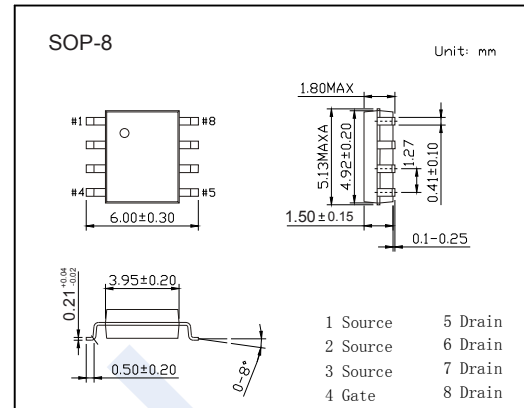
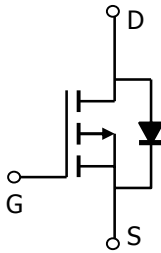


P-Channel MOSFET

AO4421 (KO4421)

■ Features

- $V_{DS} = -60V$
- $I_D = -6.2 A$ ($V_{GS} = -10V$)
- $R_{DS(ON)} < 40m\Omega$ ($V_{GS} = -10V$)
- $R_{DS(ON)} < 50m\Omega$ ($V_{GS} = -4.5V$)



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

Parameter	Symbol	Rating	Unit	
Drain-Source Voltage	V_{DS}	-60	V	
Gate-Source Voltage	V_{GS}	± 20		
Continuous Drain Current	I_D	$T_A = 25^\circ C$	-6.2	A
		$T_A = 70^\circ C$	-5	
Pulsed Drain Current	I_{DM}	-40		
Power Dissipation	P_D	$T_A = 25^\circ C$	3.1	W
		$T_A = 70^\circ C$	2	
Thermal Resistance.Junction- to-Ambient	R_{thJA}	$t \leq 10s$	40	$^\circ C/W$
		Steady-State	75	
Thermal Resistance.Junction- to-Lead	R_{thJL}	30		
Junction Temperature	T_J	150	$^\circ C$	
Junction Storage Temperature Range	T_{stg}	-55 to 150		

P-Channel MOSFET

AO4421 (KO4421)

■ 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	-60			V
Zero Gate Voltage Drain Current	I _{DSS}	V _{DS} =-48V, V _{GS} =0V			-1	μA
		V _{DS} =-48V, V _{GS} =0V, T _J =55°C			-5	
Gate-Body leakage current	I _{GSS}	V _{DS} =0V, V _{GS} =±20V			±100	nA
Gate Threshold Voltage	V _{GS(th)}	V _{DS} =V _{GS} , I _D =-250 μA	-1		-3	V
Static Drain-Source On-Resistance	R _{DS(on)}	V _{GS} =-10V, I _D =-6.2A			40	mΩ
		V _{GS} =-10V, I _D =-6.2A T _J =125°C			70	
		V _{GS} =-4.5V, I _D =-5A			50	
On state drain current	I _{D(ON)}	V _{GS} =-10V, V _{DS} =-5V	-40			A
Forward Transconductance	g _{FS}	V _{DS} =-5V, I _D =-6.2A		18		S
Input Capacitance	C _{iss}	V _{GS} =0V, V _{DS} =-30V, f=1MHz		2417	2900	pF
Output Capacitance	C _{oss}			179		
Reverse Transfer Capacitance	C _{rss}			120		
Gate resistance	R _g	V _{GS} =0V, V _{DS} =0V, f=1MHz		1.9	2.3	Ω
Total Gate Charge (10V)	Q _g	V _{GS} =-10V, V _{DS} =-30V, I _D =-6.2A		46.5	55	nC
Total Gate Charge (4.5V)				22.7		
Gate Source Charge	Q _{gs}			9.1		
Gate Drain Charge	Q _{gd}			9.2		
Turn-On DelayTime	t _{d(on)}				9.8	
Turn-On Rise Time	t _r	V _{GS} =-10V, V _{DS} =-30V, R _L =4.7Ω, R _{GEN} =3Ω		6.1		ns
Turn-Off DelayTime	t _{d(off)}			44		
Turn-Off Fall Time	t _f			12.7		
Body Diode Reverse Recovery Time	t _{rr}			34	42	
Body Diode Reverse Recovery Charge	Q _{rr}	I _F =-6.2A, di/dt=100A/us		47		nC
Maximum Body-Diode Continuous Current	I _S				-4.2	A
Diode Forward Voltage	V _{SD}	I _S =-1A, V _{GS} =0V			-1	V

