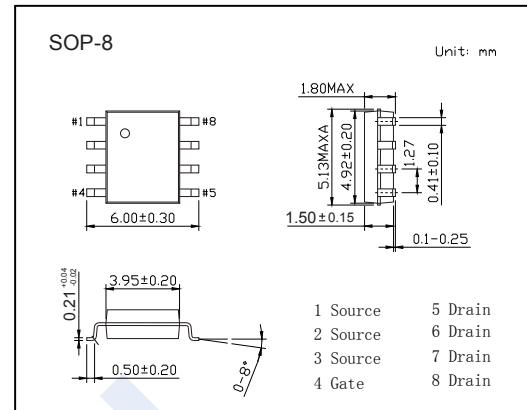
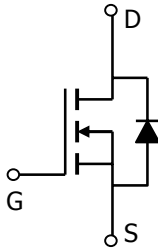


N-Channel MOSFET

AO4442 (KO4442)

■ Features

- $V_{DS} (V) = 75V$
- $I_D = 3.1 A (V_{GS} = 10V)$
- $R_{DS(ON)} < 130m\Omega (V_{GS} = 10V)$
- $R_{DS(ON)} < 165m\Omega (V_{GS} = 4.5V)$



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

Parameter	Symbol	Rating	Unit
Drain-Source Voltage	V_{DS}	75	V
Gate-Source Voltage	V_{GS}	± 25	
Continuous Drain Current	I_D	$T_A=25^\circ C$	3.1
		$T_A=70^\circ C$	2.5
Pulsed Drain Current	I_{DM}	20	A
Power Dissipation	P_D	$T_A=25^\circ C$	2.5
		$T_A=70^\circ C$	1.6
Thermal Resistance.Junction- to-Ambient	R_{thJA}	$t \leq 10s$	50
		Steady-State	80
Thermal Resistance.Junction- to-Lead	R_{thJL}	30	$^\circ C/W$
Junction Temperature	T_J	150	$^\circ C$
Storage Temperature Range	T_{stg}	-55 to 150	

N-Channel MOSFET

AO4442 (KO4442)

■ Electrical Characteristics Ta = 25°C

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit	
Drain-Source Breakdown Voltage	V _{DSS}	I _D =10mA, V _{GS} =0V	75			V	
Zero Gate Voltage Drain Current	I _{DSS}	V _{DS} =60V, V _{GS} =0V			1	μA	
		V _{DS} =60V, V _{GS} =0V, T _J =55°C			5		
Gate-Body Leakage Current	I _{GSS}	V _{DS} =0V, V _{GS} =±25V			±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 =3.1A			130	mΩ	
		V _{GS} =10V, I _D =3.1A T _J =125°C			220		
		V _{GS} =4.5V, I _D =2A			165		
On State Drain Current	I _{D(ON)}	V _{GS} =10V, V _{DS} =5V	20			A	
Forward Transconductance	g _{FS}	V _{DS} =5V, I _D =3.1A		8.2		S	
Input Capacitance	C _{iss}	V _{GS} =0V, V _{DS} =37.5V, f=1MHz		303	350	pF	
Output Capacitance	C _{oss}			37			
Reverse Transfer Capacitance	C _{rss}			17			
Gate Resistance	R _g		V _{GS} =0V, V _{DS} =0V, f=1MHz		2.2		3
Total Gate Charge (10V)	Q _g	V _{GS} =10V, V _{DS} =37.5V, I _D =3.1A		5.2	6.5	nC	
Total Gate Charge (4.5V)				2.46	3.5		
Gate Source Charge			Q _{gs}		1		
Gate Drain Charge			Q _{gd}		1.34		
Turn-On DelayTime			t _{d(on)}	V _{GS} =10V, V _{DS} =37.5V, R _L =12Ω, R _{GEN} =3Ω			4.5
Turn-On Rise Time	t _r		2.3				
Turn-Off DelayTime	t _{d(off)}		15.6				
Turn-Off Fall Time	t _f		1.9				
Body Diode Reverse Recovery Time	t _{rr}	I _F = 3.1A, di/dt= 100A/μs		22	30	nC	
Body Diode Reverse Recovery Charge	Q _{rr}			22			
Maximum Body-Diode Continuous Current	I _S				10	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	4442
	KC****

