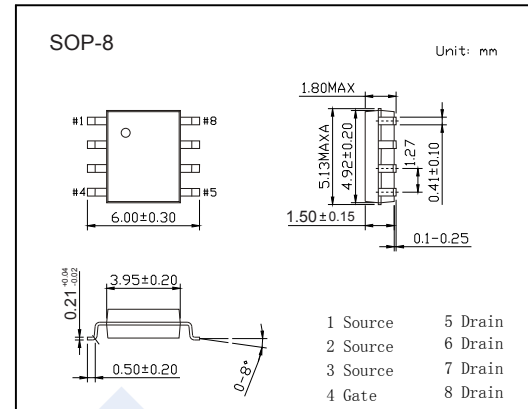
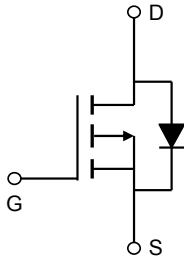


P-Channel MOSFET

AO4419 (KO4419)

■ Features

- $V_{DS} (V) = -30V$
- $I_D = -9.7 A (V_{GS} = -10V)$
- $R_{DS(ON)} < 20m\Omega (V_{GS} = -10V)$
- $R_{DS(ON)} < 35m\Omega (V_{GS} = -4.5V)$



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

Parameter	Symbol	Rating	Unit
Drain-Source Voltage	V_{DS}	-30	V
Gate-Source Voltage	V_{GS}	± 20	
Continuous Drain Current	I_D	$T_A = 25^\circ C$	A
		$T_A = 70^\circ C$	
Pulsed Drain Current	I_{DM}	-70	
Avalanche Current	I_{AS}, I_{AR}	-27	
Repetitive avalanche energy	$L = 0.1mH$	E_{AS}, E_{AR}	mJ
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}	24	
Junction Temperature	T_J	150	$^\circ C$
Junction Storage Temperature Range	T_{stg}	-55 to 150	

P-Channel MOSFET

AO4419 (KO4419)

■ 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	-30			V	
Zero Gate Voltage Drain Current	I _{DSS}	V _{DS} =-30V, V _{GS} =0V			-1	μA	
		V _{DS} =-30V, 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	-1.5		-2.5	V	
Static Drain-Source On-Resistance	R _{DS(on)}	V _{GS} =-10V, I _D =-9.7A			20	mΩ	
		V _{GS} =-10V, I _D =-9.7A T _J =125°C			29		
		V _{GS} =-4.5V, I _D =-7A			35		
On state drain current	I _{D(ON)}	V _{GS} =-10V, V _{DS} =-5V	-70			A	
Forward Transconductance	g _{FS}	V _{DS} =-5V, I _D =-9.7A		27		S	
Input Capacitance	C _{iss}	V _{GS} =0V, V _{DS} =-15V, f=1MHz		1040		pF	
Output Capacitance	C _{oss}			180			
Reverse Transfer Capacitance	C _{rss}			125			
Gate resistance	R _g	V _{GS} =0V, V _{DS} =0V, f=1MHz	2		6	Ω	
Total Gate Charge (10V)	Q _g	V _{GS} =-10V, V _{DS} =-15V, I _D =-9.7A		19		nC	
Total Gate Charge (4.5V)				9.6			
Gate Source Charge			Q _{gs}		3.6		
Gate Drain Charge			Q _{gd}		4.6		
Turn-On DelayTime	t _{d(on)}	V _{GS} =-10V, V _{DS} =-15V, R _L =1.5Ω, R _{GEN} =3Ω		10		ns	
Turn-On Rise Time	t _r			5.5			
Turn-Off DelayTime	t _{d(off)}			26			
Turn-Off Fall Time	t _f			9			
Body Diode Reverse Recovery Time	t _{rr}	I _F =-9.7A, di/dt=500A/μs		11.5		nC	
Body Diode Reverse Recovery Charge	Q _{rr}			25			
Maximum Body-Diode Continuous Current	I _S				-4	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	4419
	KC****

P-Channel MOSFET AO4419 (KO4419)

