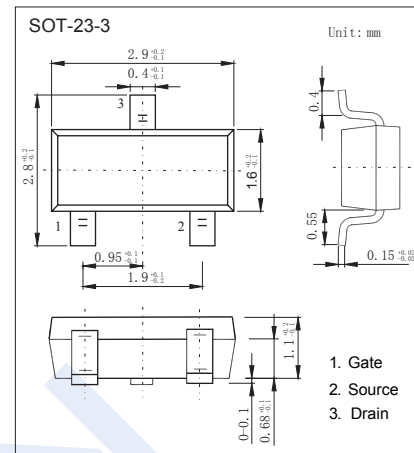
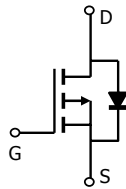


P-Channel MOSFET

AO3415 (KO3415)

■ Features

- $V_{DS} (V) = -20V$
- $I_D = -5 A (V_{GS} = -4.5V)$
- $R_{DS(ON)} < 43m\Omega (V_{GS} = -4.5V)$
- $R_{DS(ON)} < 55m\Omega (V_{GS} = -2.5V)$
- $R_{DS(ON)} < 75m\Omega (V_{GS} = -1.8V)$
- $R_{DS(ON)} < 100m\Omega (V_{GS} = -1.5V)$



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

Parameter	Symbol	Rating	Unit
Drain-Source Voltage	V_{DS}	-20	V
Gate-Source Voltage	V_{GS}	± 8	
Continuous Drain Current	$T_A = 25^\circ C$	-5	A
	$T_A = 70^\circ C$	-4	
Pulsed Drain Current	I_{DM}	-30	
Power Dissipation	$T_A = 25^\circ C$	1.5	W
	$T_A = 70^\circ C$	1	
Thermal Resistance.Junction- to-Ambient	$t \leq 10s$	80	$^\circ C/W$
	Steady-State	100	
Thermal Resistance.Junction- to-Lead	R_{thJL}	52	
Junction Temperature	T_J	150	$^\circ C$
Junction Storage Temperature Range	T_{stg}	-55 to 150	

P-Channel MOSFET

AO3415 (KO3415)

■ Electrical Characteristics Ta = 25°C

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Drain-Source Breakdown Voltage	V _{DSS}	I _D =-250 μ A, 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} =±8V			±0.1	μA
Gate Threshold Voltage	V _{GS(th)}	V _{DS} =V _{GS} I _D =-250 μ A	-0.3		-0.9	V
Static Drain-Source On-Resistance	R _{DS(on)}	V _{GS} =-4.5V, I _D =-4A			43	mΩ
		V _{GS} =-4.5V, I _D =-4A T _J =125°C			59	
		V _{GS} =-2.5V, I _D =-4A			55	
		V _{GS} =-1.8V, I _D =-2A			75	
		V _{GS} =-1.5V, I _D =-1A			100	
On state drain current	I _{D(ON)}	V _{GS} =-4.5V, V _{DS} =-5V	-30			A
Forward Transconductance	g _{FS}	V _{DS} =-5V, I _D =-4 A		20		S
Input Capacitance	C _{iss}	V _{GS} =0V, V _{DS} =-10V, f=1MHz	600		905	pF
Output Capacitance	C _{oss}		80		150	
Reverse Transfer Capacitance	C _{rss}		48		115	
Gate resistance	R _g	V _{GS} =0V, V _{DS} =0V, f=1MHz	6		20	Ω
Total Gate Charge	Q _g	V _{GS} =-4.5V, V _{DS} =-10V, I _D =-4A	7.4		11	nC
Gate Source Charge	Q _{gs}		0.8		1.2	
Gate Drain Charge	Q _{gd}		1.3		3.1	
Turn-On DelayTime	t _{d(on)}	V _{GS} =-4.5V, V _{DS} =-10V, R _L =2.5Ω, R _{GEN} =3Ω		13		ns
Turn-On Rise Time	t _r			9		
Turn-Off DelayTime	t _{d(off)}			19		
Turn-Off Fall Time	t _f			29		
Body Diode Reverse Recovery Time	t _{rr}	I _F =-4A, di/dt=100A/μ s	20		32	nC
Body Diode Reverse Recovery Charge	Q _{rr}		40		62	
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	AF9T
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P-Channel MOSFET AO3415 (KO3415)