N-Channel MOSFET

AO4442 (KO4442)

■ Typical Characteristics

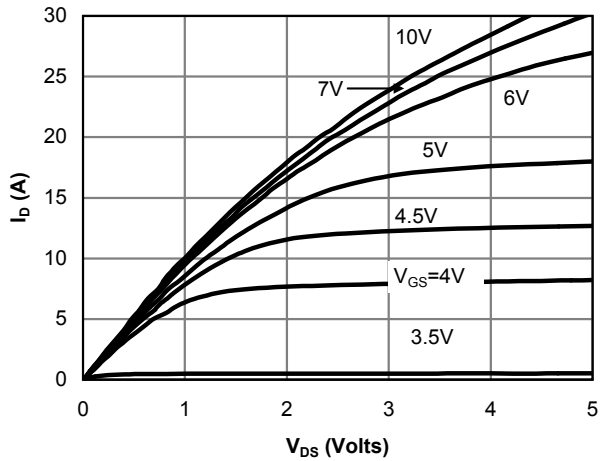


Fig 1: On-Region Characteristics

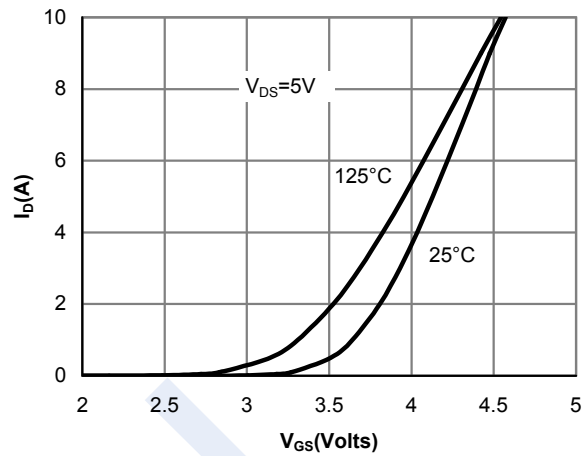


Figure 2: Transfer Characteristics

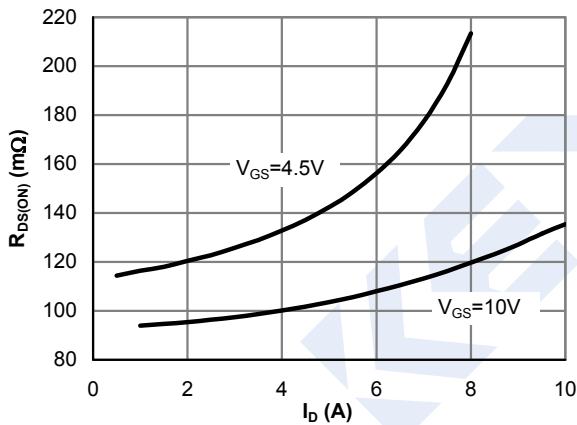


Figure 3: On-Resistance vs. Drain Current and Gate Voltage

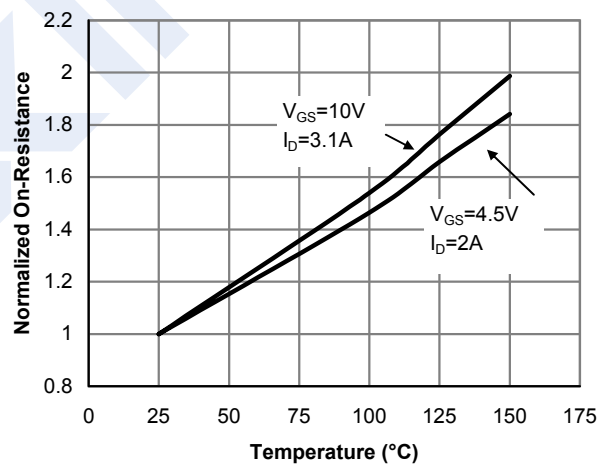


