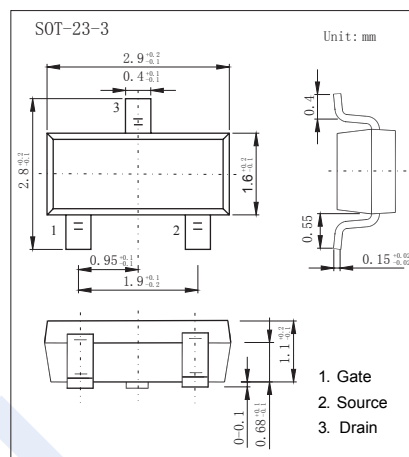
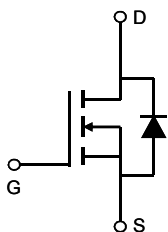


N-Channel MOSFET

AO3424 (KO3424)

■ Features

- $V_{DS} (V) = 30V$
- $I_D = 3.8 A$ ($V_{GS} = 10 V$)
- $R_{DS(ON)} < 55m\Omega$ ($V_{GS} = 10V$)
- $R_{DS(ON)} < 65m\Omega$ ($V_{GS} = 4.5V$)
- $R_{DS(ON)} < 85m\Omega$ ($V_{GS} = 2.5V$)



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

Parameter		Symbol	Rating	Unit
Drain-Source Voltage		V_{DS}	30	V
Gate-Source Voltage		V_{GS}	± 12	
Continuous Drain Current	$T_A = 25^\circ C$	I_D	3.8	A
	$T_A = 70^\circ C$		3.1	
Pulsed Drain Current		I_{DM}	15	
Power Dissipation	$T_A = 25^\circ C$	P_D	1.4	W
	$T_A = 70^\circ C$		0.9	
Thermal Resistance.Junction- to-Ambient	$t \leq 10s$	R_{thJA}	90	$^\circ C/W$
	Steady-State		125	
Thermal Resistance.Junction- to-Case		R_{thJC}	80	
Junction Temperature		T_J	150	$^\circ C$
Storage Temperature Range		T_{stg}	-55 to 150	

N-Channel MOSFET

AO3424 (KO3424)

■ Electrical Characteristics Ta = 25°C

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Drain-Source Breakdown Voltage	V_{DS}	$I_D=250\text{ }\mu\text{A}$, $V_{GS}=0\text{V}$	30			V
Zero Gate Voltage Drain Current	I_{DSS}	$V_{DS}=30\text{V}$, $V_{GS}=0\text{V}$			1	μA
		$V_{DS}=30\text{V}$, $V_{GS}=0\text{V}$, $T_J=55^\circ\text{C}$			5	
Gate-Body Leakage Current	I_{GSS}	$V_{DS}=0\text{V}$, $V_{GS}=\pm 12\text{V}$			± 100	nA
Gate Threshold Voltage	$V_{GS(th)}$	$V_{DS}=V_{GS}$, $I_D=250\text{ }\mu\text{A}$	0.5		1.5	V
Static Drain-Source On-Resistance	$R_{DS(on)}$	$V_{GS}=10\text{V}$, $I_D=3.8\text{A}$			55	m Ω
		$V_{GS}=10\text{V}$, $I_D=3.8\text{A}$, $T_J=125^\circ\text{C}$			84	
		$V_{GS}=4.5\text{V}$, $I_D=3.5\text{A}$			65	
		$V_{GS}=2.5\text{V}$, $I_D=1\text{A}$			85	
On state drain current	$I_{D(on)}$	$V_{GS}=10\text{V}$, $V_{DS}=5\text{V}$	15			A
Forward Transconductance	g_{FS}	$V_{DS}=5\text{V}$, $I_D=3.8\text{A}$		14		S
Input Capacitance	C_{iss}	$V_{GS}=0\text{V}$, $V_{DS}=15\text{V}$, $f=1\text{MHz}$	185		285	pF
Output Capacitance	C_{oss}		25		45	
Reverse Transfer Capacitance	C_{rss}		10		25	
Gate Resistance	R_g	$V_{GS}=0\text{V}$, $V_{DS}=0\text{V}$, $f=1\text{MHz}$	2.1		6.5	Ω
Total Gate Charge (10V)	Q_g	$V_{GS}=10\text{V}$, $V_{DS}=15\text{V}$, $I_D=3.8\text{A}$		10	12	nC
Total Gate Charge (4.5V)				4.7		
Gate Source Charge	Q_{gs}			0.95		
Gate Drain Charge	Q_{gd}			1.6		
Turn-On DelayTime	$t_{d(on)}$	$V_{GS}=10\text{V}$, $V_{DS}=15\text{V}$, $R_L=3.95\text{ }\Omega$, $R_G=3\text{ }\Omega$		3.5		ns
Turn-On Rise Time	t_r			1.5		
Turn-Off DelayTime	$t_{d(off)}$			17.5		
Turn-Off Fall Time	t_f			2.5		
Body Diode Reverse Recovery Time	t_{rr}	$I_F=3.8\text{A}$, $dI/dt=100\text{A}/\mu\text{s}$		8.5	11	nC
Body Diode Reverse Recovery Charge	Q_{rr}			2.6	3.5	
Maximum Body-Diode Continuous Current	I_S				1.5	A
Diode Forward Voltage	V_{SD}	$I_S=1\text{A}$, $V_{GS}=0\text{V}$			1	V