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

■ Marking

Marking	4421
	KC****

P-Channel MOSFET

AO4421 (KO4421)

■ Typical Characteristics

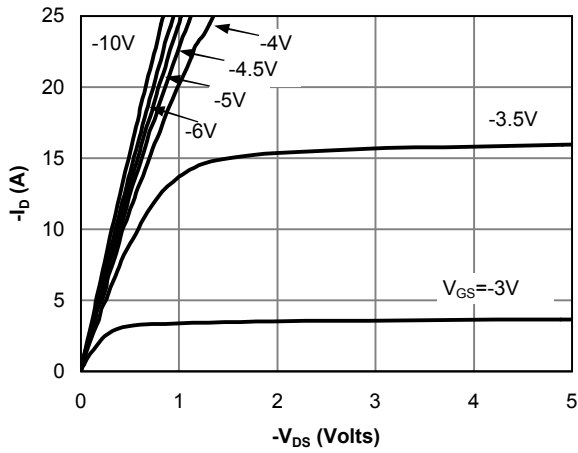


Fig 1: On-Region Characteristics

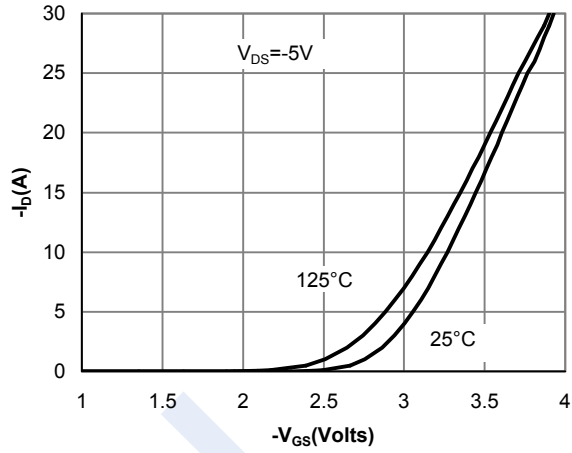


Figure 2: Transfer Characteristics

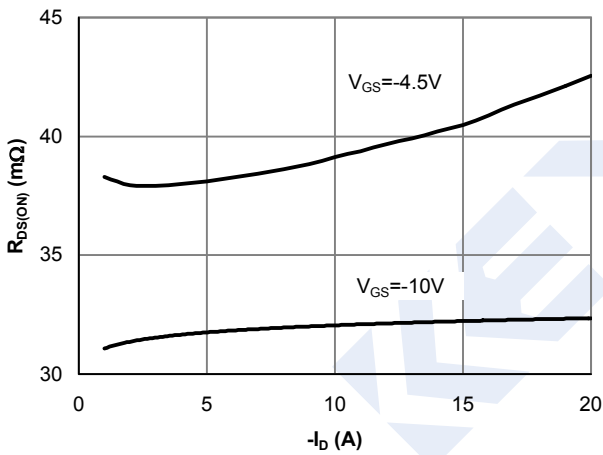


Figure 3: On-Resistance vs. Drain Current and Gate Voltage