Figure 4: On-Resistance vs. Junction Temperature

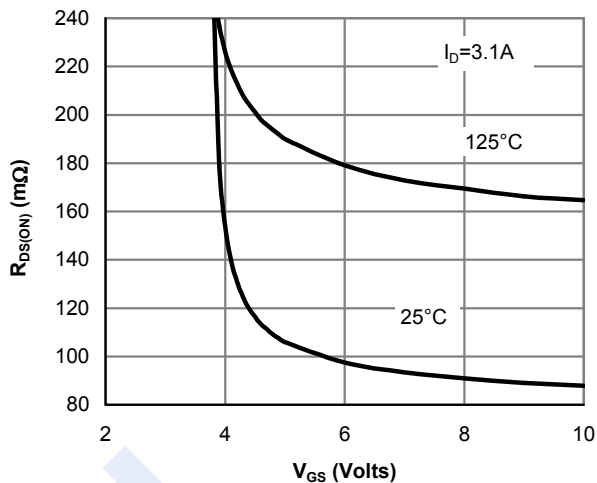


Figure 5: On-Resistance vs. Gate-Source Voltage

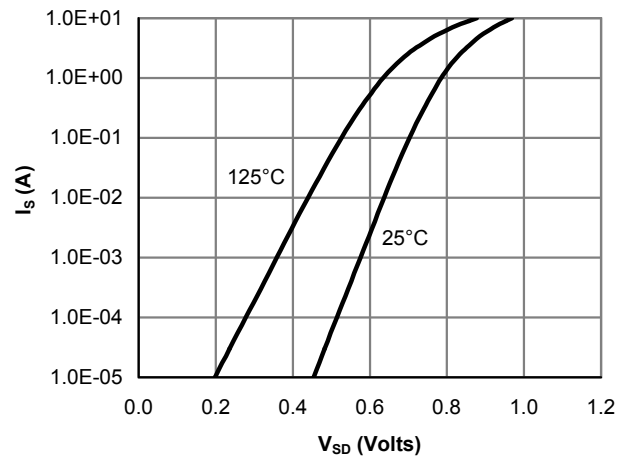


Figure 6: Body-Diode Characteristics

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■ Typical Characteristics

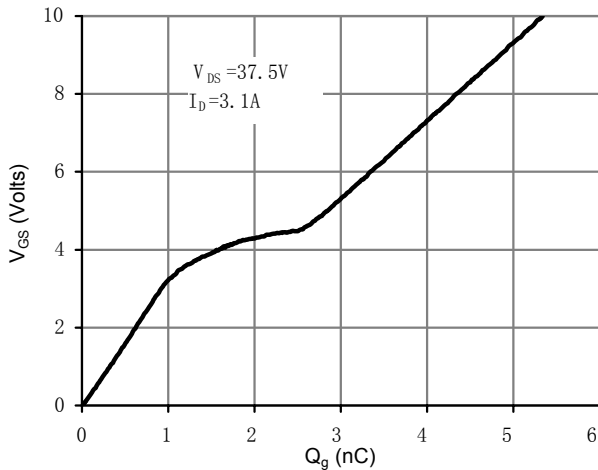


Figure 7: Gate-Charge Characteristics

