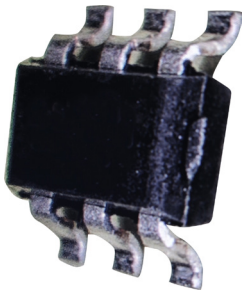
Dual Channel MOSFET

multicomp PRO

RoHS Compliant



Features

- $V_{DS\ (V)}$ =30V
- I_D =-3.4 A (V_{GS} =10V)
- $R_{DS(ON)}$ < 60mΩ (V_{GS} =10V)
- $R_{DS(ON)}$ < 70mΩ (V_{GS} =-4.5V)
- $R_{DS(ON)}$ < 90mΩ (V_{GS} =-2.5V)

Absolute Maximum Ratings (Ta=25°C)

Parameter		Symbol	Rating	Unit
Drain-Source Voltage		V_{DS}	30	V
Gate-Source Voltage		V_{GS}	+12	
Continuous Drain Current	T_A = 25°C	I_D	3.4	A
	T_A = 70°C		2.7	
Pulsed Drain Current		I_{DM}	20	
Power Dissipation	T_A = 25°C	P_D	1.15	W
	T_A = 70°C		0.73	
Thermal Resistance.Junction- to-Ambient	t ≤ 10s	R_{thJA}	110	°C/W
	Steady-State		150	
Thermal Resistance.Junction- to-Lead		R_{thJL}	80	
Junction Temperature		T_J	150	°C
Storage Temperature Range		T_{stg}	-55 to 150	

Electrical Characteristics Ta = 25°C

Characteristic	Symbol	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°C			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=-250μA	0.5		1.5	V
Static Drain-Source On-Resistance	$R_{DS(On)}$	V_{GS}=10V, I_D=3.4A			60	mΩ
		V_{GS}=10V, I_D=3.4A T_J=125°C			88	
		V_{GS}=4.5V, I_D=3A			70	
		V_{GS}=2.5V, I_D=2A			90	
On State Drain Current	$I_{D(ON)}$	V_{GS}=10V, I_D=5V	20			A
Forward Transconductance	g_{FS}	V_{DS}=-5V, I_D=3.4A		14		S

Characteristic	Symbol	Conditions	Min	Typ	Max	Unit
Input Capacitance	C_{iss}	V_{GS}=0V, V_{DS}=-15V, f=1MHz		235		pF
Output Capacitance	C_{oss}			35		
Reverse Transfer Capacitance	C_{RSS}			18		
Gate Resistance	R_g	V_{GS}=0V, V_{DS}=0V, f=1MHz		4.3		Ω
Total Gate Charge (10V)	Q_g	V_{GS}=10V, V_{DS}=15V, I_D=-4.4A		10		nC
Total Gate Charge (4.5V)				4.7		
Gate Source Charge	Q_{gs}			0.95		
Gate Drain Charge	Q_{gd}			1.6		
Turn-On DelayTime	$t_{d(on)}$	V_{GS}=-10V, V_{DS}=15V, R_L=4.4Ω ,R_G=3Ω		3.5		nS
Turn-On Rise Time	t_r			1.5		
Turn-Off DelayTime	$t_{d(off)}$			17.5		
Turn-Off Fall Time	t_f			2.5		
Body Diode Reverse Recovery Time	t_{rr}	I_F=3.4A, dI/dt=100A/μs		8.5		
Body Diode Reverse Recovery Charge	Q_{rr}			2.55		nC
Maximum Body-Diode Continuous Current	I_S				1.5	A
Diode Forward Voltage	V_{SD}	I_S=-2A,V_{GS}=0V			1	V

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

Typical Characterisitics

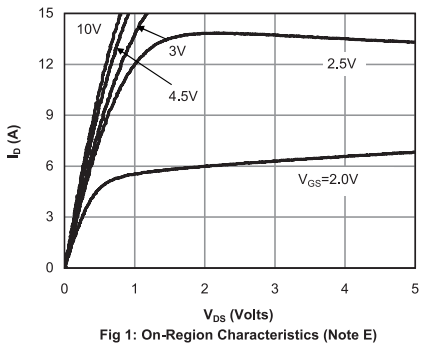


Fig 1: On-Region Characteristics (Note E)

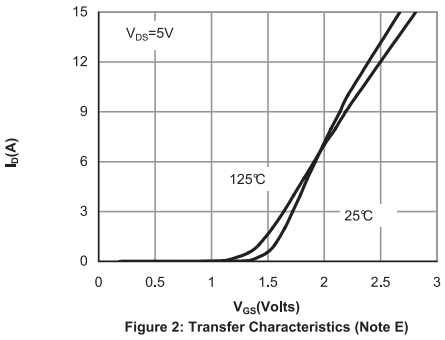


Figure 2: Transfer Characteristics (Note E)

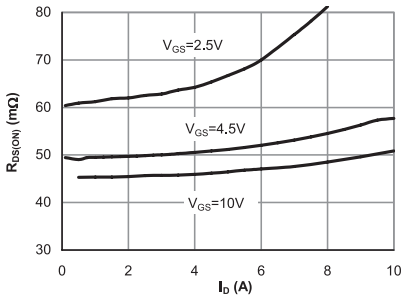


Figure 3: On-Resistance vs. Drain Current and Gate Voltage (Note E)