■ Typical Characteristics

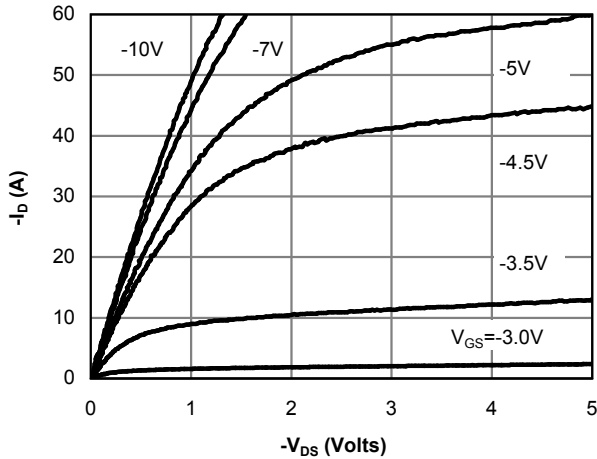


Fig 1: On-Region Characteristics (Note E)

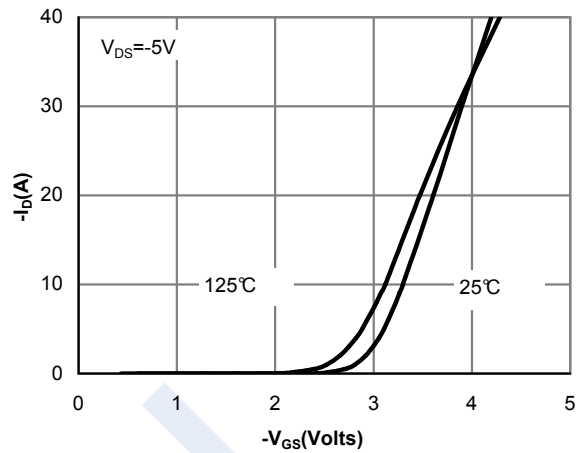


Figure 2: Transfer Characteristics (Note E)

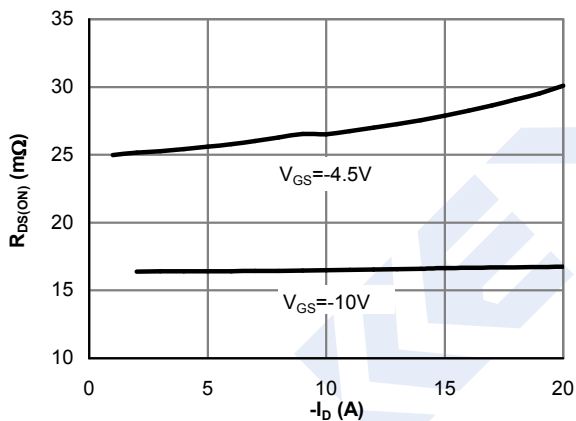


Figure 3: On-Resistance vs. Drain Current and Gate Voltage (Note E)

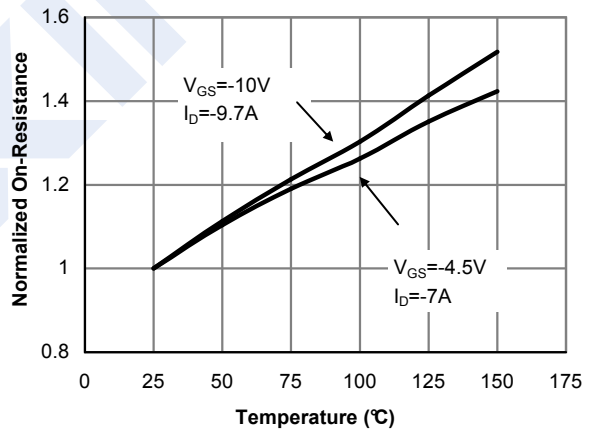


Figure 4: On-Resistance vs. Junction Temperature (Note E)

