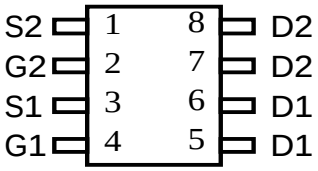
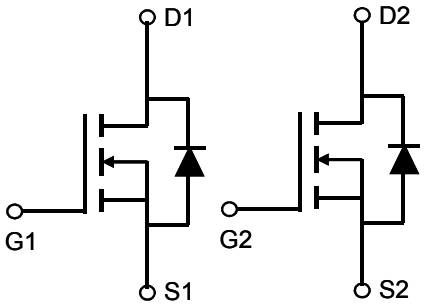
Dual N-Channel MOSFET AO4822

■ Features

- $V_{DS\ (V)}$ = 30V
- I_D = 8A (V_{GS} = 10V)
- $R_{DS(ON)}$ < 19mΩ (V_{GS} = 10V)
- $R_{DS(ON)}$ < 28mΩ (V_{GS} = 4.5V)



SOP-8



■ Absolute Maximum Ratings Ta = 25℃

Parameter		Symbol	Rating	Unit
Drain-Source Voltage		V_{DS}	30	V
Gate-Source Voltage		V_{GS}	±20	
Continuous Drain Current	T_A=25℃	I_D	8	A
	T_A=70℃		6.7	
Pulsed Drain Current		I_{DM}	64	
Power Dissipation	T_A=25℃	P_D	2	W
	T_A=70℃		1.44	
Thermal Resistance.Junction- to-Ambient	t ≤ 10s	R_{thJA}	62.5	℃/W
	Steady-State		110	
Thermal Resistance.Junction- to-Lead		R_{thJL}	50	
Junction Temperature		T_J	150	℃
Storage Temperature Range		T_{stg}	-55 to 150	

■ Electrical Characteristics Ta = 25℃

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Drain-Source Breakdown Voltage	V_{DSS}	I_D=250μA, V_{GS}=0V	30			V
Zero Gate Voltage Drain Current	I_{DSS}	V_{DS}=30V, V_{GS}=0V			1	uA
		V_{DS}=30V, V_{GS}=0V, T_J=55℃			5	
Gate-Body Leakage Current	I_{GSS}	V_{DS}=0V, V_{GS}=±20V			±100	nA
Gate Threshold Voltage	$V_{GS(th)}$	V_{DS}=V_{GS} , I_D=250uA	1.5		2.6	V
Static Drain-Source On-Resistance	$R_{DS(ON)}$	V_{GS}=10V, I_D=8A			19	mΩ
		V_{GS}=10V, I_D=8A T_J=125℃			28	
		V_{GS}=4.5V, I_D=5A			28	
On State Drain Current	$I_{D(ON)}$	V_{GS}=4.5V, V_{DS}=5V	64			A
Forward Transconductance	g_{FS}	V_{DS}=5V, I_D=8A		20		S
Input Capacitance	C_{iss}	V_{GS}=0V, V_{DS}=15V, f=1MHz		373	448	pF
Output Capacitance	C_{oss}			67		
Reverse Transfer Capacitance	C_{rss}			41		
Gate Resistance	R_g	V_{GS}=0V, V_{DS}=0V, f=1MHz		1.8	2.8	Ω
Total Gate Charge (10V)	Q_g	V_{GS}=10V, V_{DS}=15V, I_D=7.7A		7.2	11	nC
Total Gate Charge (4.5V)				3.5		
Gate Source Charge	Q_{gs}			1.3		
Gate Drain Charge	Q_{gd}			1.7		
Turn-On DelayTime	$t_{d(on)}$	V_{GS}=10V, V_{DS}=15V, R_L=1.95Ω, R_{GEN}=3Ω		4.5		ns
Turn-On Rise Time	t_r			2.7		
Turn-Off DelayTime	$t_{d(off)}$			14.9		
Turn-Off Fall Time	t_f			2.9		
Body Diode Reverse Recovery Time	t_{rr}	I_F= 7.7A, dI/dt= 100A/us		10.5	12.6	
Body Diode Reverse Recovery Charge	Q_{rr}			4.5		nC
Maximum Body-Diode Continuous Current	I_S				2.4	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 <300us pulses, duty cycle 0.5% max.

