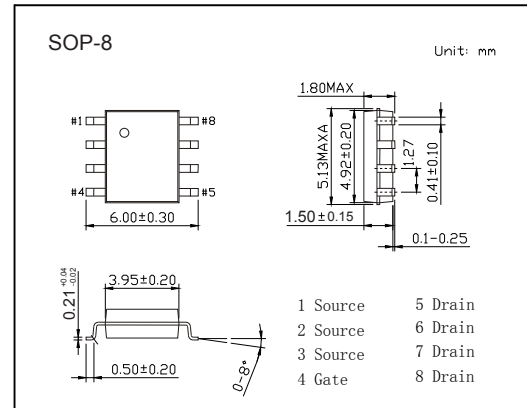
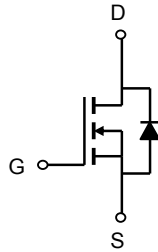


N-Channel MOSFET

AO4406 (K04406)

■ Features

- $V_{DS} (V) = 30V$
- $I_D = 11.5 A (V_{GS} = 10V)$
- $R_{DS(ON)} < 14m\Omega (V_{GS} = 10V)$
- $R_{DS(ON)} < 16.5m\Omega (V_{GS} = 4.5V)$
- $R_{DS(ON)} < 26m\Omega (V_{GS} = 2.5V)$



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

Parameter	Symbol	Rating	Unit
Drain-Source Voltage	V_{DS}	30	V
Gate-Source Voltage	V_{GS}	± 12	V
Continuous Drain Current	I_D	$T_A=25^\circ C$	11.5
		$T_A=70^\circ C$	9.6
Pulsed Drain Current	I_{DM}	80	A
Avalanche Current	I_{AV}	25	A
Repetitive Avalanche Energy $L=0.3mH$	E_{AV}	94	mJ
Power Dissipation	P_D	$T_A=25^\circ C$	3
		$T_A=70^\circ C$	2.1
Thermal Resistance.Junction- to-Ambient	R_{thJA}	$t \leq 10s$	40
		Steady-State	65
Thermal Resistance.Junction- to-Case	R_{thJC}	16	$^\circ C/W$
Junction Temperature	T_J	150	$^\circ C$
Storage Temperature Range	T_{stg}	-55 to 150	$^\circ C$

N-Channel MOSFET

AO4406 (K04406)

■ 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} =±12V			±100	nA
Gate Threshold Voltage	V _{GS(th)}	V _{DS} =V _{GS} , I _D =250 μA	0.8	1	1.5	V
Static Drain-Source On-Resistance	R _{DS(on)}	V _{GS} =10V, I _D =12A		11.5	14	mΩ
		V _{GS} =10V, I _D =12A, T _J =125°C		16	19.2	
		V _{GS} =4.5V, I _D =10A		13.5	16.5	
		V _{GS} =2.5V, I _D =8A		19.5	26	
On State Drain Current	I _{D(ON)}	V _{GS} =4.5V, V _{DS} =5V	60			A
Forward Transconductance	g _{FS}	V _{DS} =5V, I _D =10A	25	38		S
Input Capacitance	C _{iss}	V _{GS} =0V, V _{DS} =15V, f=1MHz		1630	2300	pF
Output Capacitance	C _{oss}			201		
Reverse Transfer Capacitance	C _{rss}			142	200	
Gate Resistance	R _g	V _{GS} =0V, V _{DS} =0V, f=1MHz	0.4	0.8	1.8	Ω
Total Gate Charge	Q _g	V _{GS} =4.5V, V _{DS} =15V, I _D =11.5A	13.5	18	24	nC
Gate Source Charge	Q _{gs}			2.5		
Gate Drain Charge	Q _{gd}			5.5		
Turn-On DelayTime	t _{d(on)}	V _{GS} =10V, V _{DS} =15V, R _L =1.2Ω, R _{GEN} =3Ω		4	6	ns
Turn-On Rise Time	t _r			5	7.5	
Turn-Off DelayTime	t _{d(off)}			32	50	
Turn-Off Fall Time	t _f			5	10	
Body Diode Reverse Recovery Time	t _{rr}	I _F =10A, di/dt=100A/μs		18.7	24	nC
Body Diode Reverse Recovery Charge	Q _{rr}			12.5	15	
Maximum Body-Diode Continuous Current	I _S				4.5	A
Diode Forward Voltage	V _{SD}	I _S =10A, V _{GS} =0V		0.83	1	V