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

■ Marking

Marking	AT**
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N-Channel MOSFET

AO3424 (KO3424)

■ Typical Characteristics

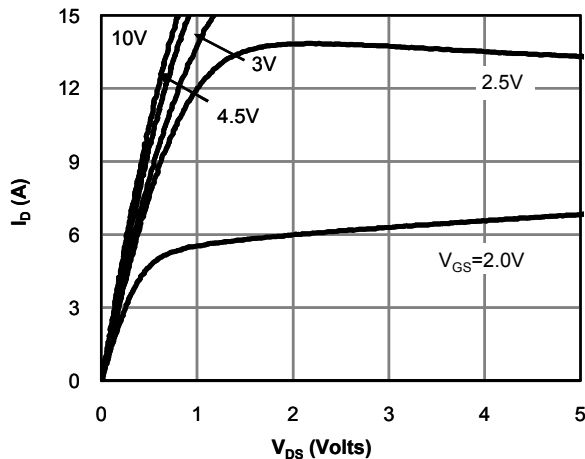


Fig 1: On-Region Characteristics (Note E)

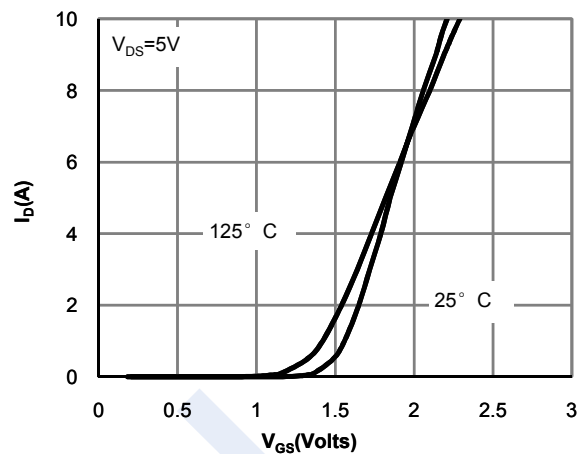


Figure 2: Transfer Characteristics (Note E)

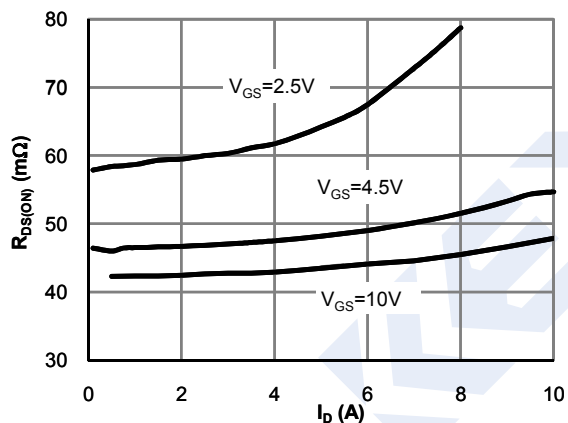


Figure 3: On-Resistance vs. Drain Current and Gate Voltage (Note E)

