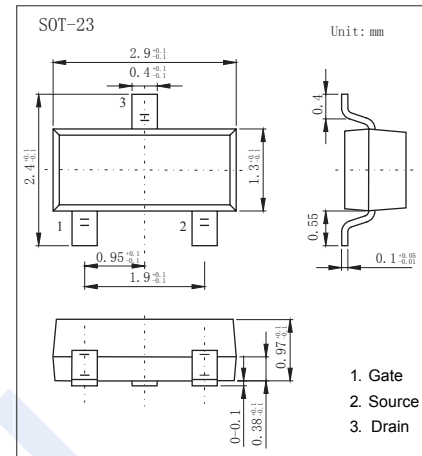
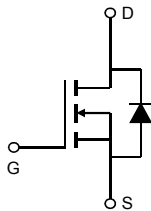


N-Channel MOSFET

AO3420 (KO3420)

■ Features

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



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

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

N-Channel MOSFET

AO3420 (KO3420)

■ Electrical Characteristics Ta = 25°C

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit	
Drain-Source Breakdown Voltage	V _{DSS}	I _D =250 μA, V _{GS} =0V	20			V	
Zero Gate Voltage Drain Current	I _{DSS}	V _{DS} =20V, V _{GS} =0V			1	μA	
		V _{DS} =20V, V _{GS} =0V, T _J =55°C			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 =250 μA	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°C			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/μs		14		nC	
Body Diode Reverse Recovery Charge	Q _{rr}			6			
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**
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N-Channel MOSFET AO3420 (KO3420)

■ Typical Characteristics

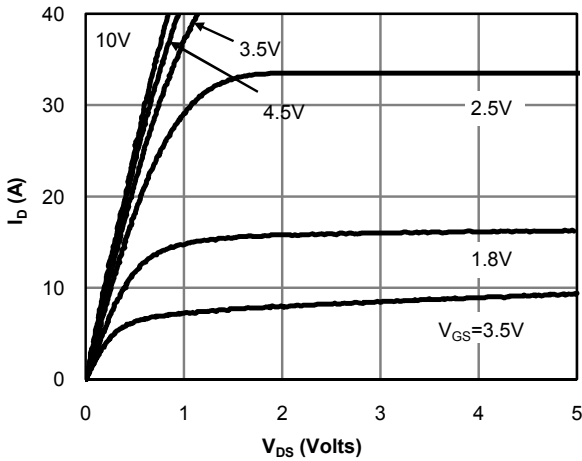


Fig 1: On-Region Characteristics (Note E)

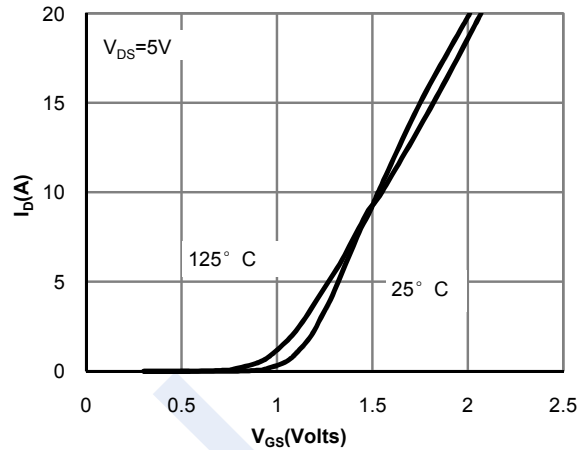


Figure 2: Transfer Characteristics (Note E)

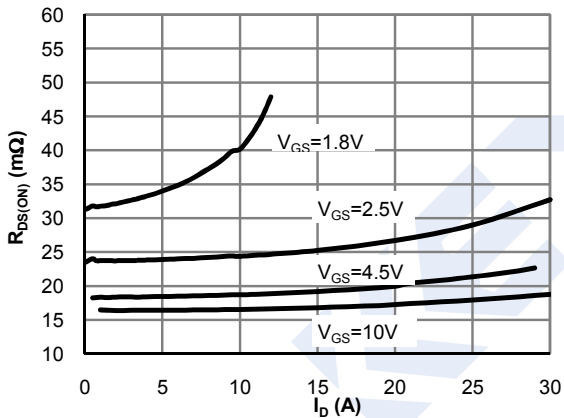


Figure 3: On-Resistance vs. Drain Current and Gate Voltage (Note E)

