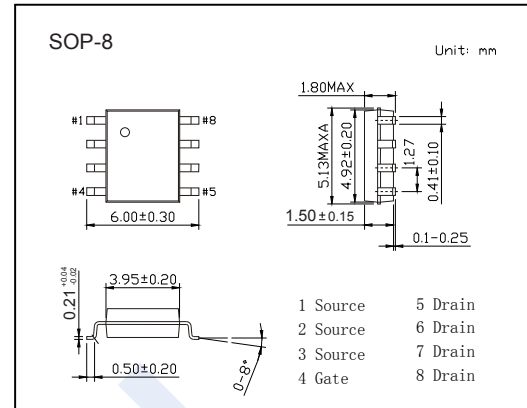
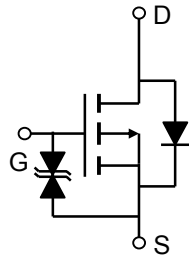


## P-Channel MOSFET

### AO4447 (KO4447)

#### ■ Features

- $V_{DS} (V) = -30V$
- $I_D = -15 A (V_{GS} = -10V)$
- $R_{DS(ON)} < 7.5m\Omega (V_{GS} = -10V)$
- $R_{DS(ON)} < 12m\Omega (V_{GS} = -4.5V)$
- ESD Rating: 4KV HBM



#### ■ 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	$I_D$	$T_a = 25^\circ C$	-15	A
		$T_a = 70^\circ C$	-13.6	
Pulsed Drain Current	$I_{DM}$	-60		
Avalanche Current	$I_{AR}$	40	A	
Repetitive avalanche energy $L=0.3mH$	$E_{AR}$	240	mJ	
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-Case	$R_{thJC}$	Steady-State	24	
Junction Temperature	$T_J$	150	$^\circ C$	
Junction Storage Temperature Range	$T_{stg}$	-55 to 150		

## P-Channel MOSFET

## AO4447 (KO4447)

## ■ 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 μ A, 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	μ A
		V <sub>DS</sub> =-30V, V <sub>GS</sub> =0V, T <sub>J</sub> =55°C			-10	
Gate-Body leakage current	I <sub>GSS</sub>	V <sub>DS</sub> =0V, V <sub>GS</sub> =±20V			±10	uA
Gate Threshold Voltage	V <sub>GS(th)</sub>	V <sub>DS</sub> =V <sub>GS</sub> I <sub>D</sub> =-250 μ A	-0.9	-1.25	-1.6	V
Static Drain-Source On-Resistance	R <sub>DS(on)</sub>	V <sub>GS</sub> =-10V, I <sub>D</sub> =-15A		6.7	7.5	m Ω
		V <sub>GS</sub> =-10V, I <sub>D</sub> =-15A T <sub>J</sub> =125°C		9.4	12	
		V <sub>GS</sub> =-4V, I <sub>D</sub> =-13A		9.2	12	
On state drain current	I <sub>D(ON)</sub>	V <sub>GS</sub> =-10V, V <sub>DS</sub> =-5V	-60			A
Forward Transconductance	g <sub>FS</sub>	V <sub>DS</sub> =-5V, I <sub>D</sub> =-15A		60		S
Input Capacitance	C <sub>iss</sub>	V <sub>GS</sub> =0V, V <sub>DS</sub> =-15V, f=1MHz		5500	6600	pF
Output Capacitance	C <sub>oss</sub>			745		
Reverse Transfer Capacitance	C <sub>rss</sub>			473		
Gate resistance	R <sub>g</sub>	V <sub>GS</sub> =0V, V <sub>DS</sub> =0V, f=1MHz		3.1	4	Ω
Total Gate Charge	Q <sub>g</sub>	V <sub>GS</sub> =-4.5V, V <sub>DS</sub> =-15 V, I <sub>D</sub> =-15A		88.8	120	nC
				45.2	60	
				10.1		
Gate Source Charge	Q <sub>gs</sub>	V <sub>GS</sub> =-10V, V <sub>DS</sub> =-15V, I <sub>D</sub> =-15A		10.1		
Gate Drain Charge	Q <sub>gd</sub>			19.4		
Turn-On DelayTime	t <sub>d(on)</sub>		V <sub>GS</sub> =-10V, V <sub>DS</sub> =-15V, R <sub>L</sub> =1.7 Ω, R <sub>G</sub> =3 Ω		12	
Turn-On Rise Time	t <sub>r</sub>			11.5		
Turn-Off DelayTime	t <sub>d(off)</sub>			100		
Turn-Off Fall Time	t <sub>f</sub>			40		
Body Diode Reverse Recovery Time	t <sub>rr</sub>	I <sub>F</sub> =-15A, dI/dt=100A/ μ s		46.6	60	
Body Diode Reverse Recovery Charge	Q <sub>rr</sub>			67.7		nC
Maximum Body-Diode Continuous Current	I <sub>S</sub>				-5.5	A
Diode Forward Voltage	V <sub>SD</sub>	I <sub>S</sub> =-1A, V <sub>GS</sub> =0V		-0.69	-1	V

