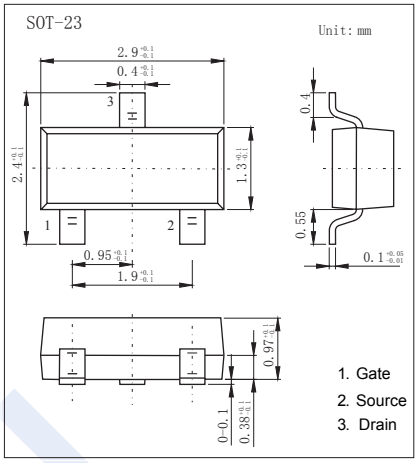
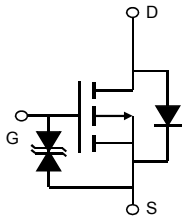
P-Channel MOSFET
AO3421E-HF (KO3421E-HF)



■ Features

- $V_{DS\ (V)}$ =-30V
- I_D =-3 A (V_{GS} =-10V)
- $R_{DS(ON)}$ < 95mΩ (V_{GS} =-10V)
- $R_{DS(ON)}$ < 160mΩ (V_{GS} =-4.5V)
- Pb−Free Package May be Available. The G−Suffix Denotes a Pb−Free Lead Finish



■ Absolute Maximum Ratings Ta = 25℃

Parameter		Symbol	Rating	Unit
Drain-Source Voltage		V_{DS}	-30	V
Gate-Source Voltage		V_{GS}	±20	
Continuous Drain Current	T_A=25°C	I_D	-3	A
	T_A=70°C		-2	
Pulsed Drain Current		I_{DM}	-18	
Power Dissipation	T_A=25°C	P_D	1.4	W
	T_A=70°C		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	℃
Junction Storage Temperature Range		T_{stg}	-55 to 150	

P-Channel MOSFET
AO3421E-HF (KO3421E-HF)

■ Electrical Characteristics Ta = 25℃

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Drain-Source Breakdown Voltage	V_{DSS}	I_D=-250μA, V_{GS}=0V	-30			V
Zero Gate Voltage Drain Current	I_{DSS}	V_{DS}=-30V, V_{GS}=0V			-1	uA
		V_{DS}=-30V, V_{GS}=0V, T_J=55℃			-5	
Gate-Body leakage current	I_{GSS}	V_{DS}=0V, V_{GS}=±16V			±10	uA
Gate Threshold Voltage	$V_{GS(th)}$	V_{DS}=V_{GS} , I_D=-250μA	-1.4		-2.5	V
Static Drain-Source On-Resistance	$R_{DS(ON)}$	V_{GS}=-10V, I_D=-3A			95	mΩ
		V_{GS}=-10V, I_D=-3A T_J=125℃			135	
		V_{GS}=-4.5V, I_D=-2A			160	
On state drain current	$I_{D(ON)}$	V_{GS}=-10V, V_{DS}=-5V	-18			A
Forward Transconductance	g_{FS}	V_{DS}=-5V, I_D=-3A		6		S
Input Capacitance	C_{iss}	V_{GS}=0V, V_{DS}=-15V, f=1MHz		215		pF
Output Capacitance	C_{oss}			46.5		
Reverse Transfer Capacitance	C_{rss}			27.5		
Gate resistance	R_g	V_{GS}=0V, V_{DS}=0V, f=1MHz		9.5	19	Ω
Total Gate Charge (10V)	Q_g	V_{GS}=-10V, V_{DS}=-15V, I_D=-3A		4.6	8	nC
Total Gate Charge (4.5V)				2.2	4	
Gate Source Charge	Q_{gs}			0.85		
Gate Drain Charge	Q_{gd}			1.2		
Turn-On DelayTime	$t_{d(on)}$	V_{GS}=-10V, V_{DS}=-15V, R_L=5Ω, R_{GEN}=3Ω		8		ns
Turn-On Rise Time	t_r			4		
Turn-Off DelayTime	$t_{d(off)}$			13.5		
Turn-Off Fall Time	t_f			4		
Body Diode Reverse Recovery Time	t_{rr}	I_F=-3A, dI/dt=500A/μs		9		
Body Diode Reverse Recovery Charge	Q_{rr}			16		nC
Maximum Body-Diode Continuous Current	I_S				-1.5	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	RP** F