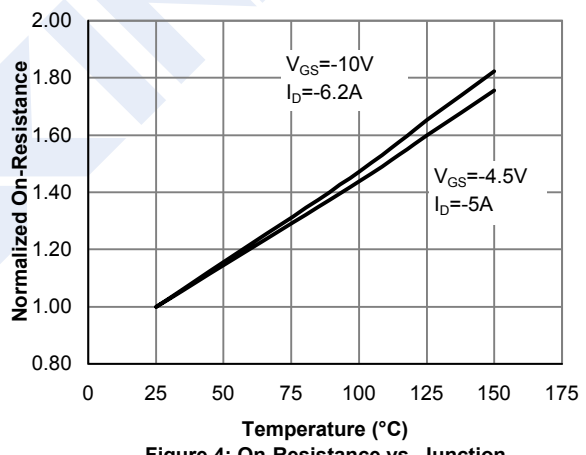


Figure 4: On-Resistance vs. Junction Temperature

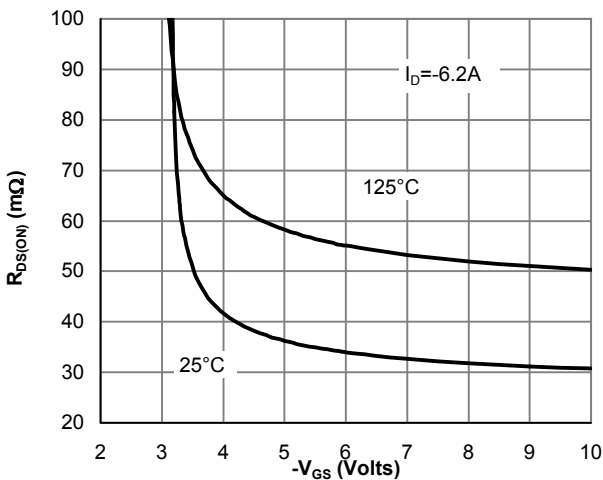


Figure 5: On-Resistance vs. Gate-Source Voltage

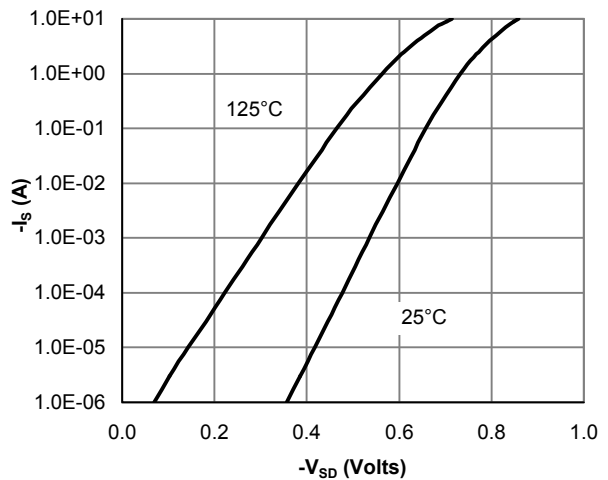


Figure 6: Body-Diode Characteristics

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■ Typical Characteristics

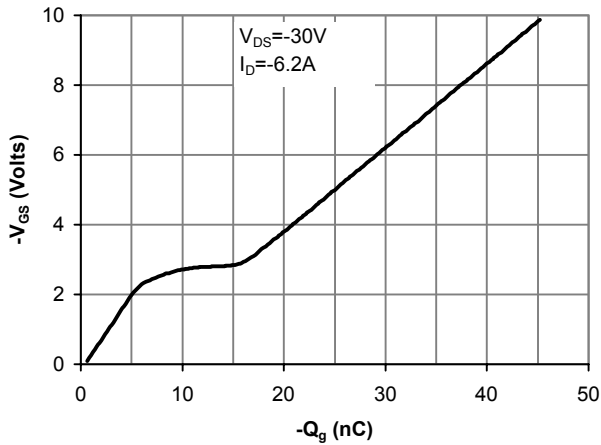


Figure 7: Gate-Charge Characteristics