■ Marking

Marking	4406 KC****
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N-Channel MOSFET AO4406 (KO4406)

■ Typical Characteristics

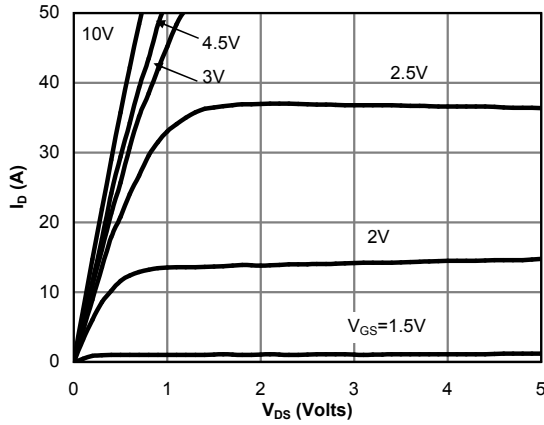


Fig 1: On-Region Characteristics

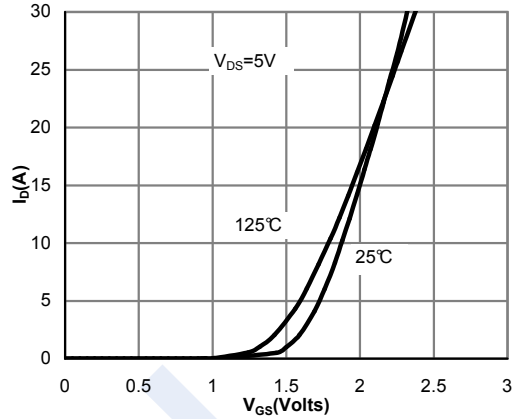


Figure 2: Transfer Characteristics

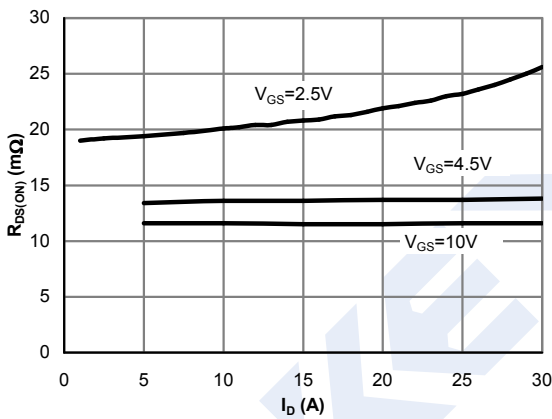


Figure 3: On-Resistance vs. Drain Current and Gate Voltage

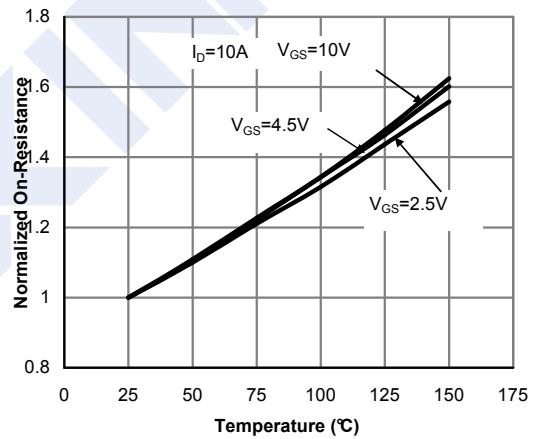


Figure 4: On-Resistance vs. Junction Temperature