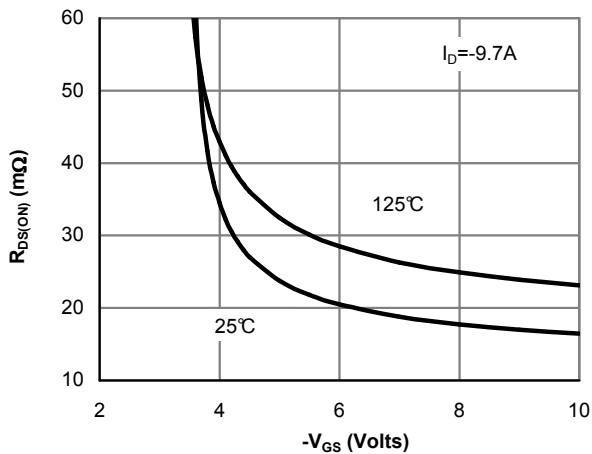


Figure 5: On-Resistance vs. Gate-Source Voltage (Note E)

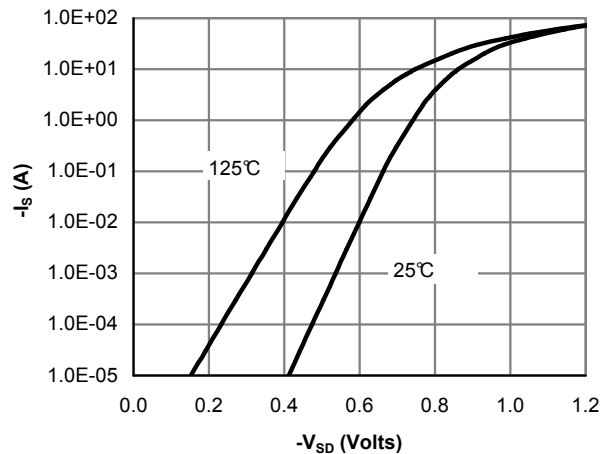


Figure 6: Body-Diode Characteristics (Note E)

P-Channel MOSFET AO4419 (KO4419)