■ Typical Characteristics

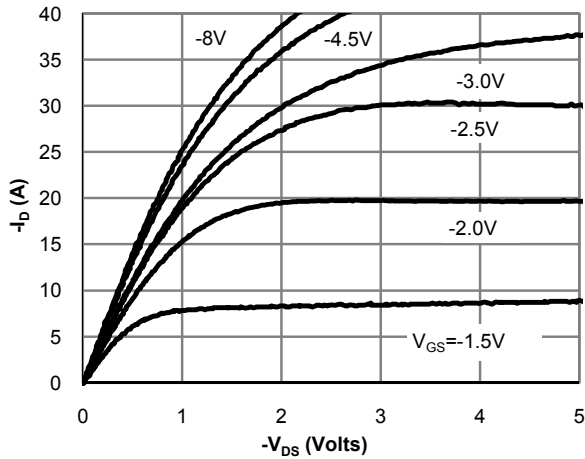


Figure 1: On-Region Characteristics (Note E)

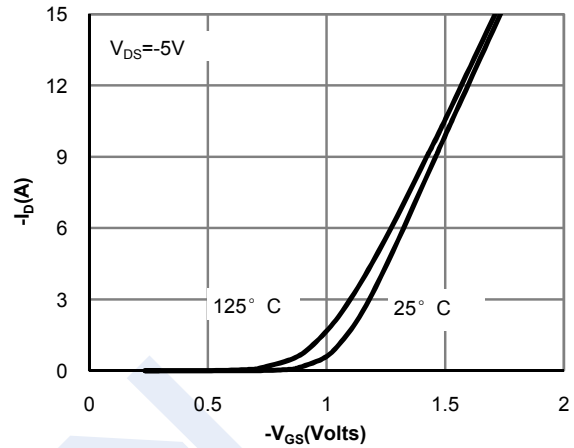


Figure 2: Transfer Characteristics (Note E)

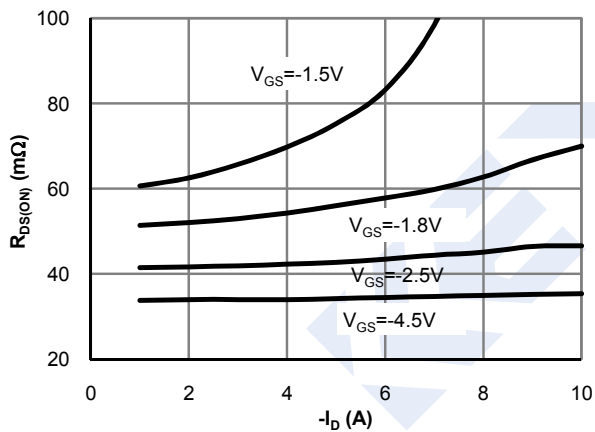


Figure 3: On-Resistance vs. Drain Current and Gate Voltage (Note E)

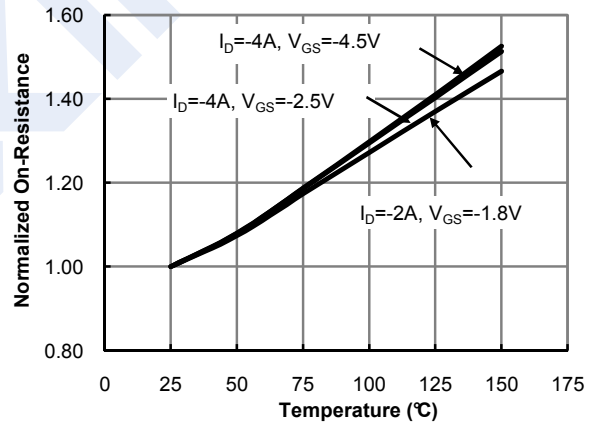


Figure 4: On-Resistance vs. Junction Temperature (Note E)

