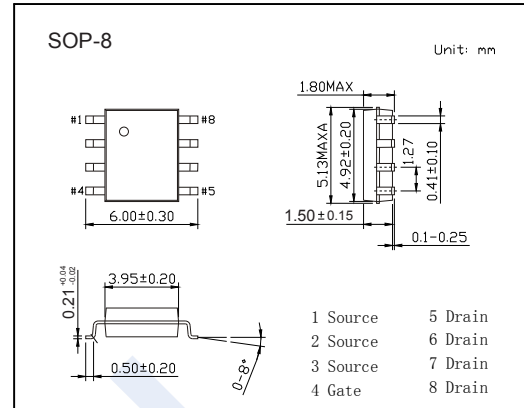
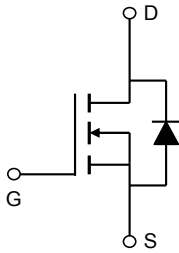


## N-Channel MOSFET

### AO4448 (KO4448)

#### ■ Features

- $V_{DS} (V) = 80V$
- $I_D = 10 A (V_{GS} = 10V)$
- $R_{DS(ON)} < 16m\Omega (V_{GS} = 10V)$
- $R_{DS(ON)} < 20m\Omega (V_{GS} = 7V)$



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

Parameter	Symbol	Rating	Unit	
Drain-Source Voltage	$V_{DS}$	80	V	
Gate-Source Voltage	$V_{GS}$	$\pm 25$		
Continuous Drain Current	$I_D$	$T_A=25^\circ C$	10	
		$T_A=70^\circ C$	8	
Pulsed Drain Current	$I_{DM}$	70	A	
Avalanche Current	$I_{AS}, I_{AR}$	45		
Avalanche Energy	$L=0.1mH$	$E_{AS}, E_{AR}$	101	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-Lead	$R_{thJL}$	24		
Junction Temperature	$T_J$	150	$^\circ C$	
Storage Temperature Range	$T_{stg}$	-55 to 150		

## N-Channel MOSFET

### AO4448 (KO4448)

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

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Drain-Source Breakdown Voltage	V <sub>bss</sub>	I <sub>D</sub> =250μA, V <sub>GS</sub> =0V	80			V
Zero Gate Voltage Drain Current	I <sub>DSS</sub>	V <sub>DS</sub> =80V, V <sub>GS</sub> =0V			10	μA
		V <sub>DS</sub> =80V, V <sub>GS</sub> =0V, T <sub>J</sub> =55°C			50	
Gate-Body Leakage Current	I <sub>GSS</sub>	V <sub>DS</sub> =0V, V <sub>GS</sub> =±25V			±100	nA
Gate Threshold Voltage	V <sub>GS(th)</sub>	V <sub>DS</sub> =V <sub>GS</sub> , I <sub>D</sub> =250μA	2.8		4.2	V
Static Drain-Source On-Resistance	R <sub>DS(on)</sub>	V <sub>GS</sub> =10V, I <sub>D</sub> =10A			16	mΩ
		V <sub>GS</sub> =10V, I <sub>D</sub> =10A, T <sub>J</sub> =125°C			28.5	
		V <sub>GS</sub> =7V, I <sub>D</sub> =8A			20	
On State Drain Current	I <sub>D(on)</sub>	V <sub>GS</sub> =10V, V <sub>DS</sub> =5V	70			A
Forward Transconductance	g <sub>FS</sub>	V <sub>DS</sub> =5V, I <sub>D</sub> =10A		23		S
Input Capacitance	C <sub>iss</sub>	V <sub>GS</sub> =0V, V <sub>DS</sub> =40V, f=1MHz	1335		2005	pF
Output Capacitance	C <sub>oss</sub>		150		280	
Reverse Transfer Capacitance	C <sub>rss</sub>		40		100	
Gate Resistance	R <sub>g</sub>		0.35		1.2	
Total Gate Charge	Q <sub>g</sub>	V <sub>GS</sub> =10V, V <sub>DS</sub> =40V, I <sub>D</sub> =10A	22		34	nC
Gate Source Charge	Q <sub>gs</sub>		8.8		13	
Gate Drain Charge	Q <sub>gd</sub>		5		11	
Turn-On DelayTime	t <sub>d(on)</sub>	V <sub>GS</sub> =10V, V <sub>DS</sub> =40V, R <sub>L</sub> =4Ω, R <sub>GEN</sub> =3Ω		12		ns
Turn-On Rise Time	t <sub>r</sub>			9		
Turn-Off DelayTime	t <sub>d(off)</sub>			20		
Turn-Off Fall Time	t <sub>f</sub>			8		
Body Diode Reverse Recovery Time	t <sub>rr</sub>	I <sub>F</sub> = 10A, di/dt= 500A/μs	14.5		27.5	nC
Body Diode Reverse Recovery Charge	Q <sub>rr</sub>		45.5		85	
Maximum Body-Diode Continuous Current	I <sub>S</sub>				4	A
Diode Forward Voltage	V <sub>SD</sub>	I <sub>S</sub> =1A, V <sub>GS</sub> =0V			1	V