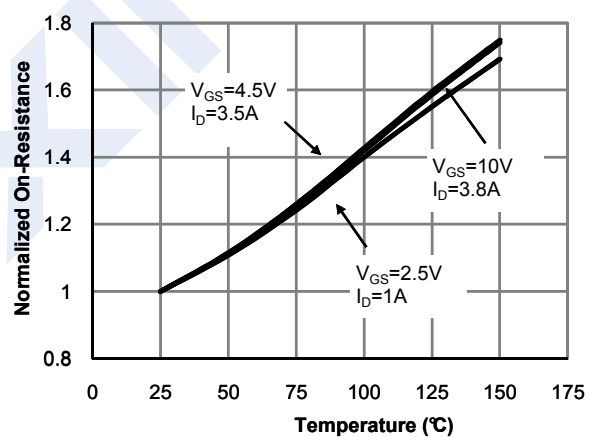


Figure 4: On-Resistance vs. Junction Temperature (Note E)

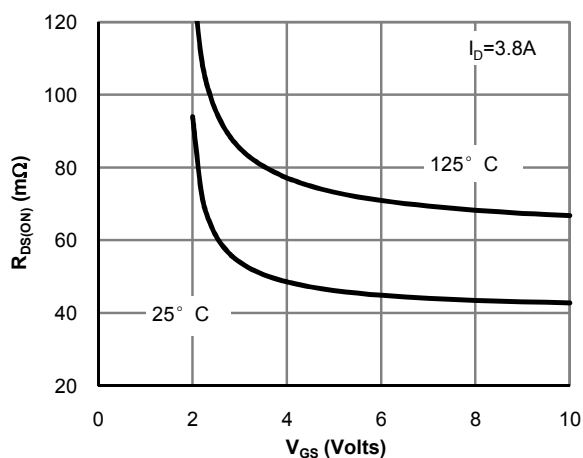


Figure 5: On-Resistance vs. Gate-Source Voltage (Note E)

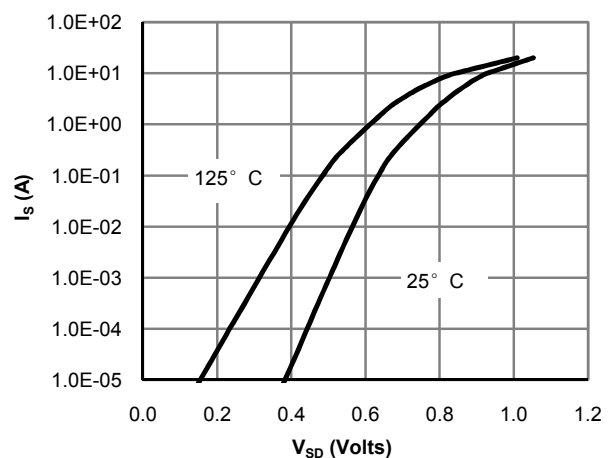


Figure 6: Body-Diode Characteristics (Note E)

N-Channel MOSFET

AO3424 (KO3424)

