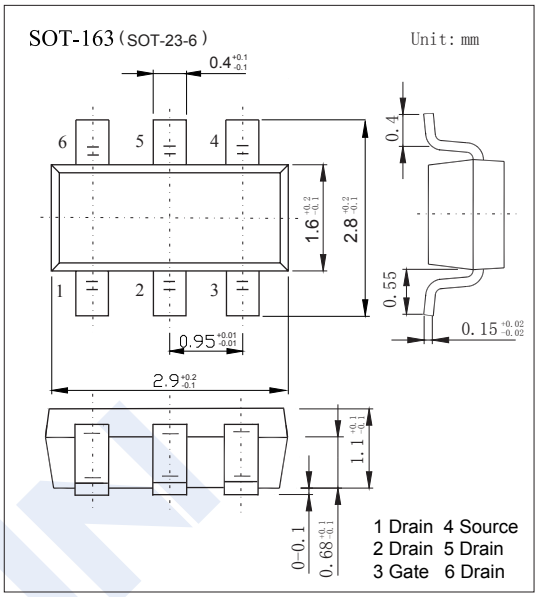
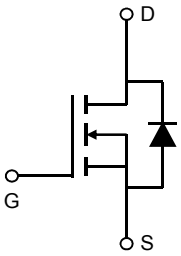
N-Channel MOSFET

AO6422 (KO6422)



■ Features

- $V_{DS\ (V)}$ = 20V
- I_D =5 A (V_{GS} = 4.5V)
- $R_{DS(ON)}$ < 44mΩ (V_{GS} = 4.5V)
- $R_{DS(ON)}$ < 55mΩ (V_{GS} = 2.5V)
- $R_{DS(ON)}$ < 72mΩ (V_{GS} = 1.8V)



■ Absolute Maximum Ratings Ta = 25℃

Parameter		Symbol	10 Sec	Steady State	Unit
Drain-Source Voltage		V_{DS}	20		V
Gate-Source Voltage		V_{GS}	±8		
Continuous Drain Current	TA=25℃	I_D	5	3.9	A
	TA=70℃		4.2	3	
Pulsed Drain Current		I_{DM}	30		
Power Dissipation	TA=25℃	P_D	2	1.1	W
	TA=70℃		1.3	0.7	
Thermal Resistance.Junction- to-Ambient		R_{thJA}	62.5	110	℃/W
Thermal Resistance.Junction- to-Lead		R_{thJL}	-	68	
Junction Temperature		T_J	150		℃
Storage Temperature Range		T_{stg}	-55 to 150		

N-Channel MOSFET

AO6422 (KO6422)

■ Electrical Characteristics Ta = 25℃

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Drain-Source Breakdown Voltage	V_{DSS}	I_D=250μA, V_{GS}=0V	20			V
Zero Gate Voltage Drain Current	I_{DSS}	V_{DS}=20V, V_{GS}=0V			1	uA
		V_{DS}=20V, V_{GS}=0V, T_J=55℃			5	
Gate-Body Leakage Current	I_{GSS}	V_{DS}=0V, V_{GS}=±8V			±100	nA
Gate Threshold Voltage	$V_{GS(th)}$	V_{DS}=V_{GS} , I_D=250 uA	0.4		1	V
Static Drain-Source On-Resistance	$R_{DS(ON)}$	V_{GS}=4.5V, I_D=5A			44	mΩ
		V_{GS}=4.5V, I_D=5A T_J=125℃			60	
		V_{GS}=2.5V, I_D=4.5A			55	
		V_{GS}=1.8V, I_D=3.5A			72	
On State Drain Current	$I_{D(ON)}$	V_{GS}=4.5V, V_{DS}=5V	30			A
Forward Transconductance	g_{FS}	V_{DS}=5V, I_D=5A		14		S
Input Capacitance	C_{iss}	V_{GS}=0V, V_{DS}=10V, f=1MHz		450	560	pF
Output Capacitance	C_{oss}			74		
Reverse Transfer Capacitance	C_{rss}			52		
Gate Resistance	R_g	V_{GS}=0V, V_{DS}=0V, f=1MHz		4.9	7.5	Ω
Total Gate Charge	Q_g	V_{GS}=4.5V, V_{DS}=10V, I_D=5A		6.2	8.2	nC
Gate Source Charge	Q_{gs}			0.4		
Gate Drain Charge	Q_{gd}			1.3		
Turn-On DelayTime	$t_{d(on)}$	V_{GS}=4.5V, V_{DS}=10V, R_L=2Ω,R_G=3Ω		4.5		ns
Turn-On Rise Time	t_r			6		
Turn-Off DelayTime	$t_{d(off)}$			33		
Turn-Off Fall Time	t_f			7.1		
Body Diode Reverse Recovery Time	t_{rr}	I_F= 5A, dI/dt= 100A/us		13	17	
Body Diode Reverse Recovery Charge	Q_{rr}			3.3		nC
Maximum Body-Diode Continuous Current	I_S				2	A
Diode Forward Voltage	V_{SD}	I_S=1A,V_{GS}=0V			1	V

