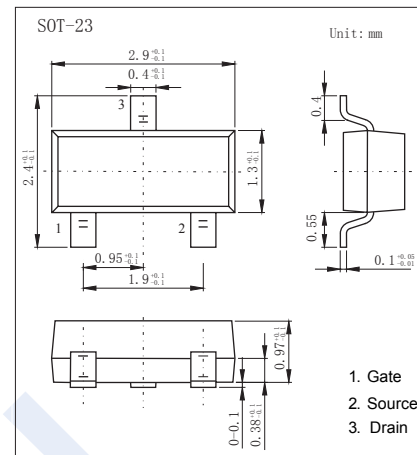
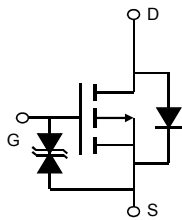


## P-Channel MOSFET

### AO3421E-HF (KO3421E-HF)

#### ■ Features

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



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

Parameter	Symbol	Rating	Unit
Drain-Source Voltage	$V_{DS}$	-30	V
Gate-Source Voltage	$V_{GS}$	$\pm 20$	
Continuous Drain Current	$I_D$	$T_A = 25^\circ C$	A
		$T_A = 70^\circ C$	
Pulsed Drain Current	$I_{DM}$	-18	
Power Dissipation	$P_D$	$T_A = 25^\circ C$	W
		$T_A = 70^\circ C$	
Thermal Resistance.Junction- to-Ambient	$R_{thJA}$	$t \leq 10s$	$^\circ C/W$
		Steady-State	
Thermal Resistance.Junction- to-Lead	$R_{thJL}$	80	
Junction Temperature	$T_J$	150	$^\circ C$
Junction Storage Temperature Range	$T_{stg}$	-55 to 150	

## P-Channel MOSFET

### AO3421E-HF (KO3421E-HF)

#### ■ Electrical Characteristics Ta = 25°C

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Drain-Source Breakdown Voltage	V <sub>DSS</sub>	I <sub>D</sub> =-250 μA, V <sub>GS</sub> =0V	-30			V
Zero Gate Voltage Drain Current	I <sub>DSS</sub>	V <sub>DS</sub> =-30V, V <sub>GS</sub> =0V			-1	μA
		V <sub>DS</sub> =-30V, V <sub>GS</sub> =0V, T <sub>J</sub> =55°C			-5	
Gate-Body leakage current	I <sub>GSS</sub>	V <sub>DS</sub> =0V, V <sub>GS</sub> =±16V			±10	μA
Gate Threshold Voltage	V <sub>GS(th)</sub>	V <sub>DS</sub> =V <sub>GS</sub> , I <sub>D</sub> =-250 μA	-1.4		-2.5	V
Static Drain-Source On-Resistance	R <sub>DS(on)</sub>	V <sub>GS</sub> =-10V, I <sub>D</sub> =-3A			95	mΩ
		V <sub>GS</sub> =-10V, I <sub>D</sub> =-3A T <sub>J</sub> =125°C			135	
		V <sub>GS</sub> =-4.5V, I <sub>D</sub> =-2A			160	
On state drain current	I <sub>D(ON)</sub>	V <sub>GS</sub> =-10V, V <sub>DS</sub> =-5V	-18			A
Forward Transconductance	g <sub>FS</sub>	V <sub>DS</sub> =-5V, I <sub>D</sub> =-3A		6		S
Input Capacitance	C <sub>iss</sub>	V <sub>GS</sub> =0V, V <sub>DS</sub> =-15V, f=1MHz		215		pF
Output Capacitance	C <sub>oss</sub>			46.5		
Reverse Transfer Capacitance	C <sub>rss</sub>			27.5		
Gate resistance	R <sub>g</sub>	V <sub>GS</sub> =0V, V <sub>DS</sub> =0V, f=1MHz		9.5	19	Ω
Total Gate Charge (10V)	Q <sub>g</sub>	V <sub>GS</sub> =-10V, V <sub>DS</sub> =-15V, I <sub>D</sub> =-3A		4.6	8	nC
Total Gate Charge (4.5V)				2.2	4	
Gate Source Charge	Q <sub>gs</sub>			0.85		
Gate Drain Charge	Q <sub>gd</sub>			1.2		
Turn-On DelayTime	t <sub>d(on)</sub>		V <sub>GS</sub> =-10V, V <sub>DS</sub> =-15V, R <sub>L</sub> =5Ω, R <sub>GEN</sub> =3Ω		8	
Turn-On Rise Time	t <sub>r</sub>			4		
Turn-Off DelayTime	t <sub>d(off)</sub>			13.5		
Turn-Off Fall Time	t <sub>f</sub>			4		
Body Diode Reverse Recovery Time	t <sub>rr</sub>	I <sub>F</sub> =-3A, di/dt=500A/μs		9		nC
Body Diode Reverse Recovery Charge	Q <sub>rr</sub>			16		
Maximum Body-Diode Continuous Current	I <sub>S</sub>				-1.5	A
Diode Forward Voltage	V <sub>SD</sub>	I <sub>S</sub> =-1A, V <sub>GS</sub> =0V			-1	V