■ Typical Characterisitics

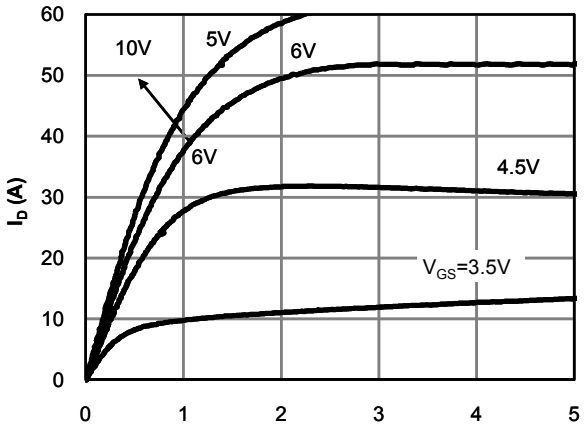


Fig 1: On-Region Characteristics

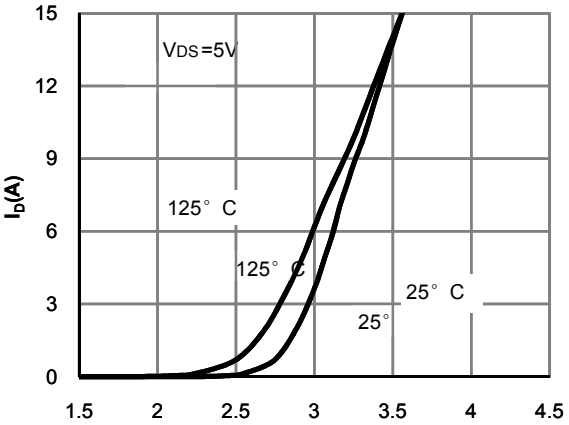


Figure 2: Transfer Characteristics

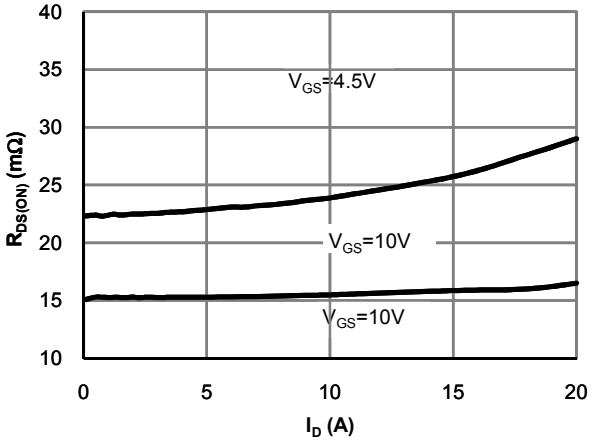


Figure 3: On-Resistance vs. Drain Current and Gate Voltage

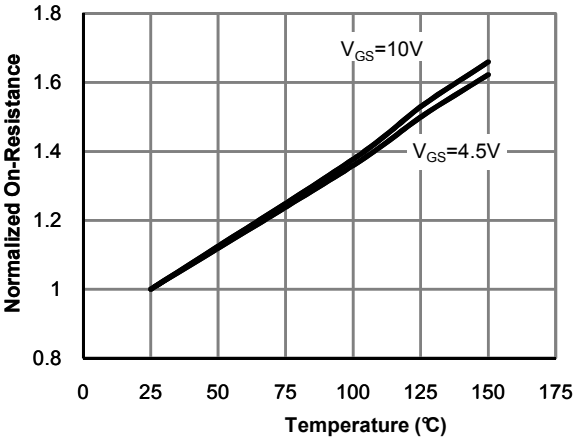