## P-Channel MOSFET AO4447 (KO4447)

■ Typical Characteristics

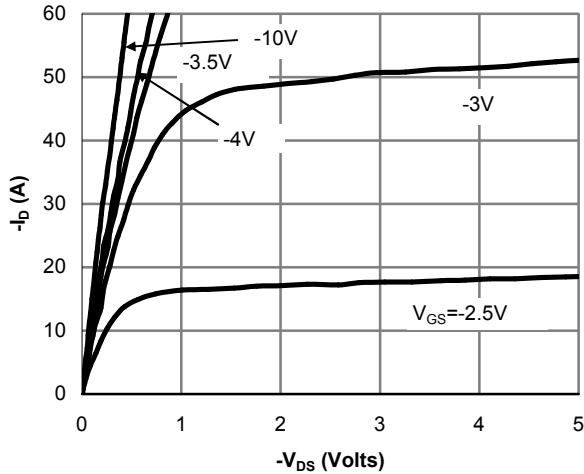


Figure 1: On-Region Characteristics

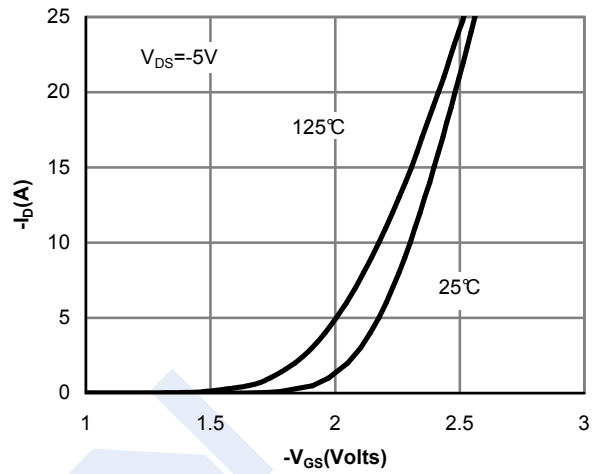


Figure 2: Transfer Characteristics

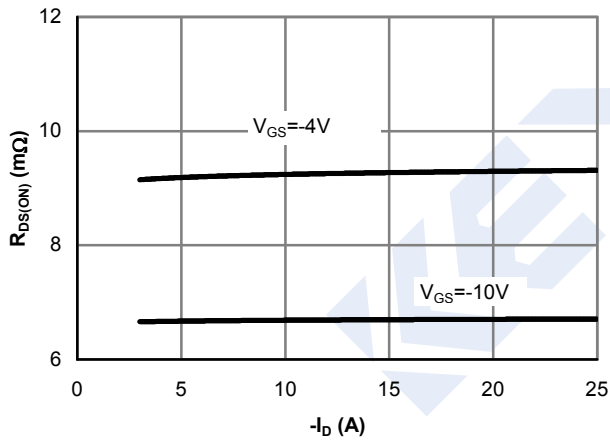


Figure 3: On-Resistance vs. Drain Current and Gate Voltage

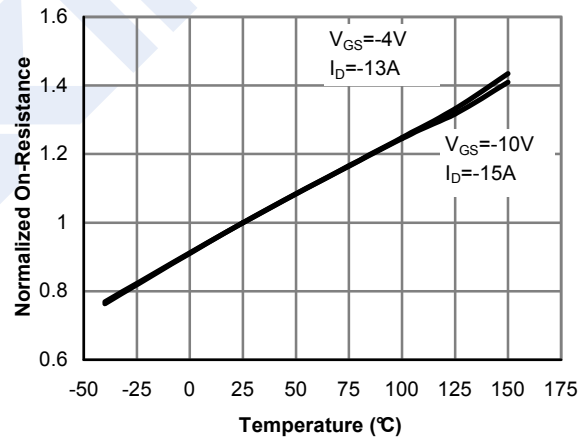