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

#### ■ Marking

Marking	4448 KC****
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## N-Channel MOSFET AO4448 (KO4448)

■ Typical Characteristics

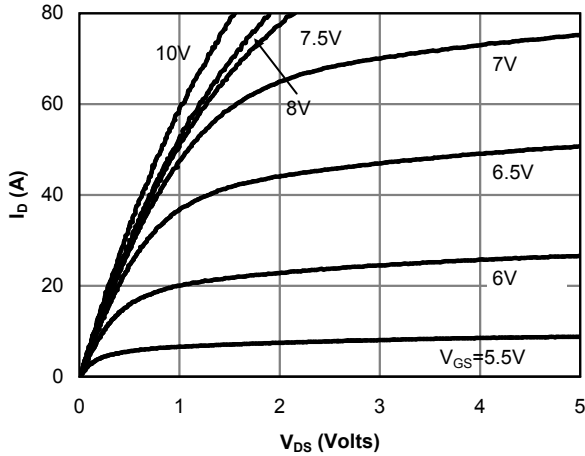


Fig 1: On-Region Characteristics (Note E)

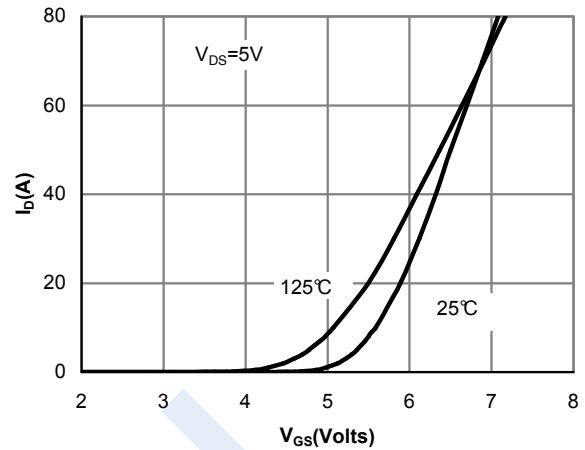


Figure 2: Transfer Characteristics (Note E)

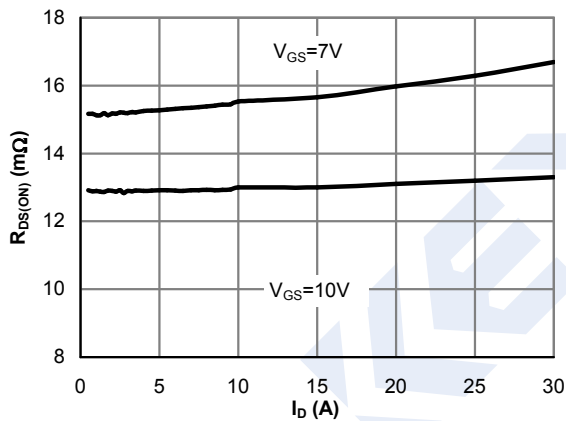


Figure 3: On-Resistance vs. Drain Current and Gate Voltage (Note E)

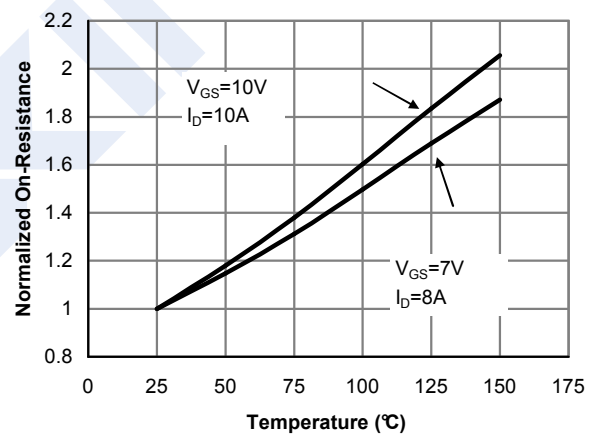


Figure 4: On-Resistance vs. Junction Temperature (Note E)