Figure 4: On-Resistance vs. Junction Temperature

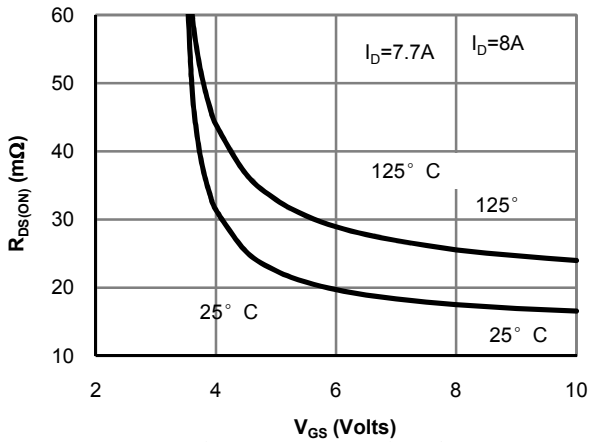


Figure 5: On-Resistance vs. Gate-Source Voltage

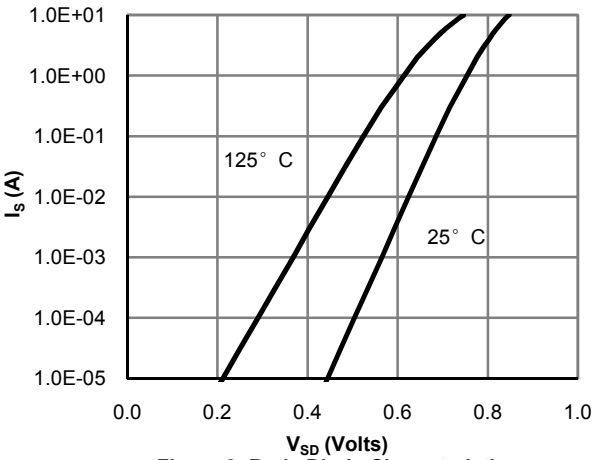


Figure 6: Body-Diode Characteristics

■ Typical Characterisitics

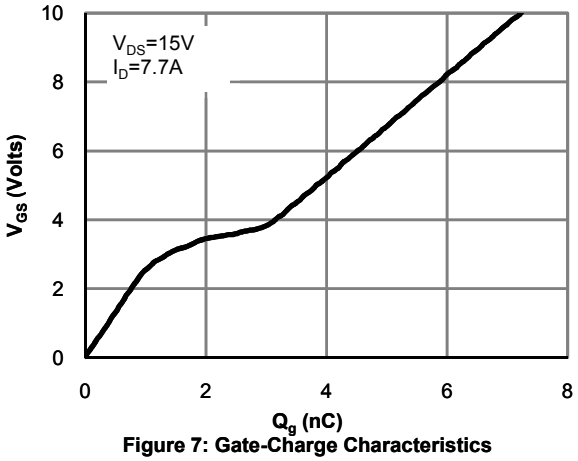


Figure 7: Gate-Charge Characteristics

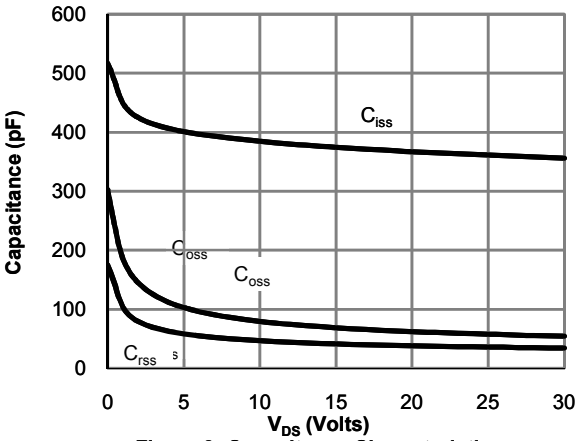