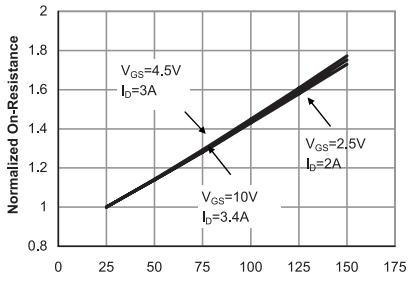


Figure 4: On-Resistance vs. Junction Temperature (Note E)

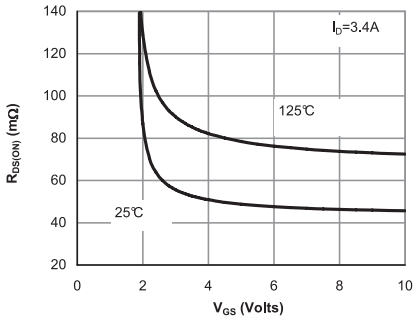


Figure 5: On-Resistance vs. Gate-Source Voltage (Note E)

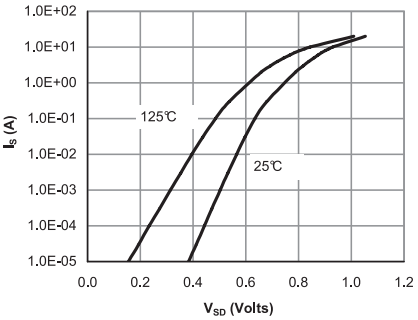


Figure 6: Body-Diode Characteristics (Note E)

Typical Characterisitics

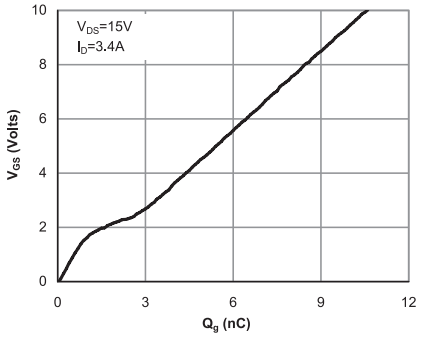


Figure 7: Gate-Charge Characteristics

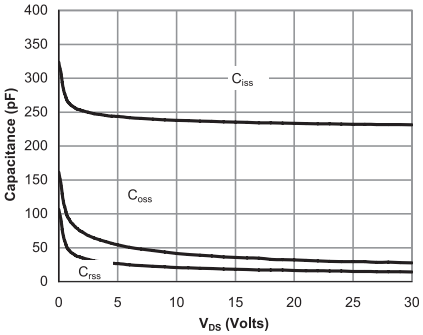


Figure 8: Capacitance Characteristics

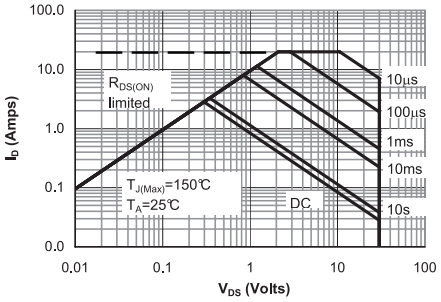


Figure 9: Maximum Forward Biased Safe Operating Area (Note F)

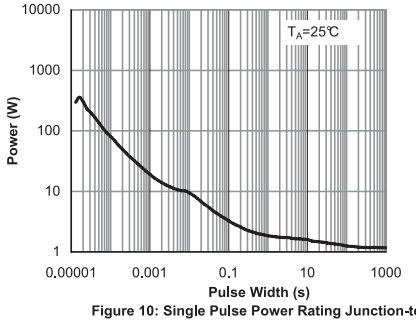


Figure 10: Single Pulse Power Rating Junction-to-Ambient (Note F)

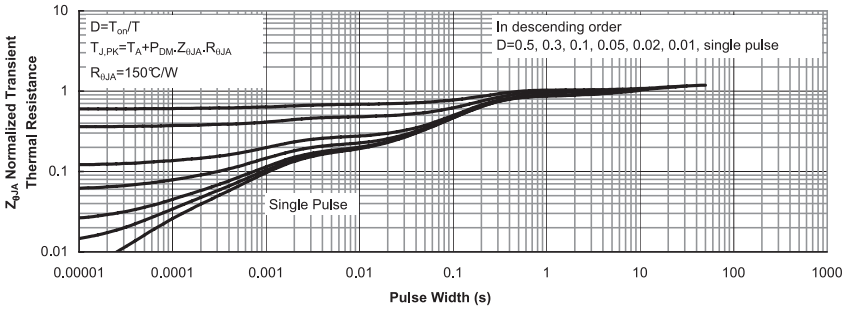
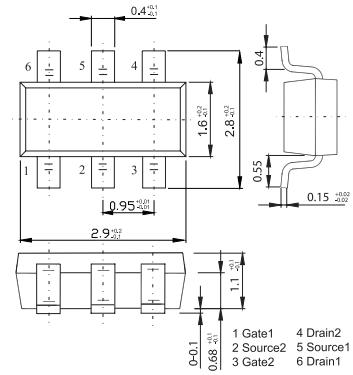
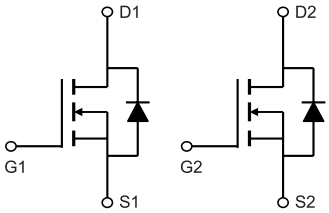


Figure 11: Normalized Maximum Transient Thermal Impedance (Note F)

Diagram





Dimensions : Millimetres

Part Number Table

Description	Part Number
Dual Channel MOSFET, 3.4A, 30V	AO6800