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

#### ■ Marking

Marking	RP** <sub>F</sub>
---------	-------------------

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

■ Typical Characteristics

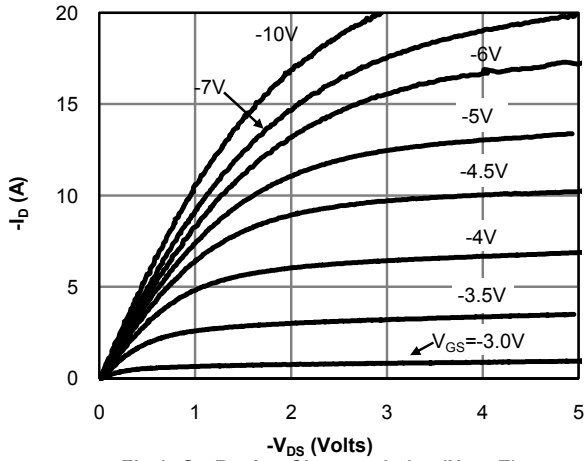


Figure 1: On-Region Characteristics (Note E)

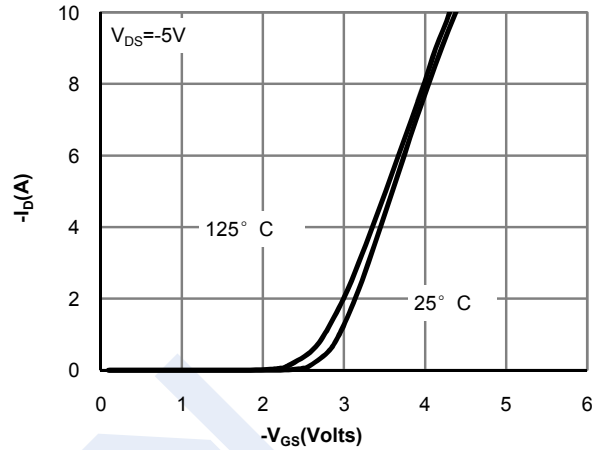


Figure 2: Transfer Characteristics (Note E)

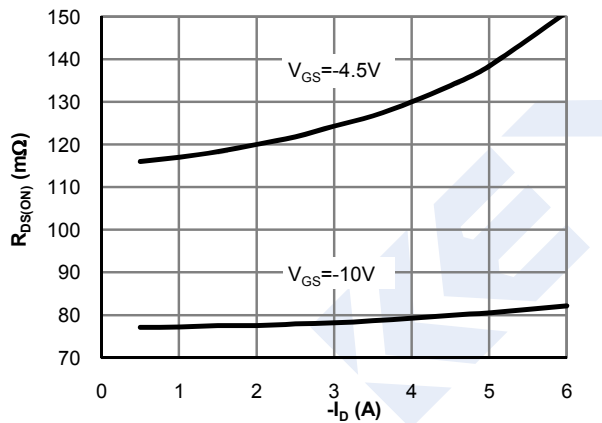


Figure 3: On-Resistance vs. Drain Current and Gate Voltage

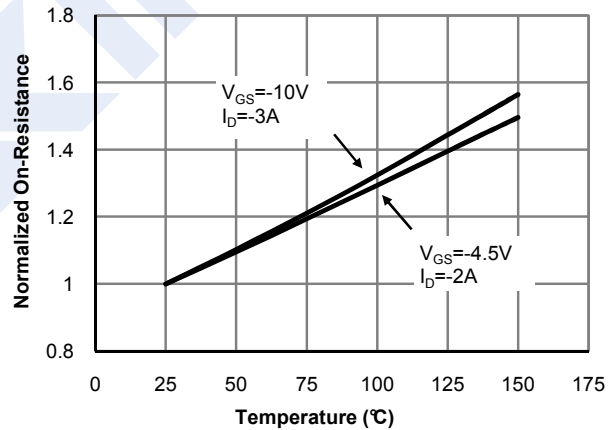


Figure 4: On-Resistance vs. Junction Temperature (Note E)