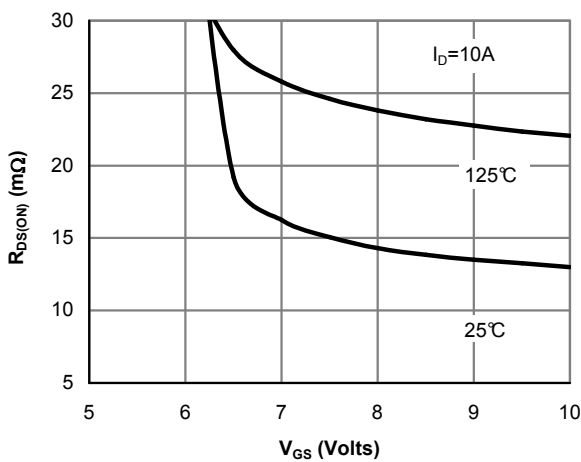


Figure 5: On-Resistance vs. Gate-Source Voltage (Note E)

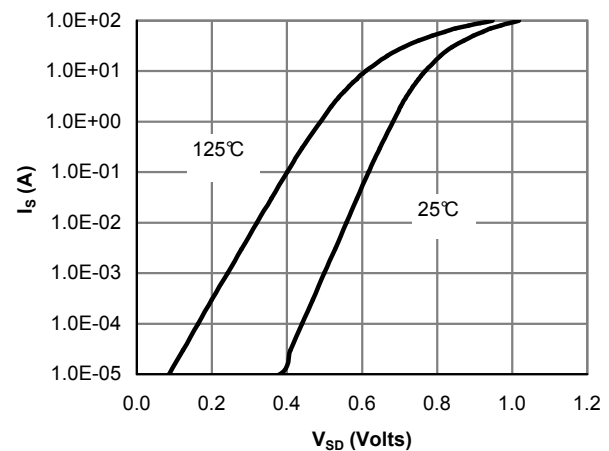


Figure 6: Body-Diode Characteristics (Note E)

## N-Channel MOSFET AO4448 (KO4448)

■ Typical Characteristics

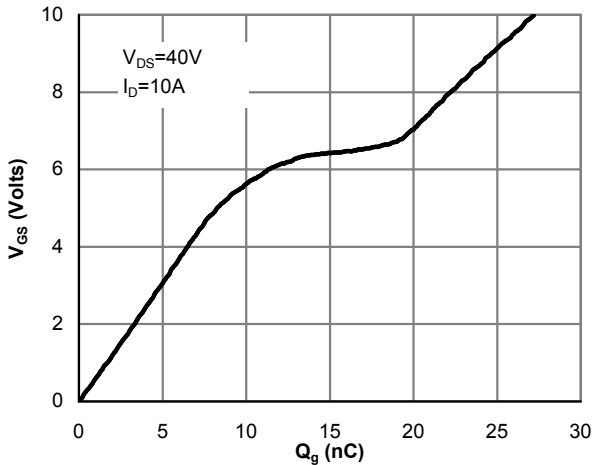


Figure 7: Gate-Charge Characteristics

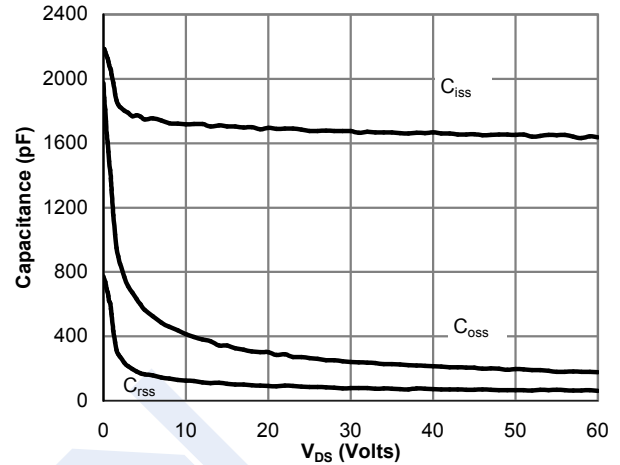


Figure 8: Capacitance Characteristics

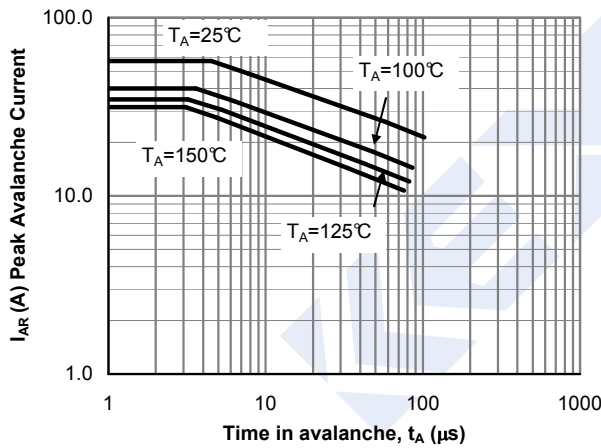


Figure 9: Single Pulse Avalanche capability (Note C)