■ Typical Characteristics

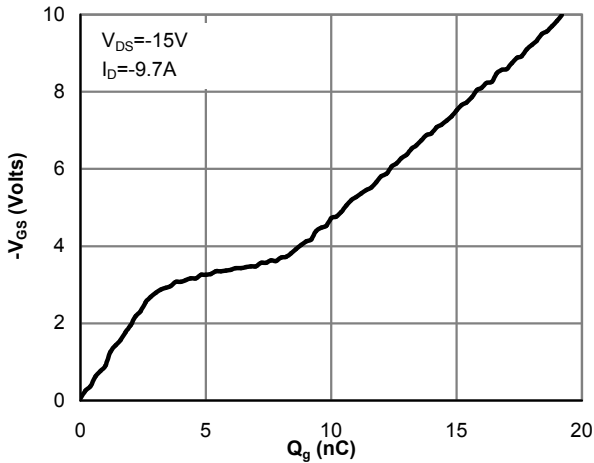


Figure 7: Gate-Charge Characteristics

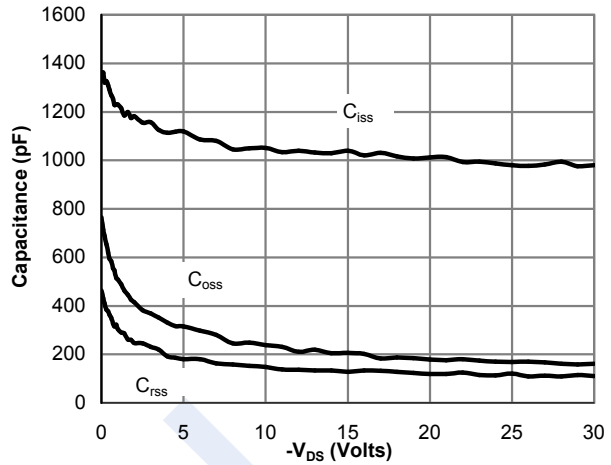


Figure 8: Capacitance Characteristics

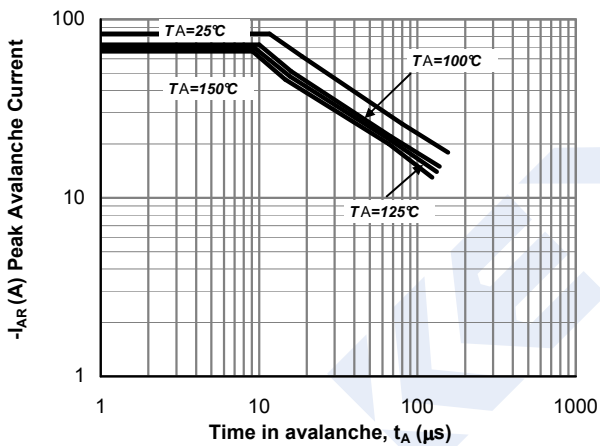


Figure 9: Single Pulse Avalanche capability (Note C)

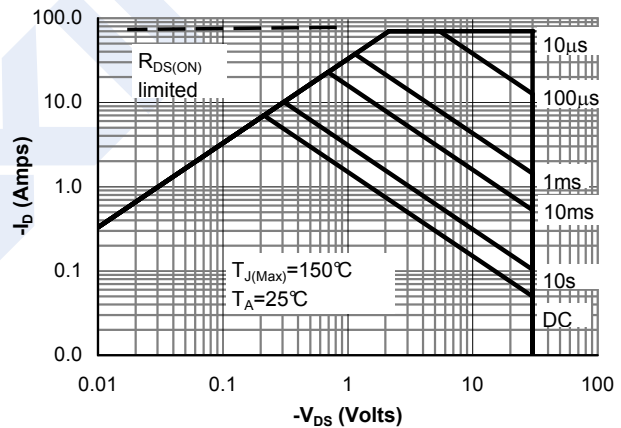


Figure 10: Maximum Forward Biased Safe Operating Area (Note F)



Figure 11: Single Pulse Power Rating Junction-to-Ambient (Note F)

P-Channel MOSFET AO4419 (KO4419)

■ Typical Characteristics

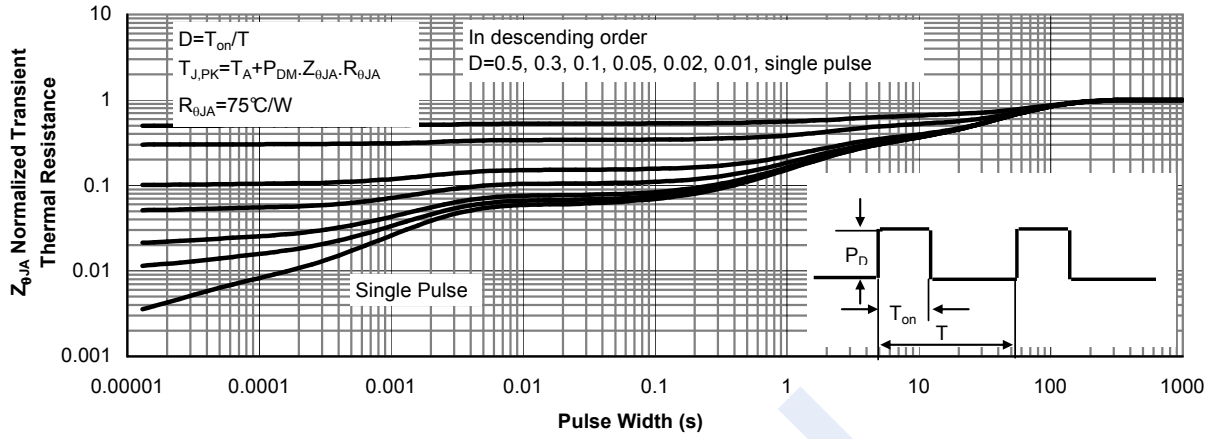


Figure 12: Normalized Maximum Transient Thermal Impedance (Note F)