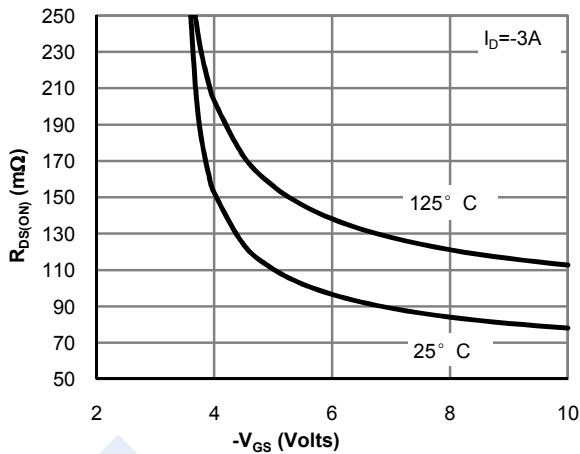


Figure 5: On-Resistance vs. Gate-Source Voltage (Note E)

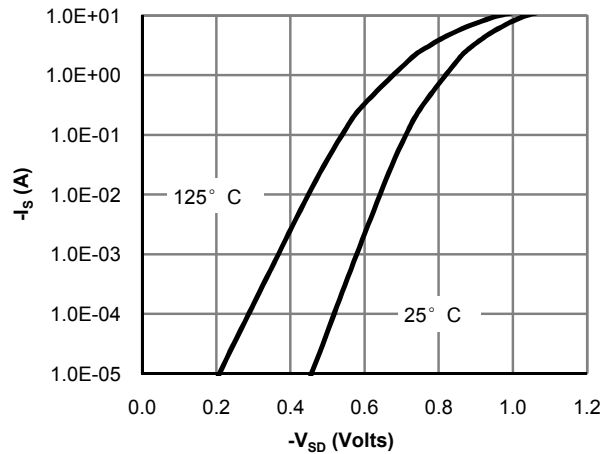


Figure 6: Body-Diode Characteristics (Note E)