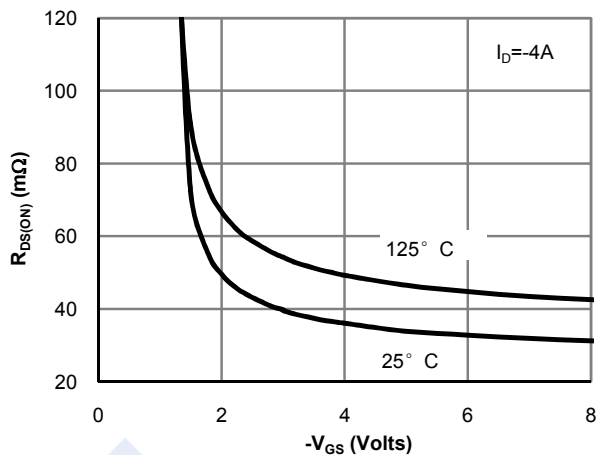


Figure 5: On-Resistance vs. Gate-Source Voltage (Note E)

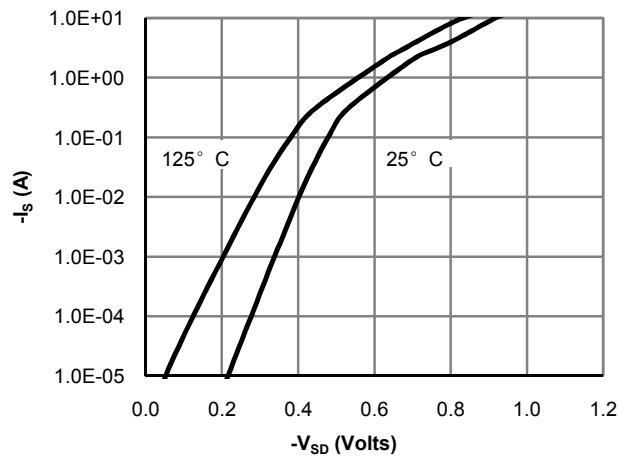


Figure 6: Body-Diode Characteristics (Note E)

P-Channel MOSFET

AO3415 (KO3415)