Figure 8: Capacitance Characteristics

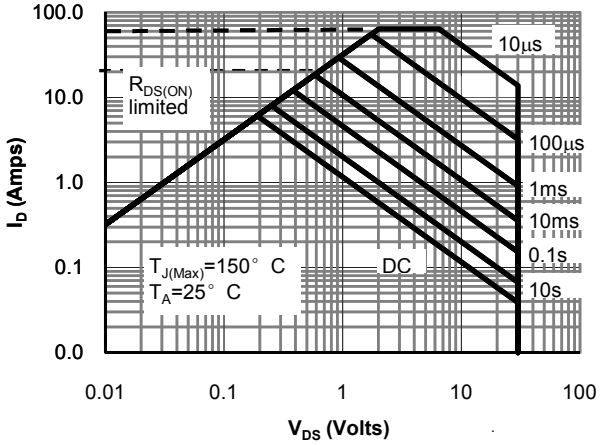


Figure 9: Maximum Forward Biased Safe Operating Area (Note E)

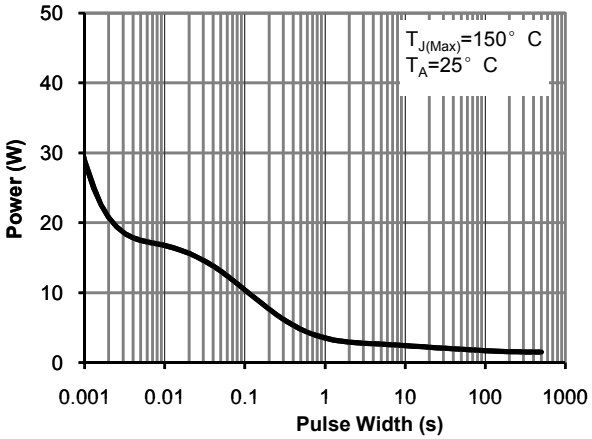


Figure 10: Single Pulse Power Rating Junction-to-Ambient (Note E)

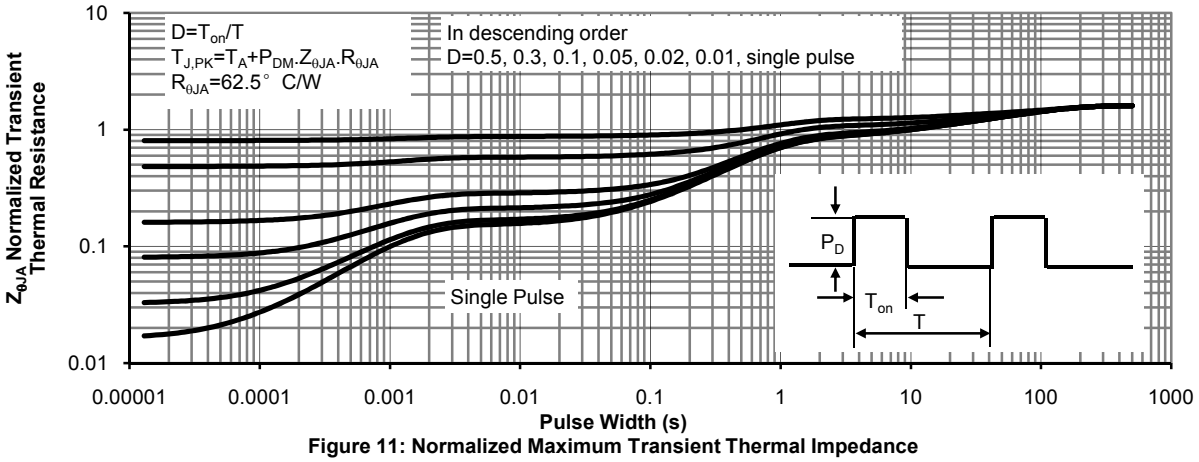


Figure 11: Normalized Maximum Transient Thermal Impedance