

30V_{DS}/±20V N-Channel Enhancement Mode MOSFET

Features

- $V_{DS}=30V, I_D=18A$
- $R_{DS(ON)}=5.5m\Omega$ (TYP.) $V_{GS}=10V$
- Reliable and Rugged
- Avalanche Rated
- Low On-Resistance

Applications

- Load Switch
- Power management in portable/desktop PCs
- DC/DC conversion

Ordering Information

Device	Package		Marking	Package Qty.
AO4410	SOP8	Pb-Free	**	3000pcs/Reel

Absolute Maximum Ratings (T_C=25°C, unless otherwise noted)

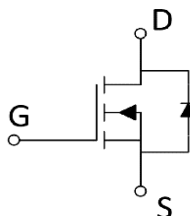
Parameter	Symbol	Value	Unit
Drain-Source Voltage	V_{DS}	30	V
Gate-Source Voltage	V_{GS}	±20	V
Continuous Drain Current	I_D	18	A
Pulsed Drain Current	I_{DM}	80	A
Single Pulsed Avalanche Energy	E_{AS}	135	mJ
Maximum Power Dissipation	P_D	2.1	W
Operating, Storage Temperature Range	T_J, T_{STG}	-55~150	°C
Thermal Resistance, Junction-to-Case	$R_{\theta JA}$	40	°C/W

Electrical Characteristics

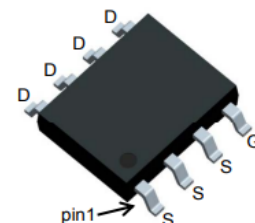
Parameter	Symbol	Test Conditions	Min.	Typ.	Max.	Unit
Drain-Source Breakdown Voltage	BV_{DSS}	$V_{GS}=0V, I_D=250\mu A$	30	-	-	V
Zero Gate Voltage Drain Current	I_{DSS}	$V_{DS}=30V, V_{GS}=0V$	-	-	1	μA
Gate -Source Leakage Current	I_{GSS}	$V_{GS}=\pm 20V, V_{DS}=0V$	-	-	±100	nA
Gate Threshold Voltage	$V_{GS(th)}$	$V_{DS}=V_{GS}, I_D=250\mu A$	1.0	-	2.5	V
Drain-Source On-stage Resistance	$R_{DS(ON)}$	$V_{GS}=10V, I_D=1A$	-	-	5.5	mΩ
		$V_{GS}=4.5V, I_D=2A$	-	-	7.3	

Reverse Diode Characteristics

Parameter	Symbol	Test Conditions	Min.	Typ.	Max.	Unit
Body Diode Forward Voltage	V_{SD}	$V_{GS}=0V, I_{SD}=1A$	-	-	1.0	V



SOP8



Dynamic Characteristics

Parameter	Symbol	Test Conditions	Min.	Typ.	Max.	Unit
Input capacitance	C_{iss}	$V_{DS}=15V$	-	-	7270	pF
Output capacitance	C_{oss}	$V_{GS}=0V$	-	-	960	
Reverse transfer capacitance	C_{rss}	$f=1MHz$	-	-	530	
Gate Resistance	R_g	$f=1MHz$	-	-	0.9	Ω
Total Gate Charge	Q_g	$V_{DS}=15V$	-	-	58	nC
Gate Source Charge	Q_{gs}	$V_{GS}=10V$	-	18	-	
Gate Drain Charge	Q_{gd}	$I_D=20A$	-	15	-	
Turn-on delay Time	$t_{d(on)}$	$V_{GS}=10V$	-	12	-	ns
Rise time	t_r	$V_{DS}=15V$	-	51.5	-	
Turn-off delay Time	$t_{d(off)}$	$R_L=3.5\Omega$	-	8.8	-	
Fall time	t_f	$R_G=6.8\Omega$	-	33.5	-	