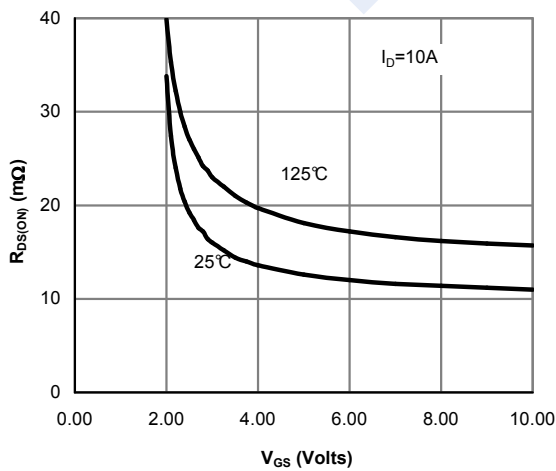


Figure 5: On-Resistance vs. Gate-Source Voltage

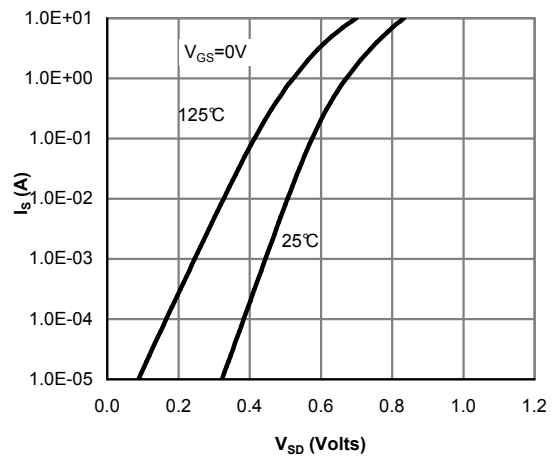


Figure 6: Body-Diode Characteristics

N-Channel MOSFET AO4406 (KO4406)

■ Typical Characteristics

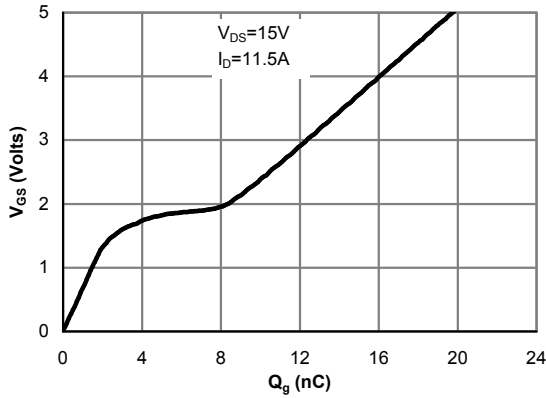


Figure 7: Gate-Charge Characteristics

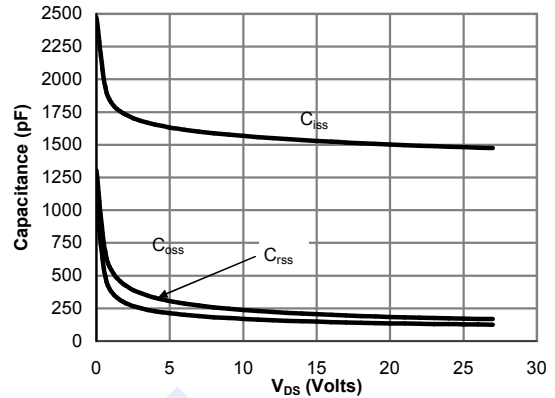


Figure 8: Capacitance Characteristics

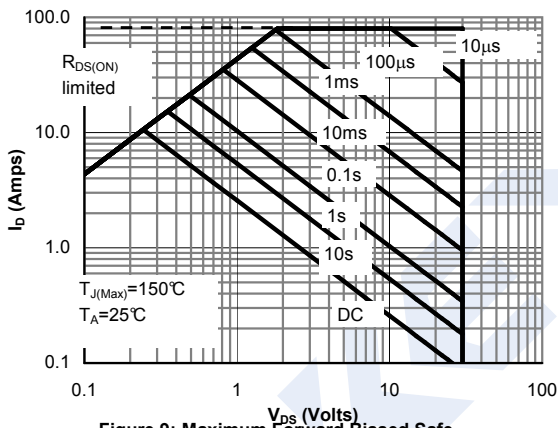


Figure 9: Maximum Forward Biased Safe Operating Area (Note E)