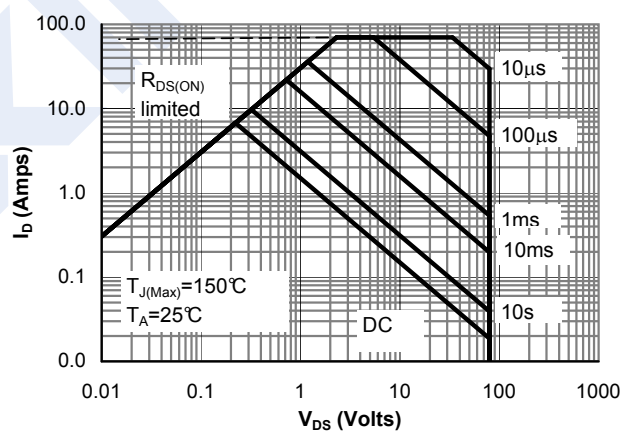


Figure 10: Maximum Forward Biased Safe Operating Area (Note F)

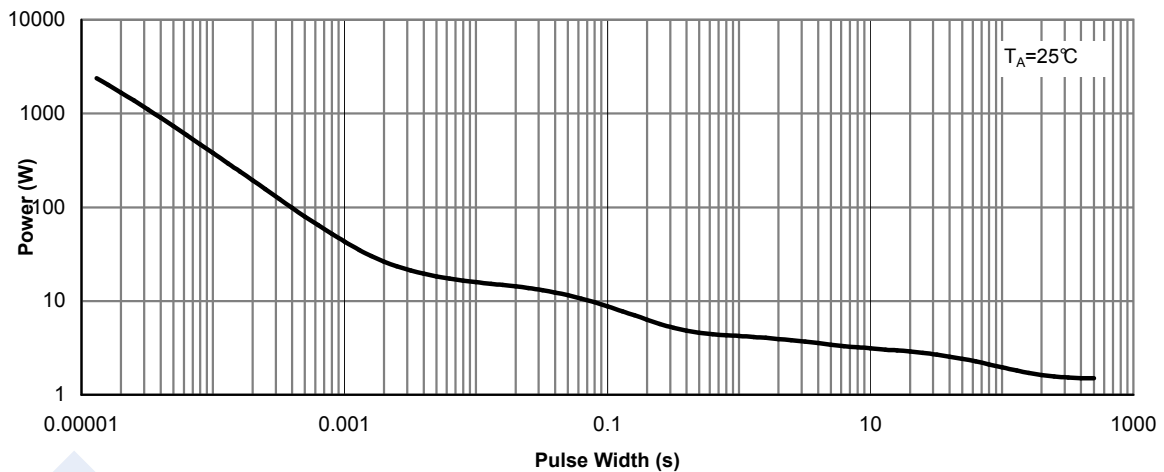


Figure 11: Single Pulse Power Rating Junction-to-Ambient (Note F)

