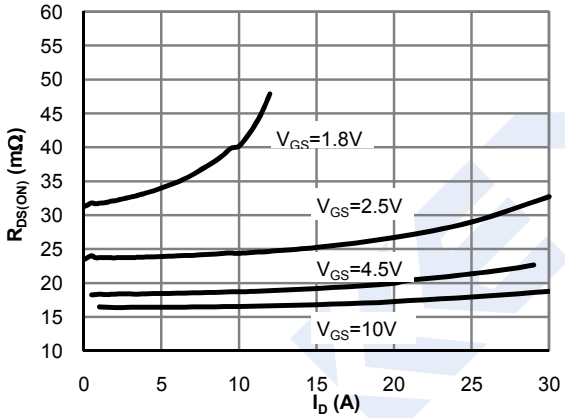


Figure 3: On-Resistance vs. Drain Current and Gate Voltage (Note E)

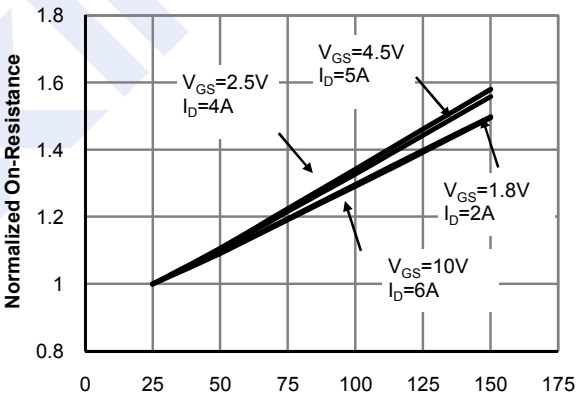


Figure 4: On-Resistance vs. Junction Temperature (Note E)

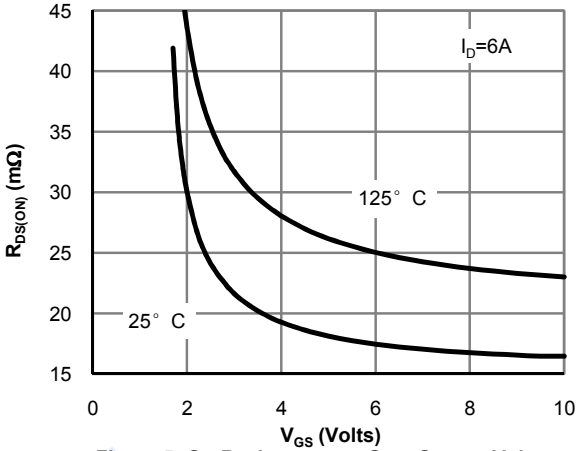


Figure 5: On-Resistance vs. Gate-Source Voltage (Note E)

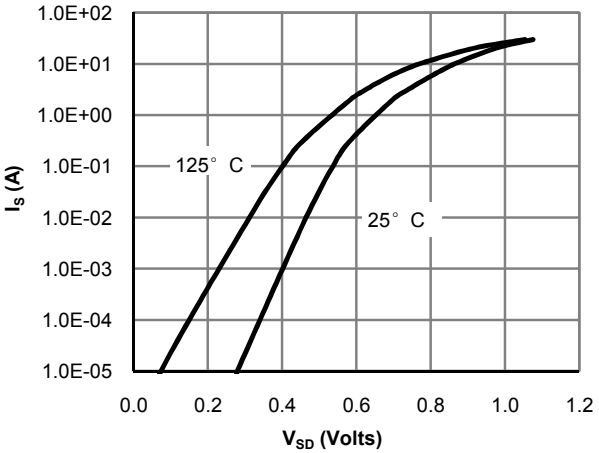


Figure 6: Body-Diode Characteristics (Note E)

N-Channel MOSFET

AO3420 (KO3420)