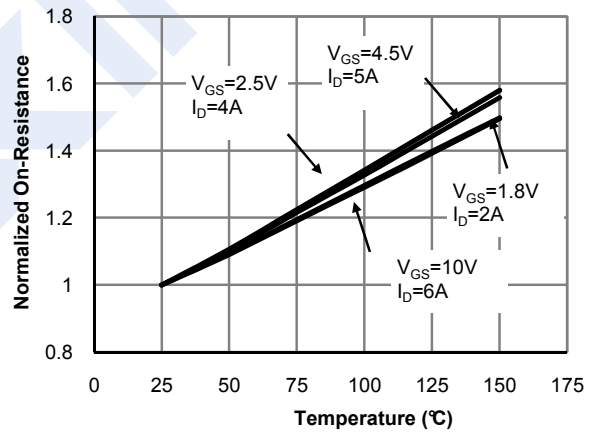


Figure 4: On-Resistance vs. Junction Temperature (Note E)

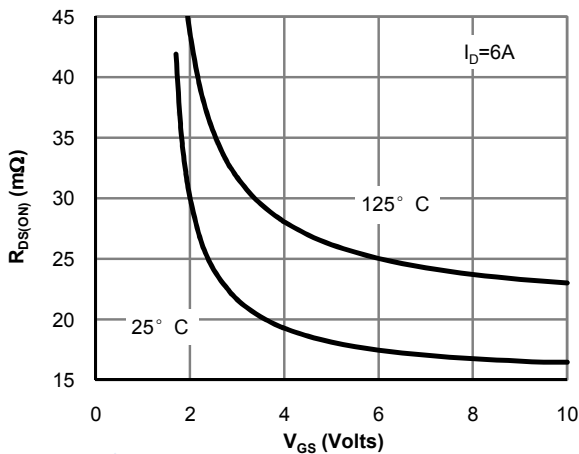


Figure 5: On-Resistance vs. Gate-Source Voltage (Note E)

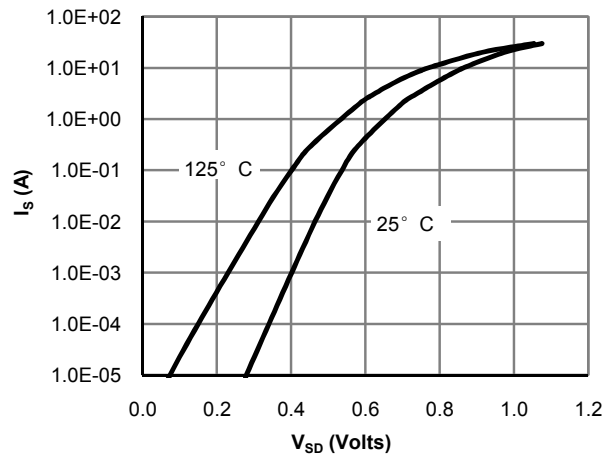


Figure 6: Body-Diode Characteristics (Note E)

N-Channel MOSFET AO3420 (KO3420)