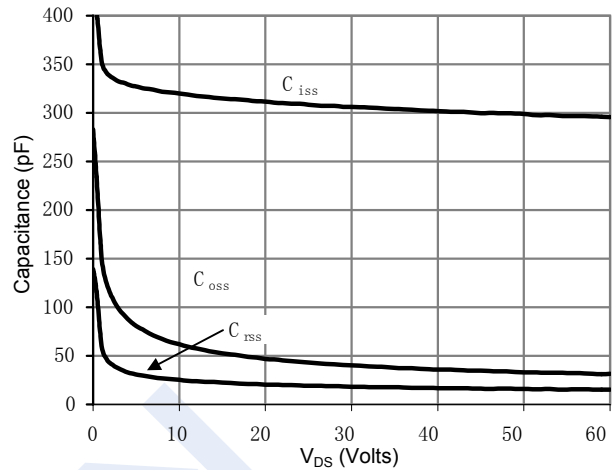


Figure 8: Capacitance Characteristics

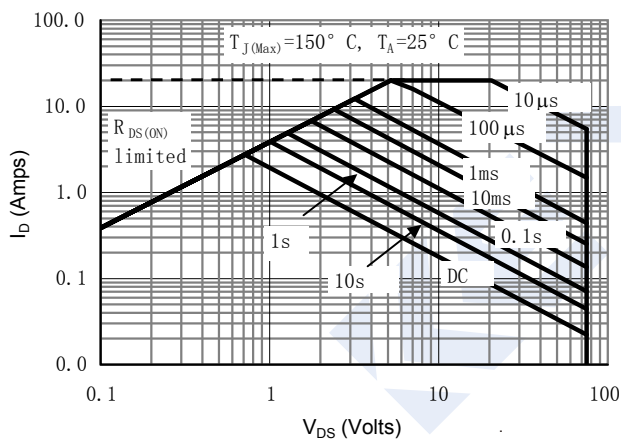


Figure 9: Maximum Forward Biased Safe Operating Area (Note E)

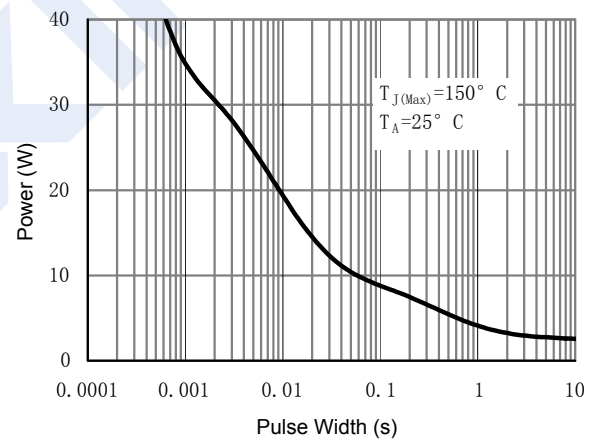


Figure 10: Single Pulse Power Rating Junction-to-Case (Note E)

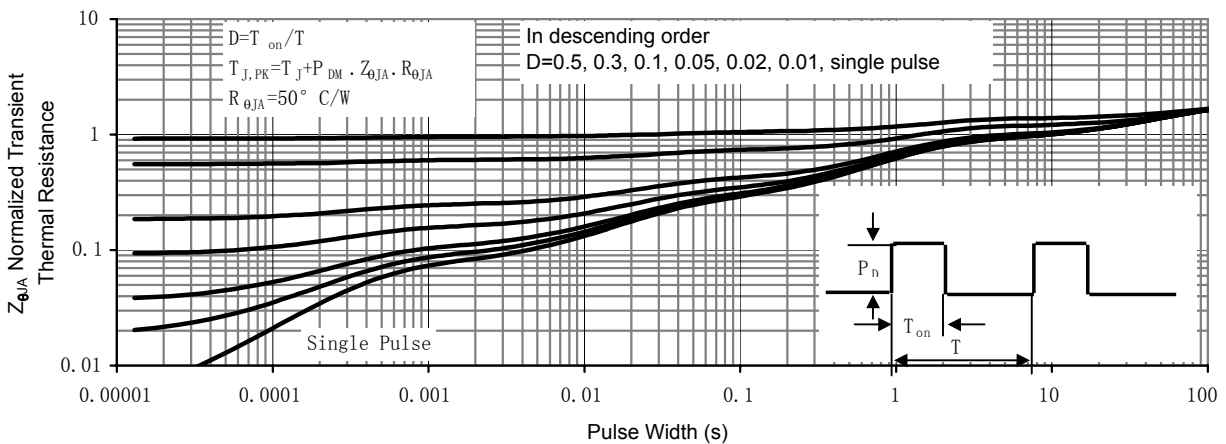


Figure 11: Normalized Maximum Transient Thermal Impedance (Note F)