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■ Typical Characterisitics

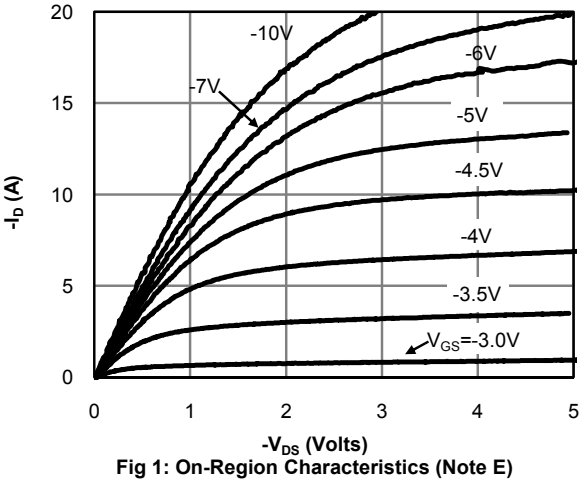

Fig 1: On-Region Characteristics (Note E)

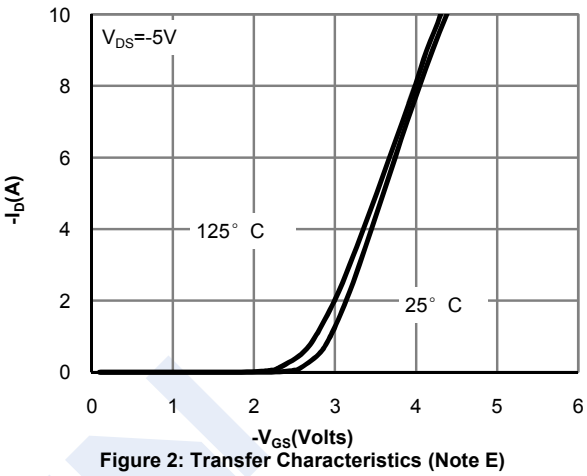

Figure 2: Transfer Characteristics (Note E)

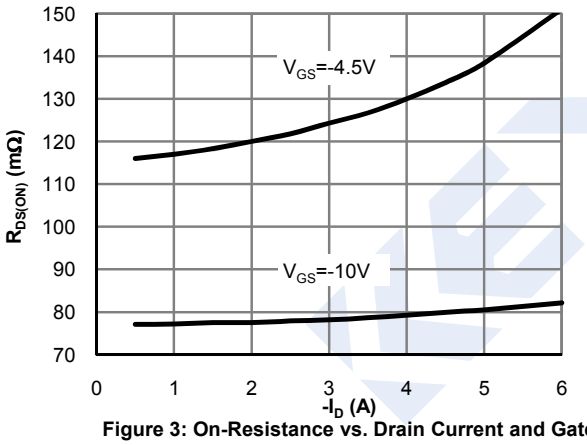

Figure 3: On-Resistance vs. Drain Current and Gate Voltage

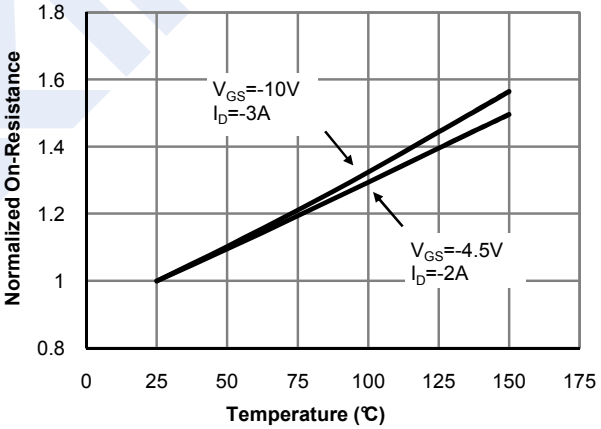

Figure 4: On-Resistance vs. Junction Temperature (Note E)