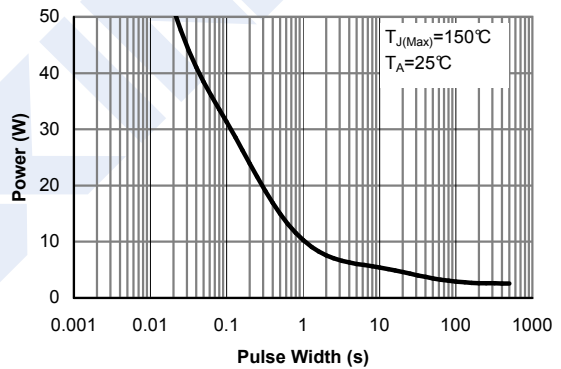


Figure 10: Single Pulse Power Rating Junction-to-Ambient (Note E)

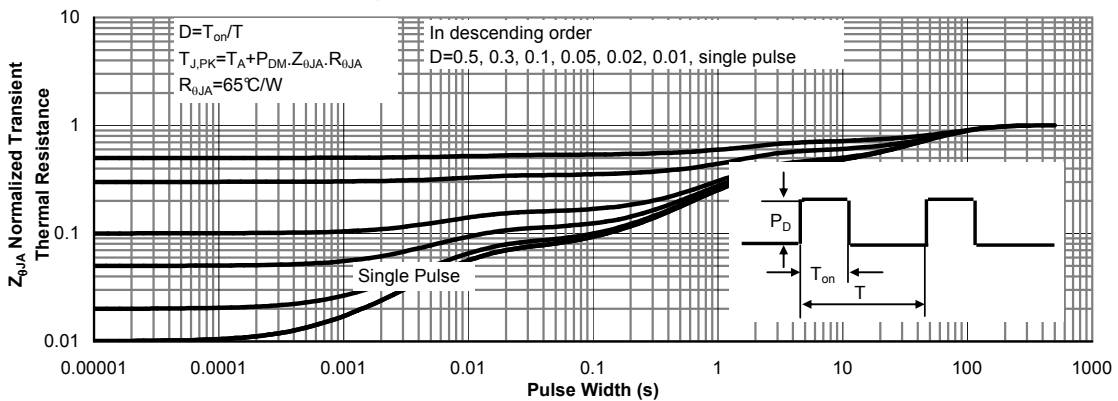


Figure 11: Normalized Maximum Transient Thermal Impedance

N-Channel MOSFET AO4406 (KO4406)

■ Typical Characteristics

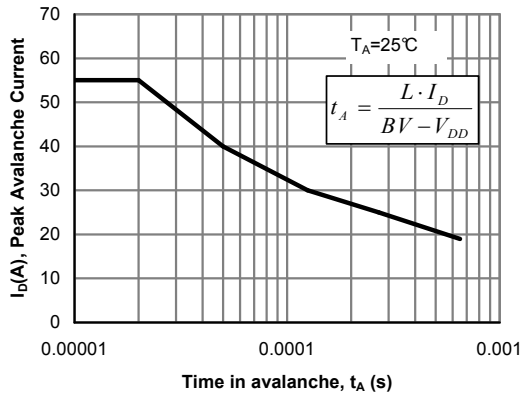


Figure 12: Avalanche capability

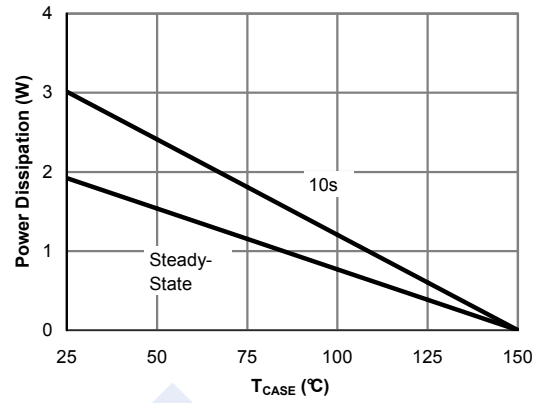


Figure 13: Power De-rating (Note A)