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

■ Marking

Marking	DR**

N-Channel MOSFET

AO6422 (KO6422)

■ Typical Characterisitics

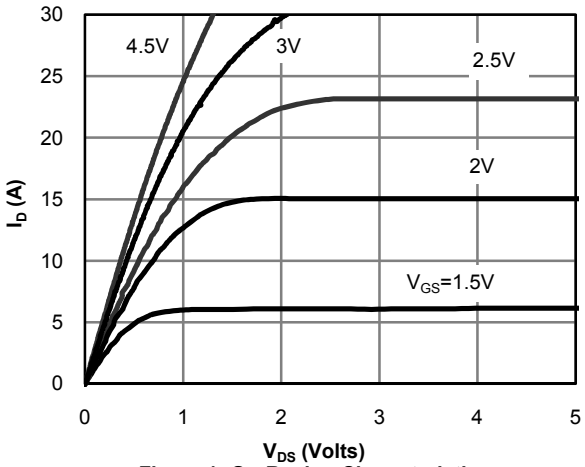


Figure 1: On-Region Characteristics

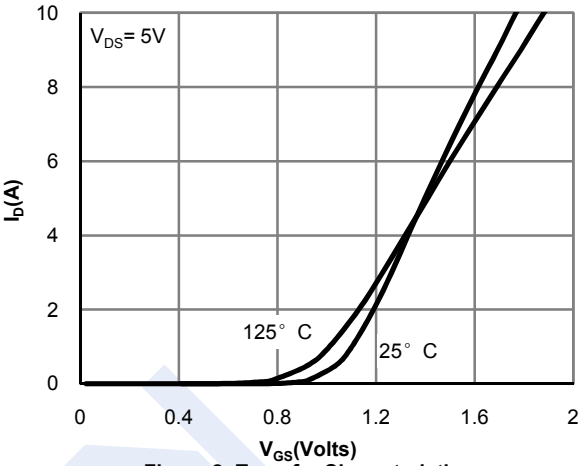


Figure 2: Transfer Characteristics

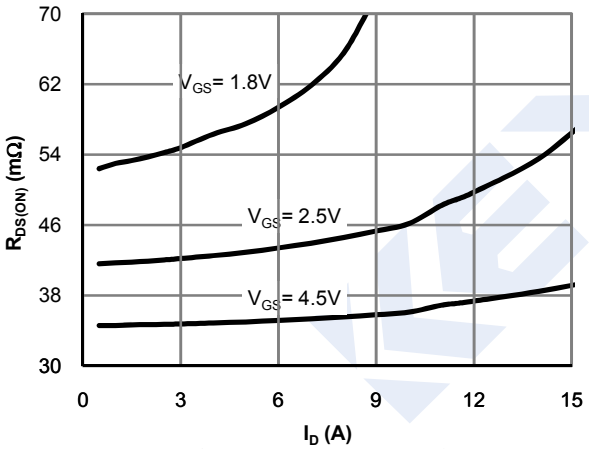