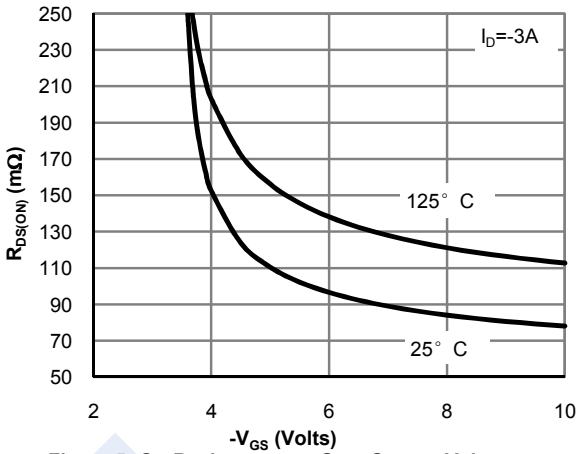

Figure 5: On-Resistance vs. Gate-Source Voltage (Note E)

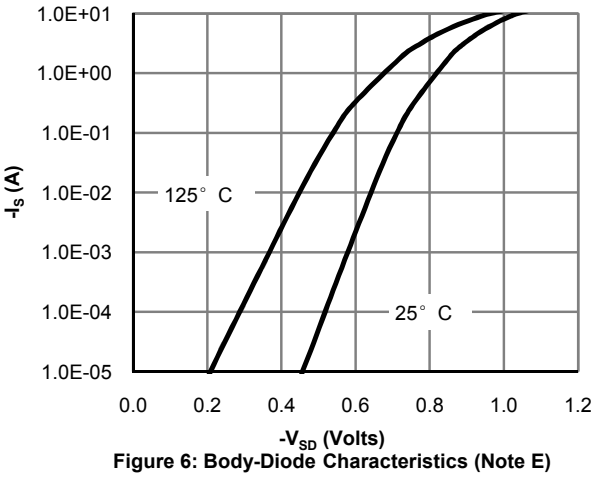

Figure 6: Body-Diode Characteristics (Note E)