## N-Channel MOSFET AO4448 (KO4448)

■ Typical Characteristics

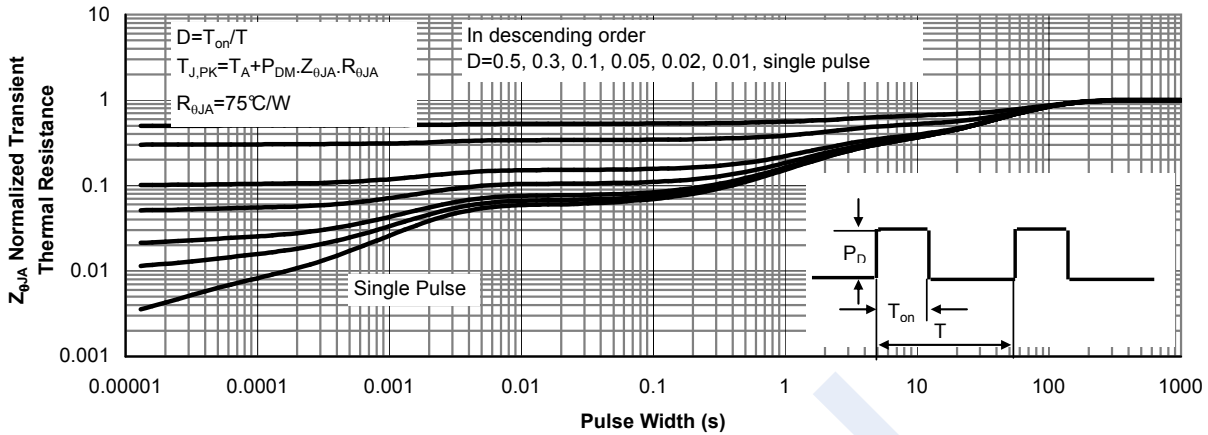


Figure 12: Normalized Maximum Transient Thermal Impedance (Note F)

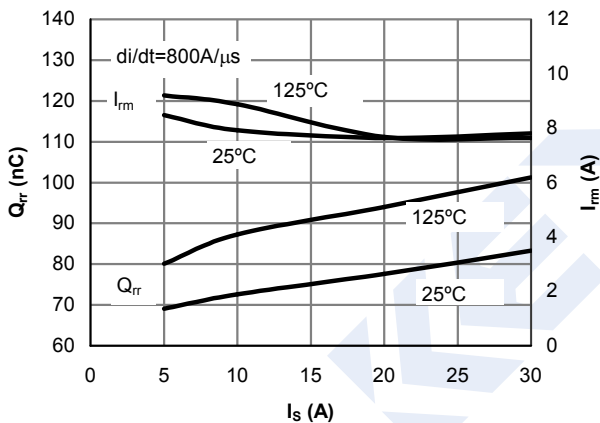


Figure 13: Diode Reverse Recovery Charge and Peak Current vs. Conduction Current

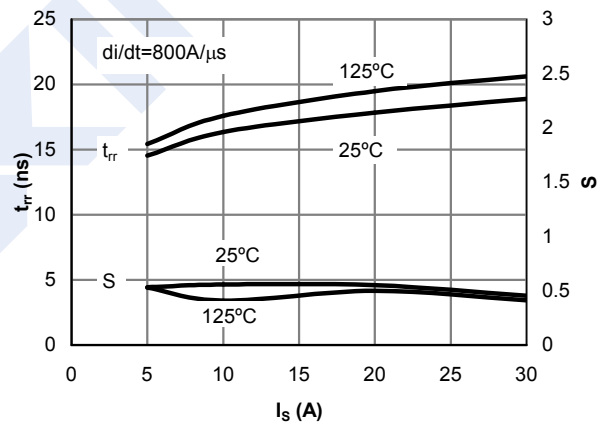


Figure 14: Diode Reverse Recovery Time and Softness Factor vs. Conduction Current

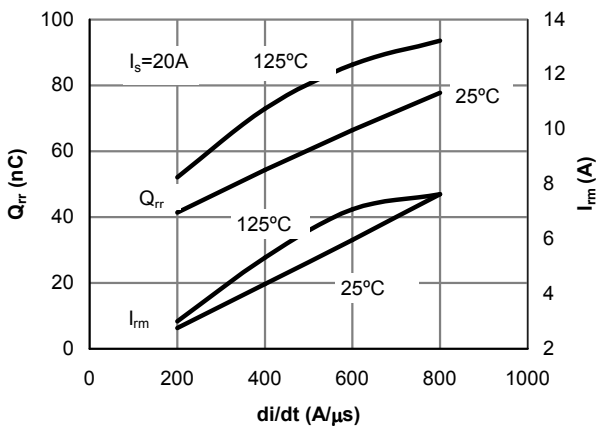


Figure 15: Diode Reverse Recovery Charge and Peak Current vs. di/dt

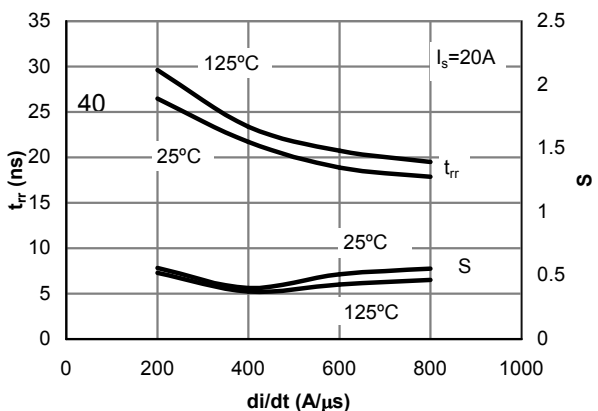


Figure 16: Diode Reverse Recovery Time and Softness Factor vs. di/dt