Figure 4: On-Resistance vs. Junction Temperature

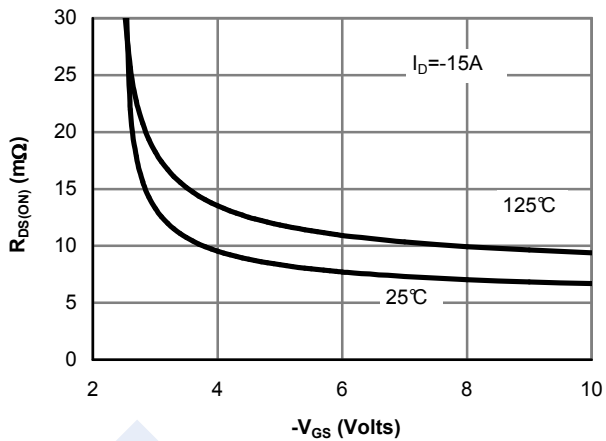


Figure 5: On-Resistance vs. Gate-Source Voltage

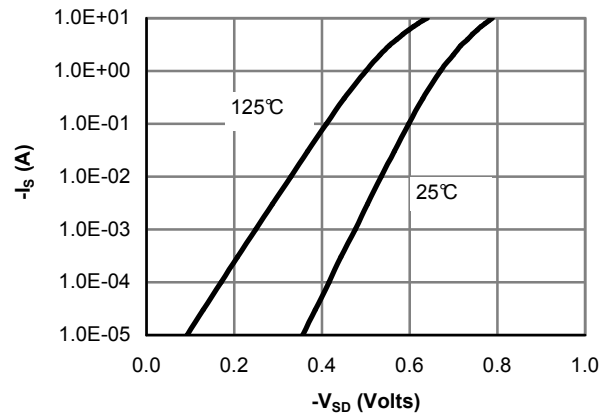


Figure 6: Body-Diode Characteristics

## P-Channel MOSFET AO4447 (KO4447)

■ Typical Characteristics

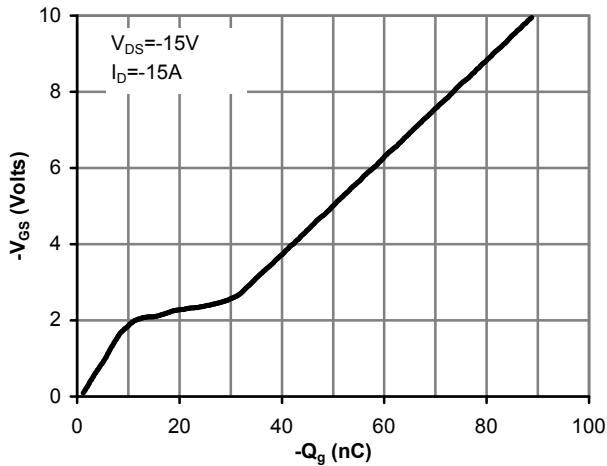


Figure 7: Gate-Charge Characteristics