■ Typical Characteristics

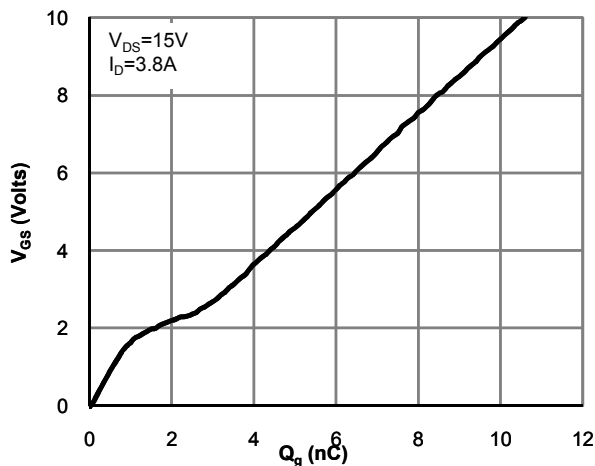


Figure 7: Gate-Charge Characteristics

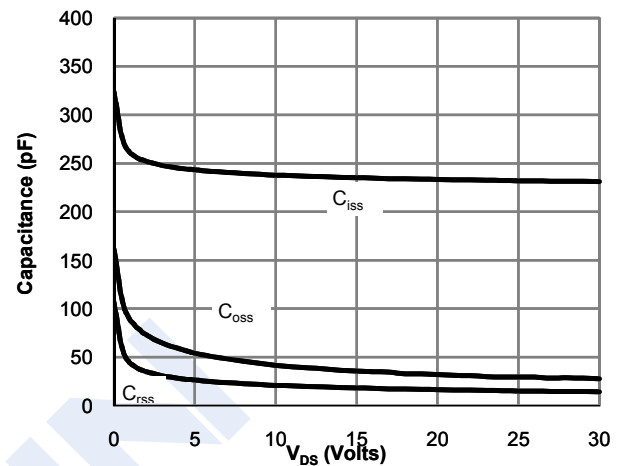


Figure 8: Capacitance Characteristics

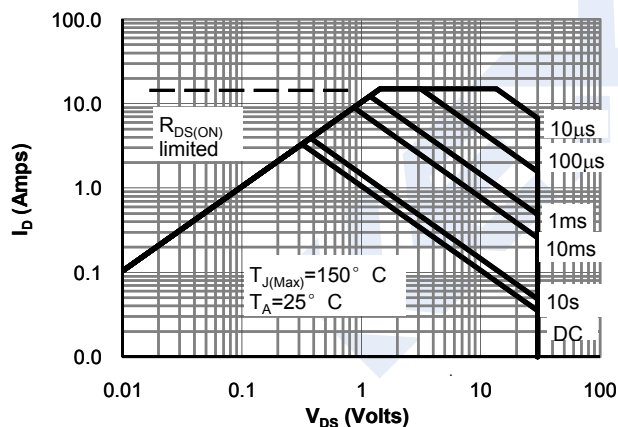


Figure 9: Maximum Forward Biased Safe Operating Area (Note F)

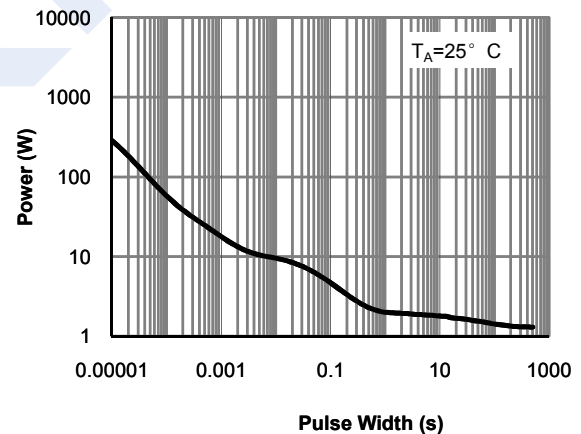


Figure 10: Single Pulse Power Rating Junction-to-Ambient (Note F)

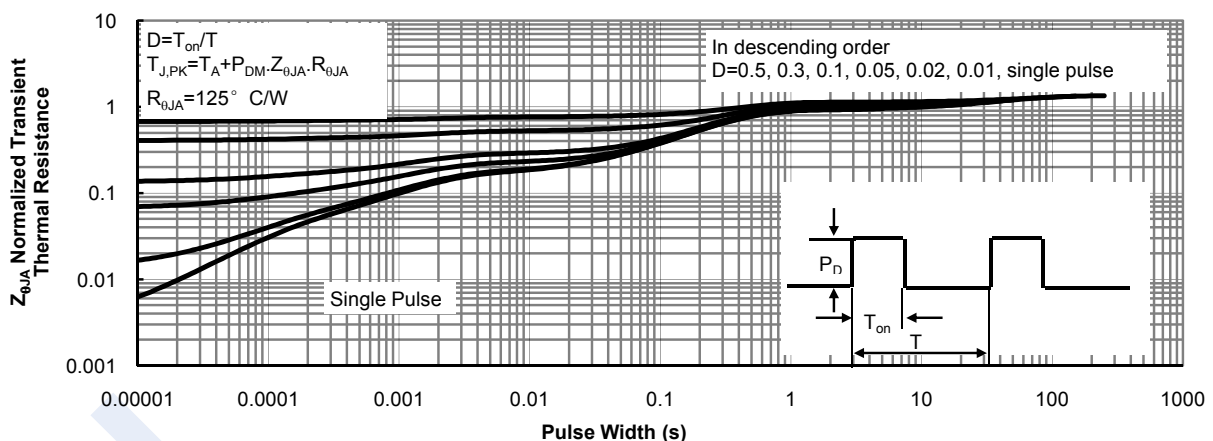


Figure 11: Normalized Maximum Transient Thermal Impedance (Note F)