Figure 3: On-Resistance vs. Drain Current and Gate Voltage

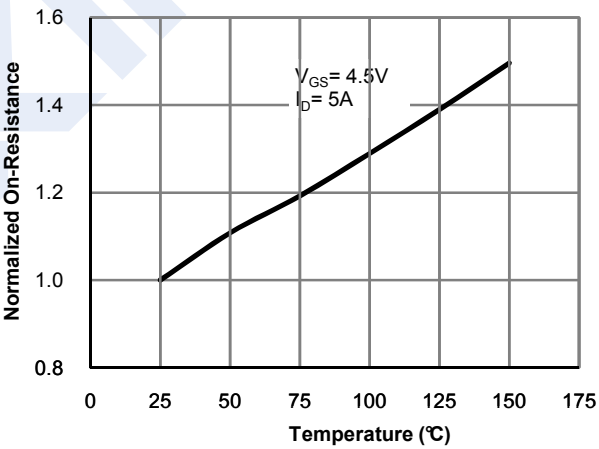


Figure 4: On-Resistance vs. Junction Temperature

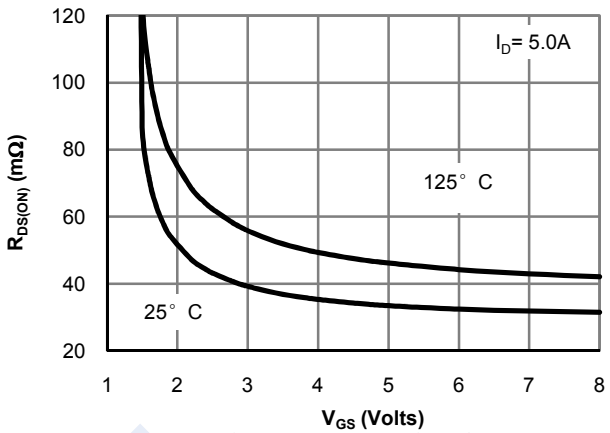


Figure 5: On-Resistance vs. Gate-Source Voltage

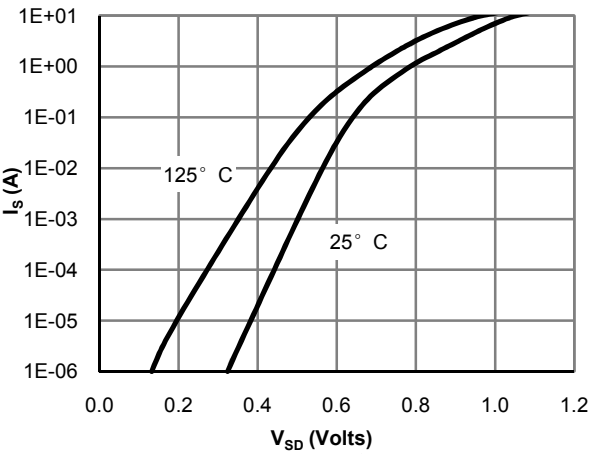


Figure 6: Body-Diode Characteristics

N-Channel MOSFET

AO6422 (KO6422)