■ Typical Characteristics

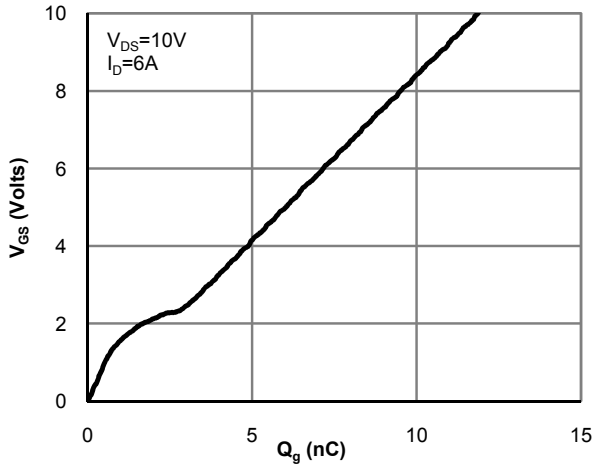


Figure 7: Gate-Charge Characteristics

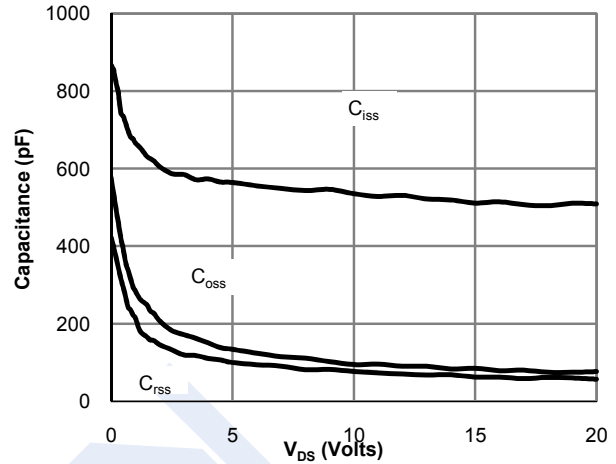


Figure 8: Capacitance Characteristics

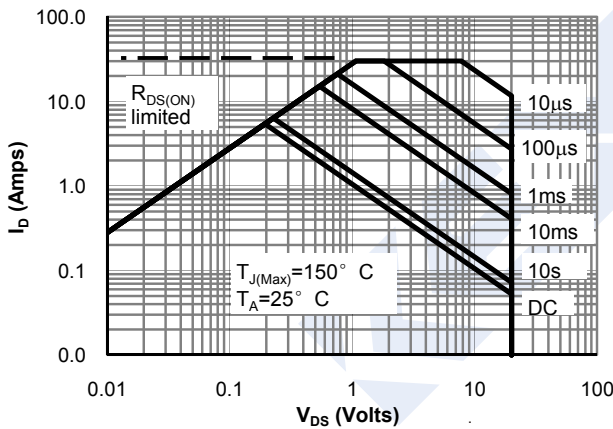


Figure 9: Maximum Forward Biased Safe Operating Area (Note F)

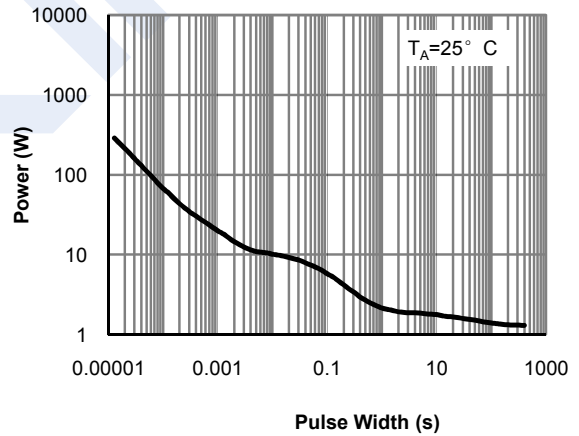


Figure 10: Single Pulse Power Rating Junction-to-Ambient (Note F)

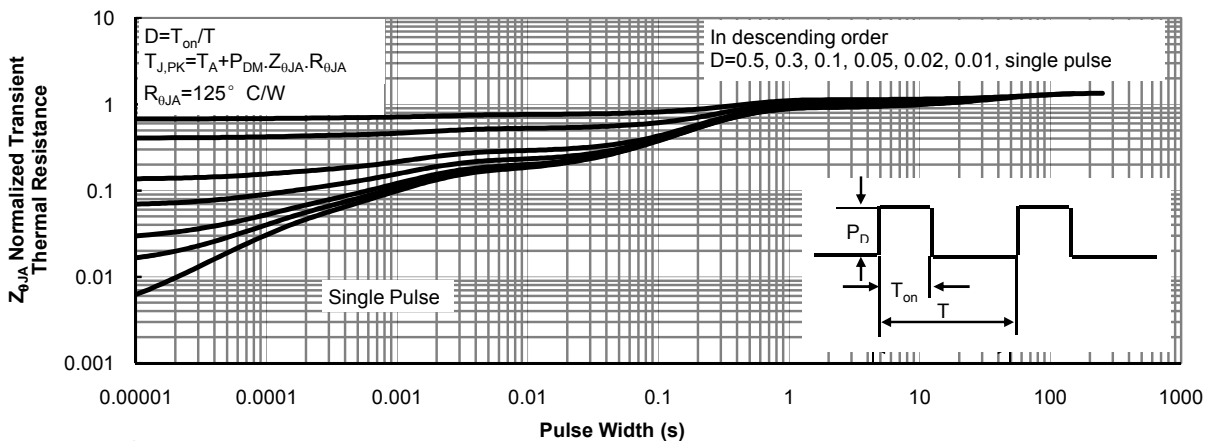


Figure 11: Normalized Maximum Transient Thermal Impedance (Note F)