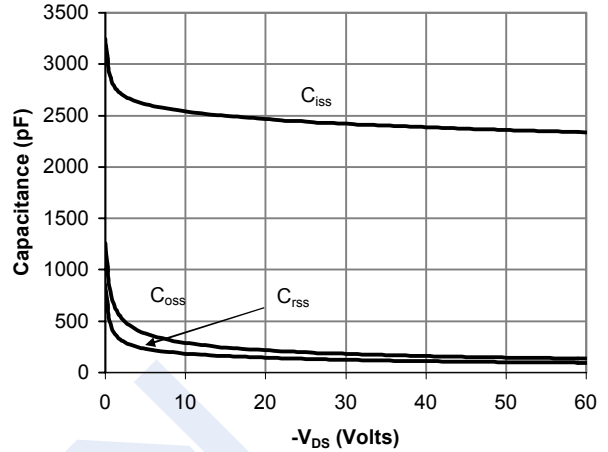


Figure 8: Capacitance Characteristics

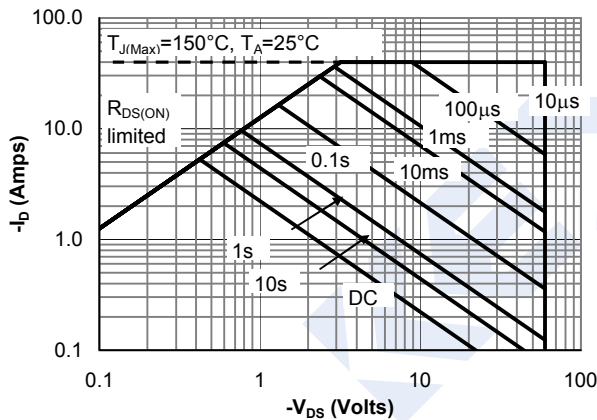


Figure 9: Maximum Forward Biased Safe Operating Area (Note E)

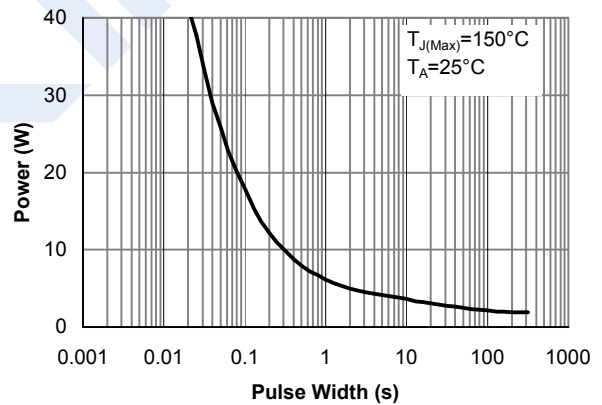


Figure 10: Single Pulse Power Rating Junction-to-Ambient (Note E)

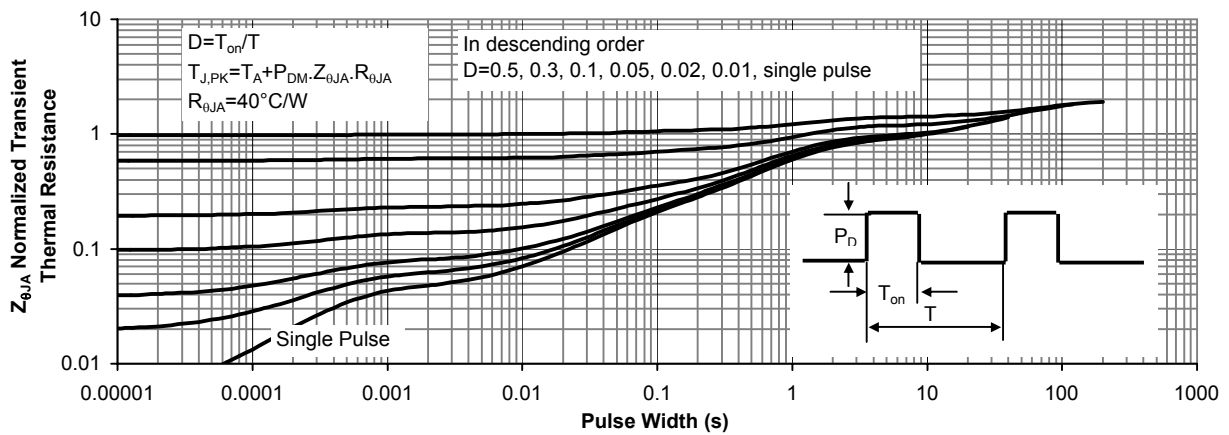


Figure 11: Normalized Maximum Transient Thermal Impedance