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■ Typical Characterisitic

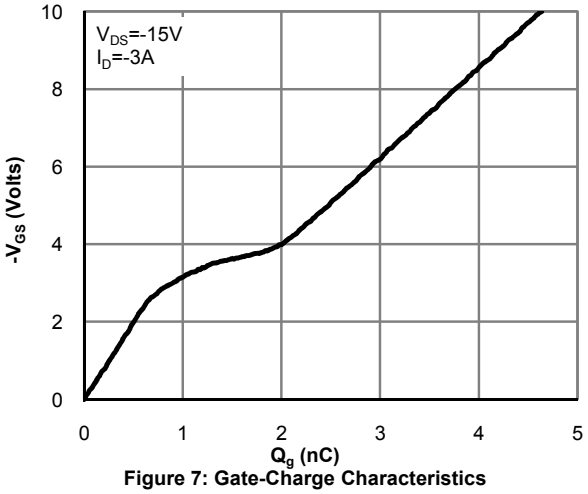

Figure 7: Gate-Charge Characteristics

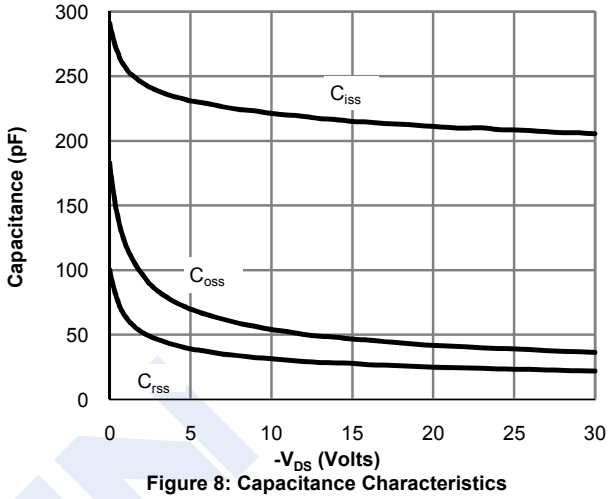

Figure 8: Capacitance Characteristics

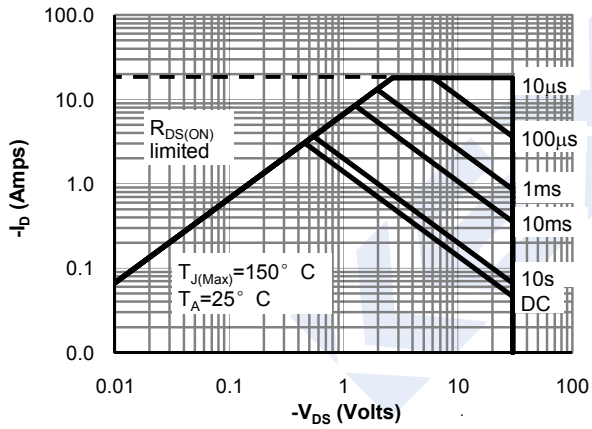

Figure 9: Maximum Forward Biased Safe Operating Area (Note F)

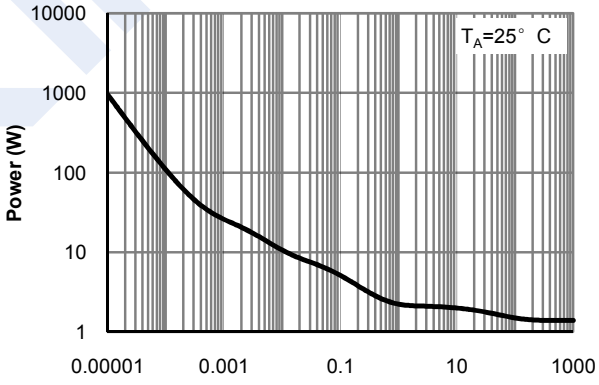

Figure 10: Single Pulse Power Rating Junction-to-Ambient (Note F)

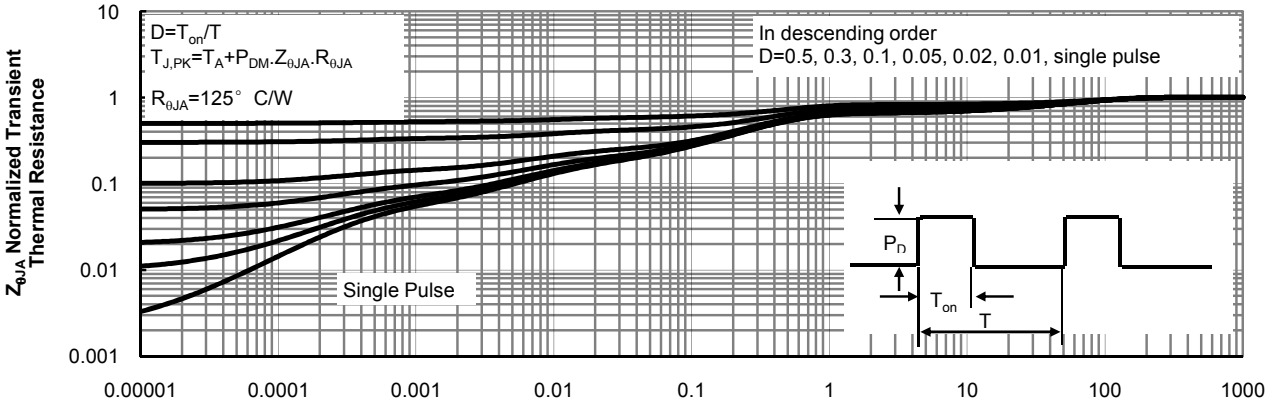

Figure 11: Normalized Maximum Transient Thermal Impedance (Note F)