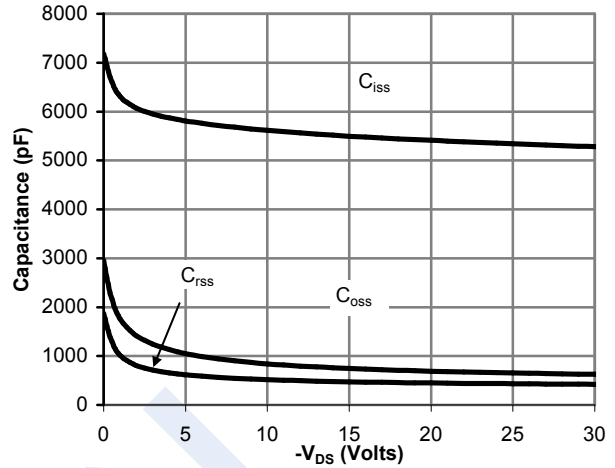


Figure 8: Capacitance Characteristics

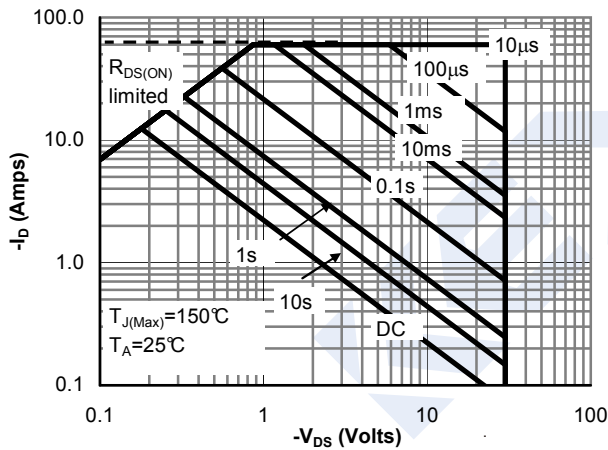


Figure 9: Maximum Forward Biased Safe Operating Area (Note E)

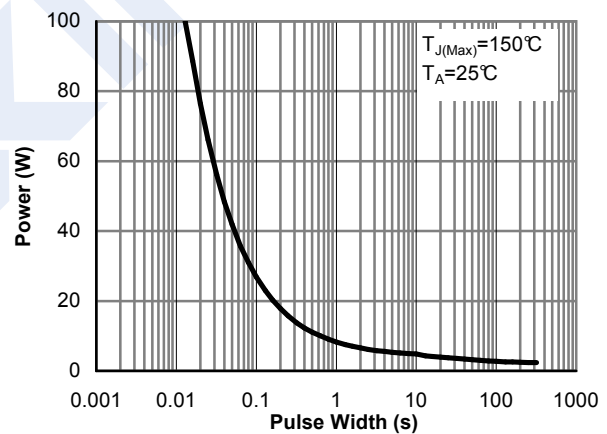


Figure 10: Single Pulse Power Rating Junction-to-Ambient (Note E)

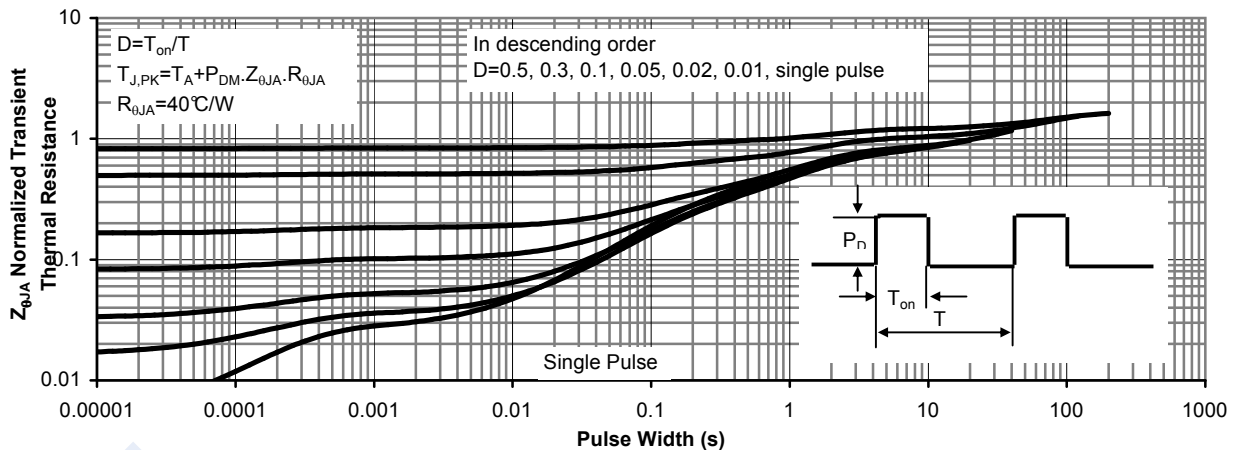


Figure 11: Normalized Maximum Transient Thermal Impedance