Electrical Characteristics Diagrames

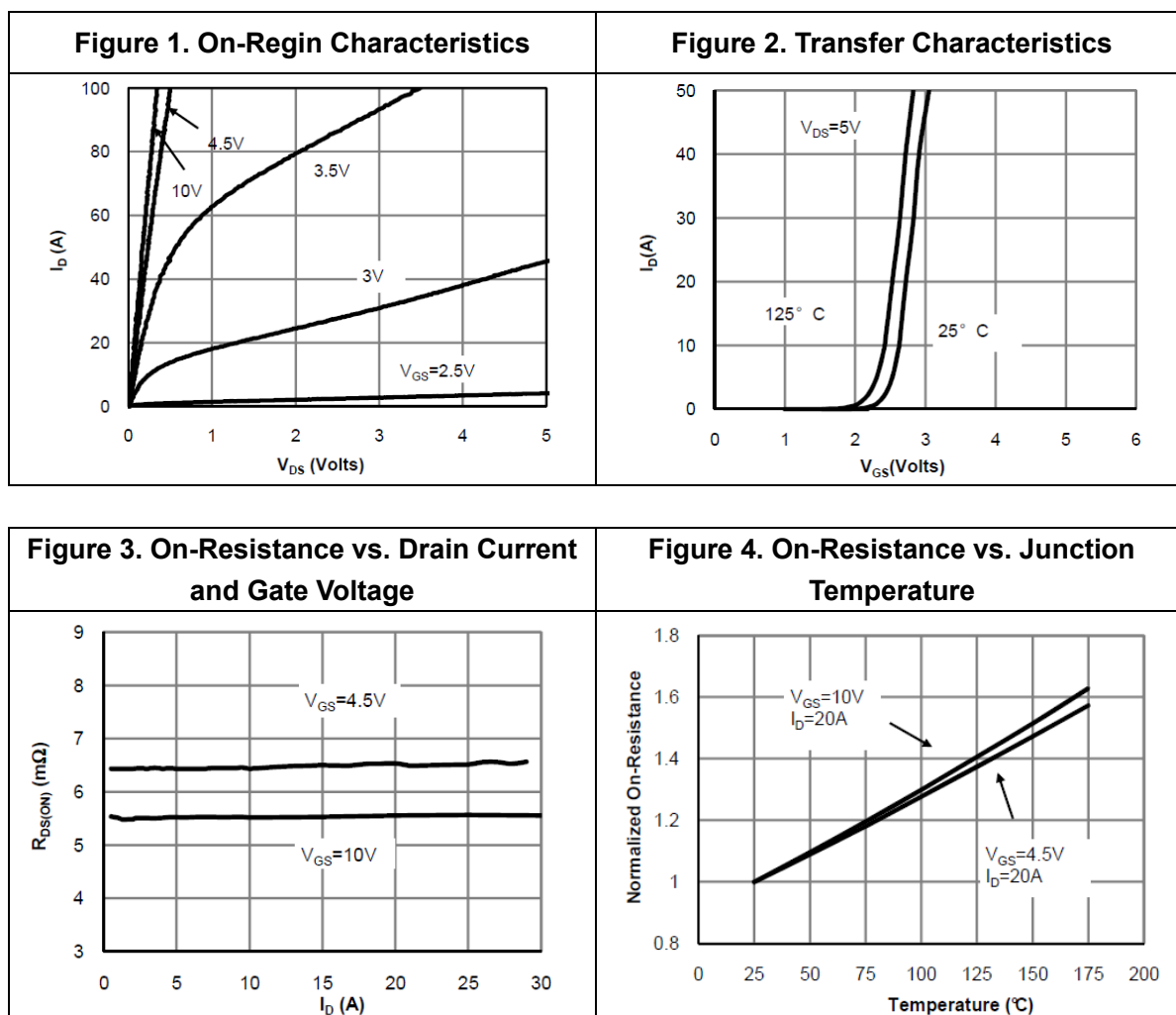
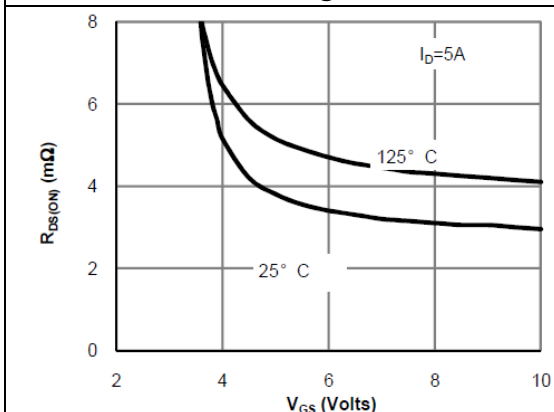
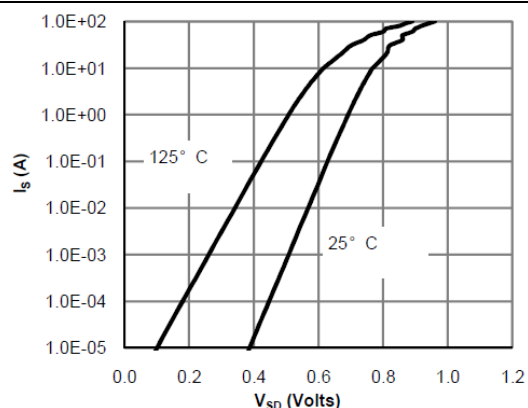
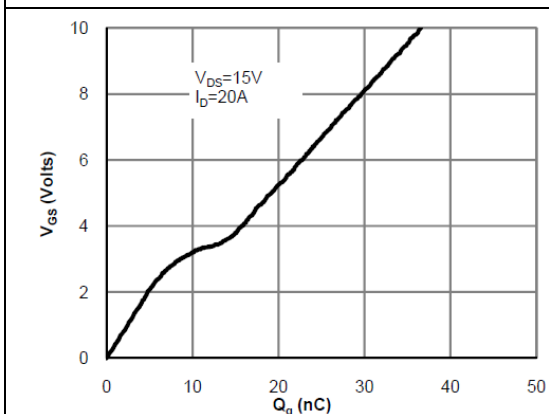
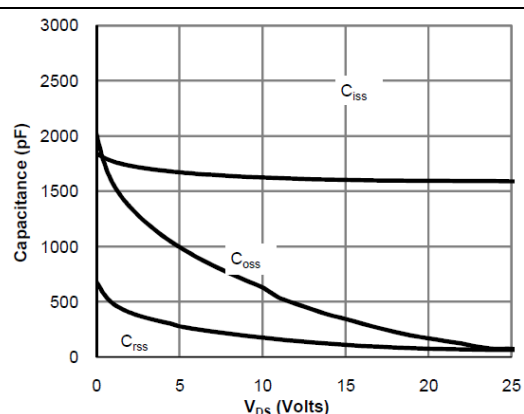
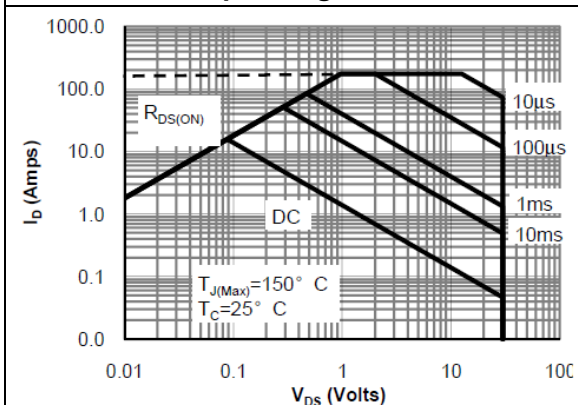
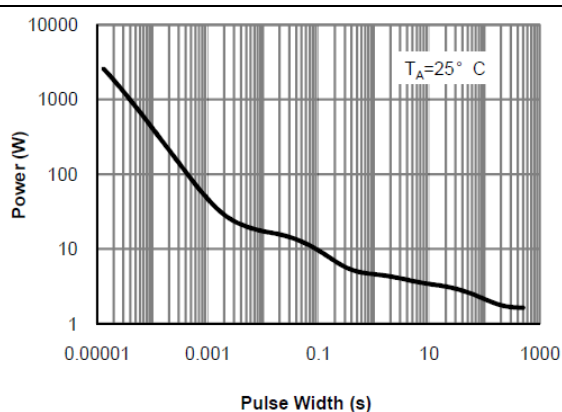


Figure 5. On-Resistance vs. Gate-Source Voltage

Figure 6. Body-Diode Characteristics

Figure 7. Gate-Charge Characteristics

Figure 8. Capacitance Characteristics

Figure 9. Maximum Forward Biased Safe Operating Area

Figure 10. Single Pulse Power Rating Junction-to-Ambient


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