■ Typical Characterisitics

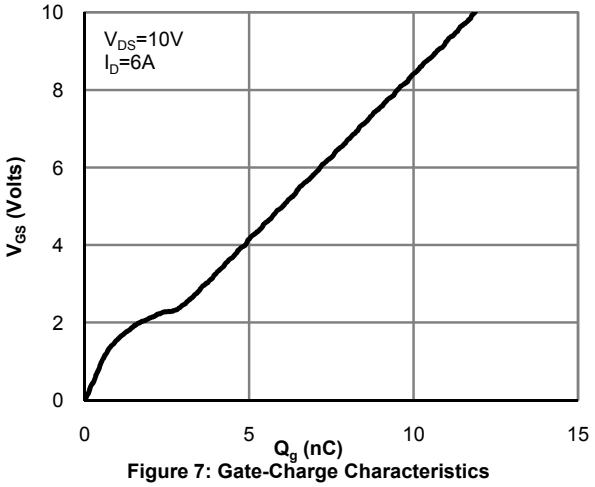


Figure 7: Gate-Charge Characteristics

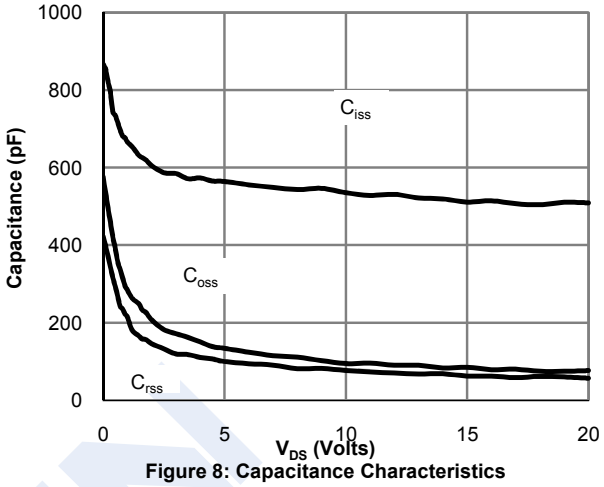


Figure 8: Capacitance Characteristics

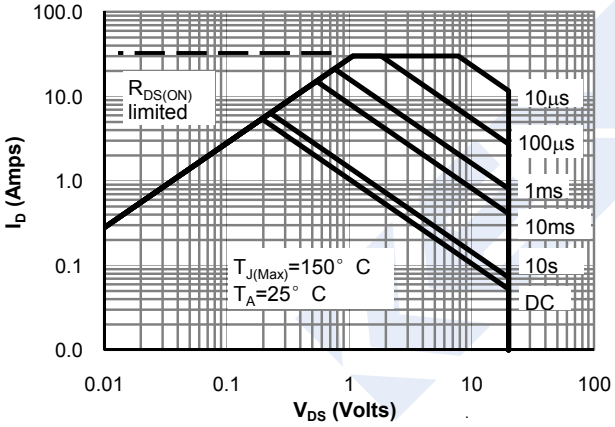


Figure 9: Maximum Forward Biased Safe Operating Area (Note F)

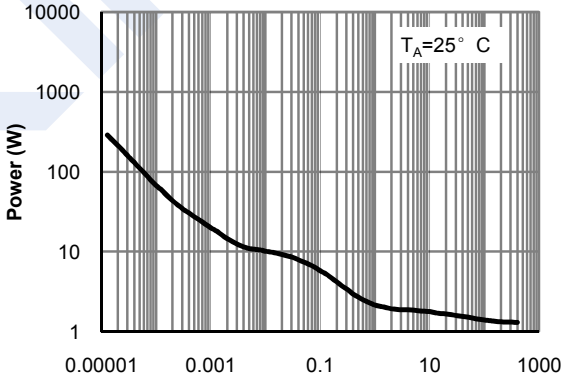


Figure 10: Single Pulse Power Rating Junction-to-Ambient (Note F)

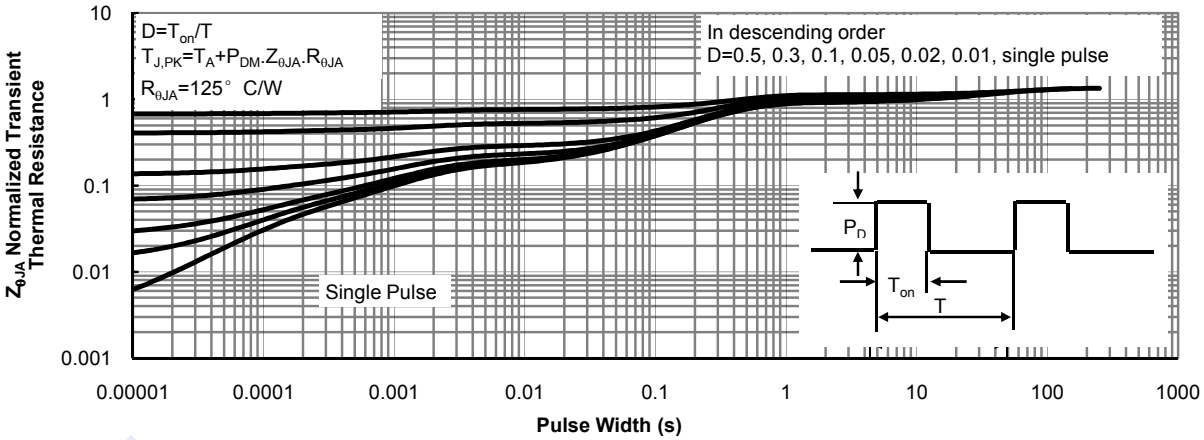


Figure 11: Normalized Maximum Transient Thermal Impedance (Note F)