## P-Channel MOSFET AO3421E-HF (K03421E-HF)

■ Typical Characteristic

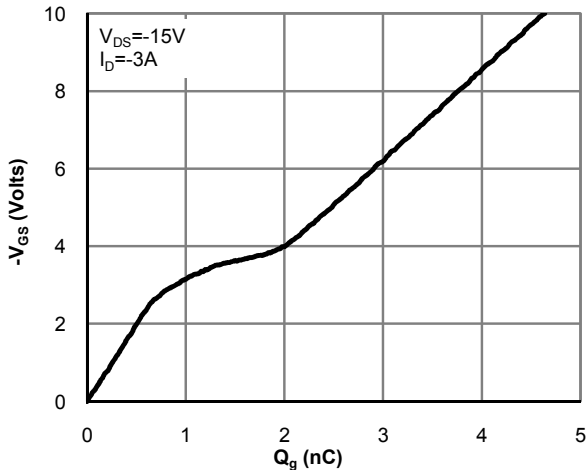


Figure 7: Gate-Charge Characteristics

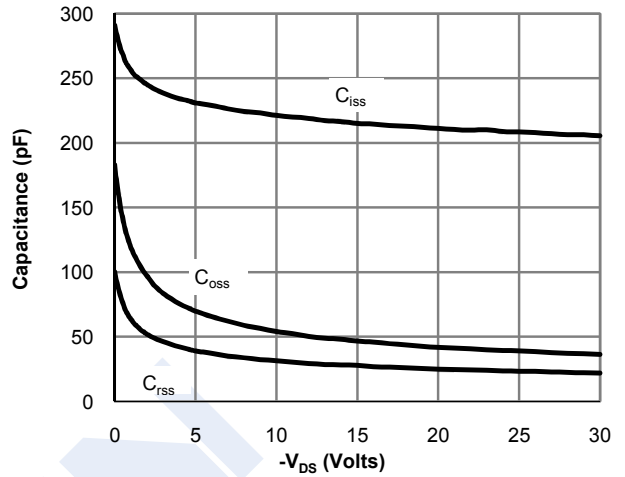


Figure 8: Capacitance Characteristics

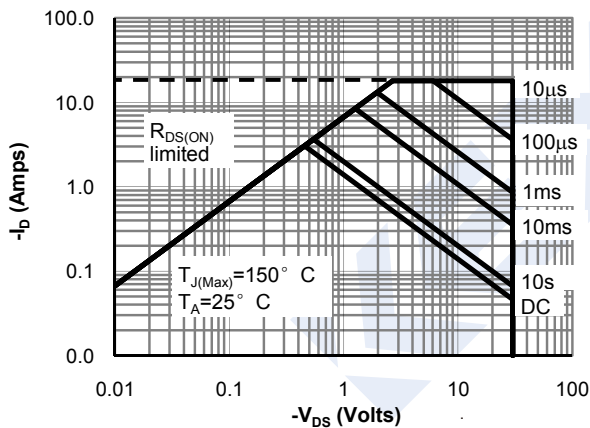


Figure 9: Maximum Forward Biased Safe Operating Area (Note F)

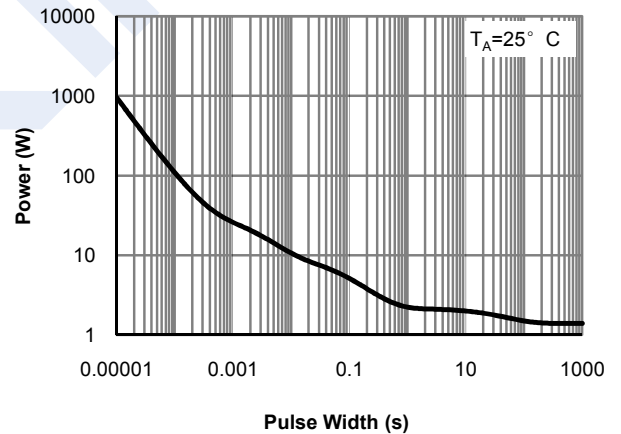


Figure 10: Single Pulse Power Rating Junction-to-Ambient (Note F)

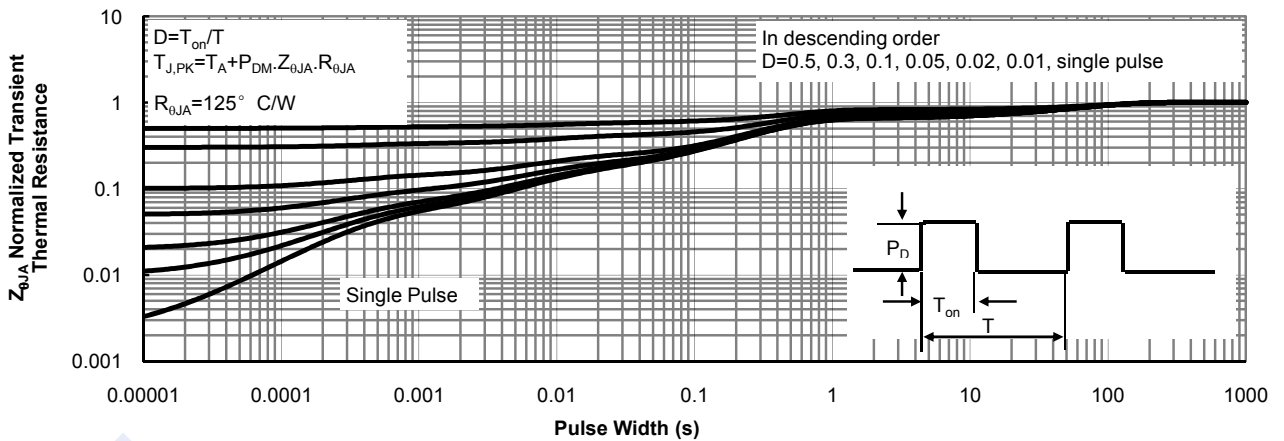


Figure 11: Normalized Maximum Transient Thermal Impedance (Note F)