■ Typical Characteristics

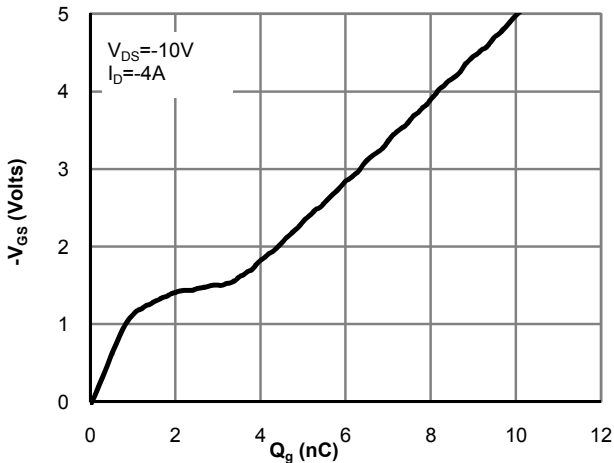


Figure 7: Gate-Charge Characteristics

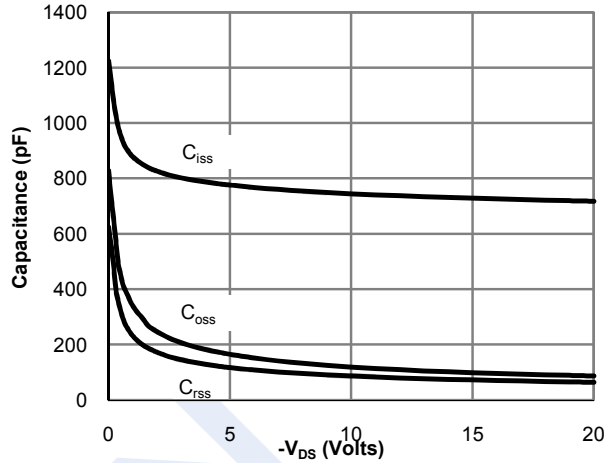


Figure 8: Capacitance Characteristics

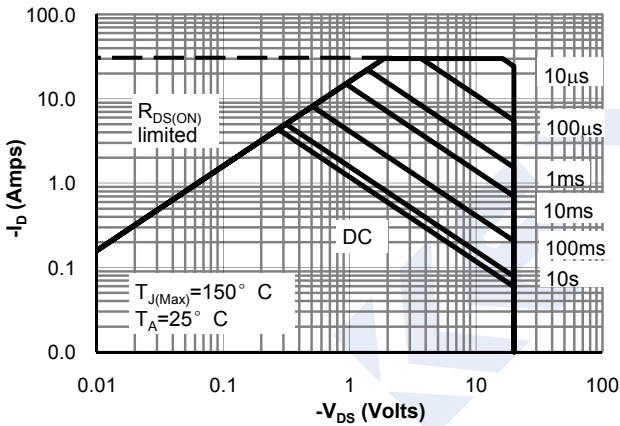


Figure 9: Maximum Forward Biased Safe Operating Area (Note F)

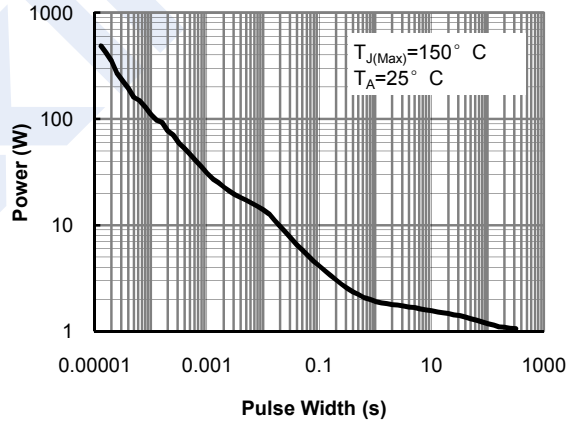


Figure 10: Single Pulse Power Rating Junction-to-Ambient (Note F)

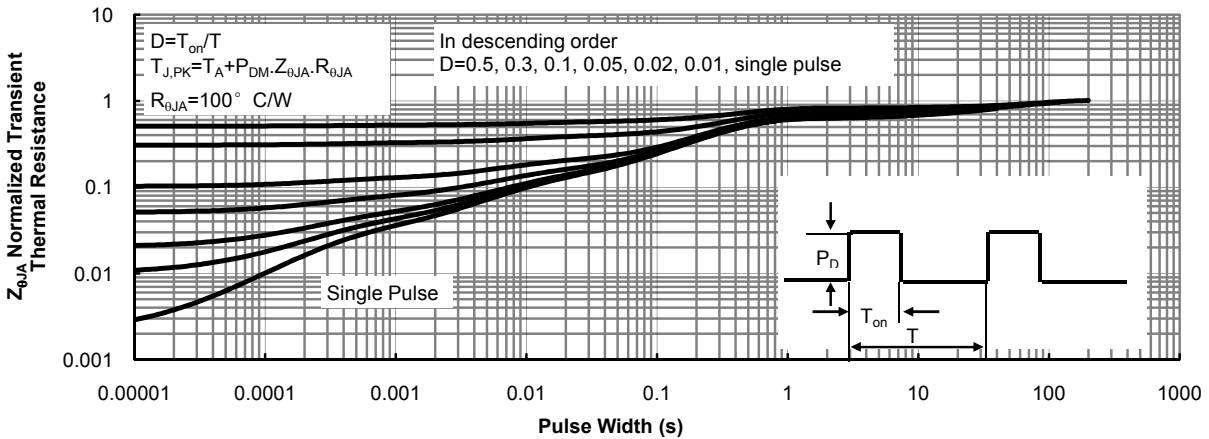


Figure 11: Normalized Maximum Transient Thermal Impedance (Note F)