■ Typical Characterisitics

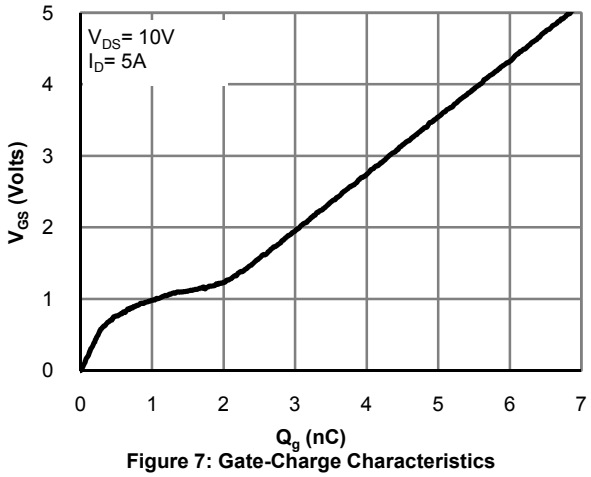


Figure 7: Gate-Charge Characteristics

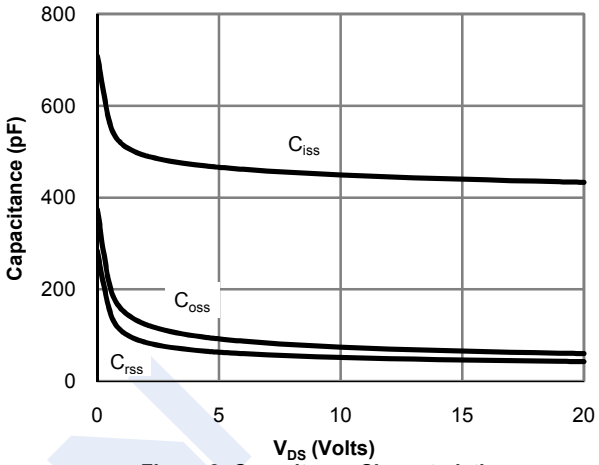


Figure 8: Capacitance Characteristics

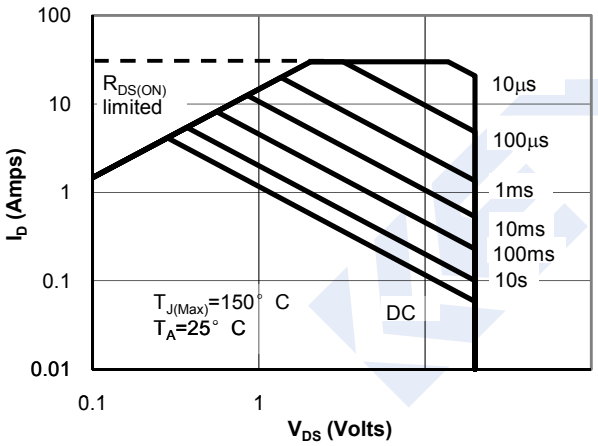


Figure 9: Maximum Forward Biased Safe Operating Area (Note E)

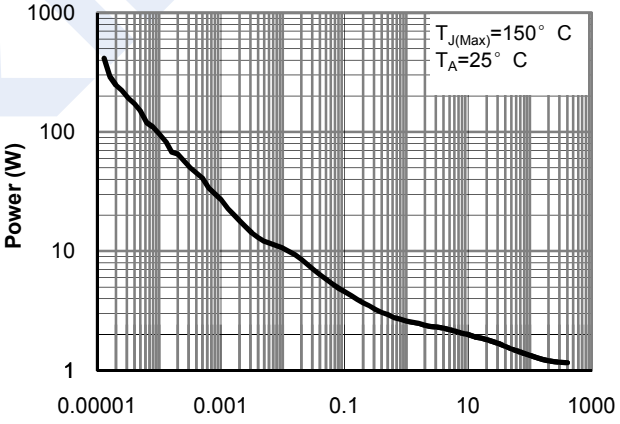


Figure 10: Single Pulse Power Rating Junction-to-Ambient (Note E)

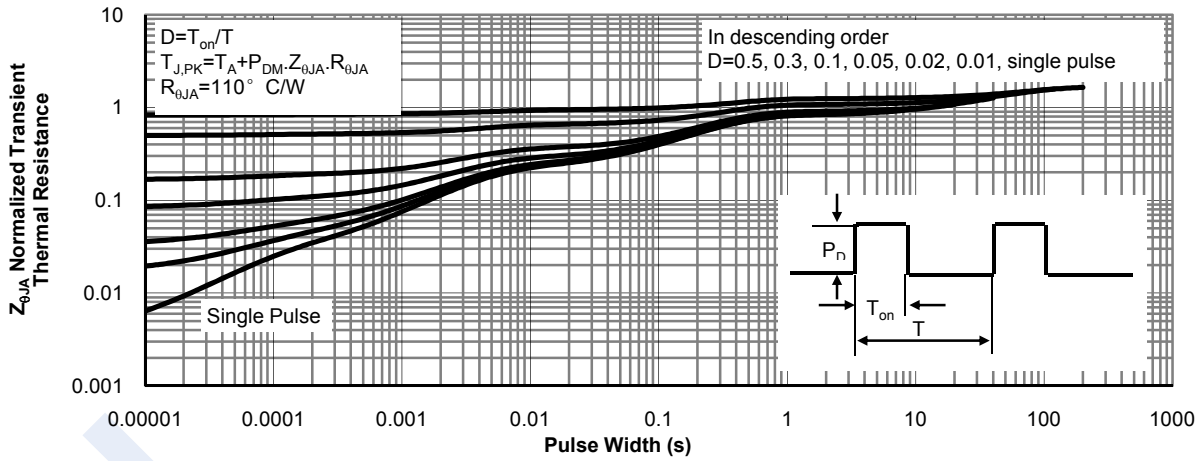


Figure 11: Normalized Maximum Transient Thermal Impedance(Note E)