

1.Description

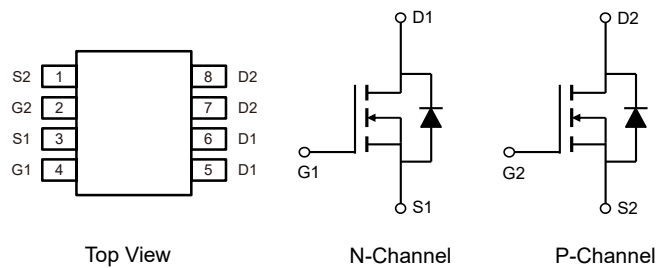
The AO4826 uses advanced trench technology to provide excellent $R_{DS(ON)}$, and ultra-low low gate charge. This device is suitable for use as a load switch or in PWM applications.

2.Features

- $V_{DS(V)}=60V$
- $R_{DS(ON)}<0.028\Omega(V_{GS}=10V)$
- $R_{DS(ON)}<0.03\Omega(V_{GS}=4.5V)$

2.Pinning information

Pin	Symbol	Description
1,3	S	SOURCE
2,4	G	GATE
5,6,7,8	D	DRAIN



3.Absolute Maximum Ratings $T_c=25^{\circ}C$

Parameter		Symbol	Rating	Units
Drain-Source Voltage		V_{DS}	60	V
Gate-Source Voltage		V_{GS}	± 20	
Continuous Drain Current	$T_c=25^{\circ}C$	I_D	7	A
	$T_c=125^{\circ}C$		4	
Continuous Source Current (Diode Conduction) ^a		I_S	3.6	
Pulsed Drain Current ^b		I_{DM}	28	
Single Pulse Avalanche Current	L=0.1mH	I_{AS}	18	
Single Pulse Avalanche Energy		E_{AS}	16.2	mJ
Maximum Power Dissipation ^b	$T_c=25^{\circ}C$	P_D	4	W
	$T_c=125^{\circ}C$		1.3	W
Storage Temperature		T_J, T_{STG}	-55 to 175	$^{\circ}C$



4.Thermal resist ancerating

Parameter		Symbol	Typ	Max	Units
Junction-to-Ambient	PCB Mount ^c	R _{thJA}		110	°C/W
Junction-to-Foot (Drain)		R _{thJF}		34	°C/W

Notes

- a. Package limited.
- b. Pulse test; pulse width ≤ 300 μs, duty cycle ≤ 2 %.
- c. When mounted on 1" square PCB (FR4 material).



5. Electrical Characteristic ($T_c=25^\circ\text{C}$ unless otherwise noted)

Parameter	Symbol	Conditions	Min	Typ	Max	Units
Static						
Drain-source breakdown voltage	V _{DS}	V _{GS} =0V, I _D =250μA	60			V
Gate-source threshold voltage	V _{GS(th)}	V _{DS} =V _{GS} , I _D =250μA	1	1.5	2.5	V
Gate-source leakage	I _{GSS}	V _{DS} =0V, V _{GS} =±20V			±100	nA
Zero gate voltage drain current	I _{DSS}	V _{GS} =0V, V _{DS} =60V			1	μA
		V _{GS} =0V,V _{DS} =60V,T _J =125°C			50	μA
		V _{GS} =0V,V _{DS} =60V,T _J =175°C			150	μA
On-State Drain Current ^a	I _{D(ON)}	V _{GS} =10V, V _{DS} ≥5V	20			A
Drain-Source On-State Resistance ^a	R _{DS(ON)}	V _{GS} =10V, I _D =4.5A		0.028		Ω
		V _{GS} =4.5V, I _D =4A		0.03		Ω
Forward transconductance ^f	g _{FS}	V _{DS} =15V, I _D =4.5A		15		S
Dynamic ^b						
Input Capacitance	C _{iss}	V _{DS} =25V, V _{GS} =0V, f=1MHz		600	750	pF
Output Capacitance	C _{oss}			110	140	pF
Reverse Transfer Capacitance	C _{rss}			50	62	pF
Total gate charge ^c	Q _g	V _{DS} =30V, V _{GS} =10V, I _D =5.3A		11.7	18	nC
Gate-source charge ^c	Q _{gs}			1.8	2.7	nC
Gate-drain charge ^c	Q _{gd}			2.8	4.2	nC
Gate resistance	R _g	f=1MHz	1.3		6	Ω
Turn-On Delay Time ^c	t _{D(on)}	V _{DS} =30V R _L =6.8Ω, I _D ≈4.4A V _{GEN} =10V, R _G =1Ω		7	11	ns
Rise Time ^c	t _r			3.3	5	ns
Turn-Off Delay Time ^c	t _{D(off)}			22.4	33.5	ns
Fall time ^c	t _f			2.1	3.2	ns
Source-Drain Diode Ratings and Characteristics ^b						
Pulsed Current ^a	I _{SM}	I _F =2A, V _{GS} =0V			28	A
Forward Voltage	V _{SD}	I _F =2A, V _{GS} =0V		0.75	1.1	V

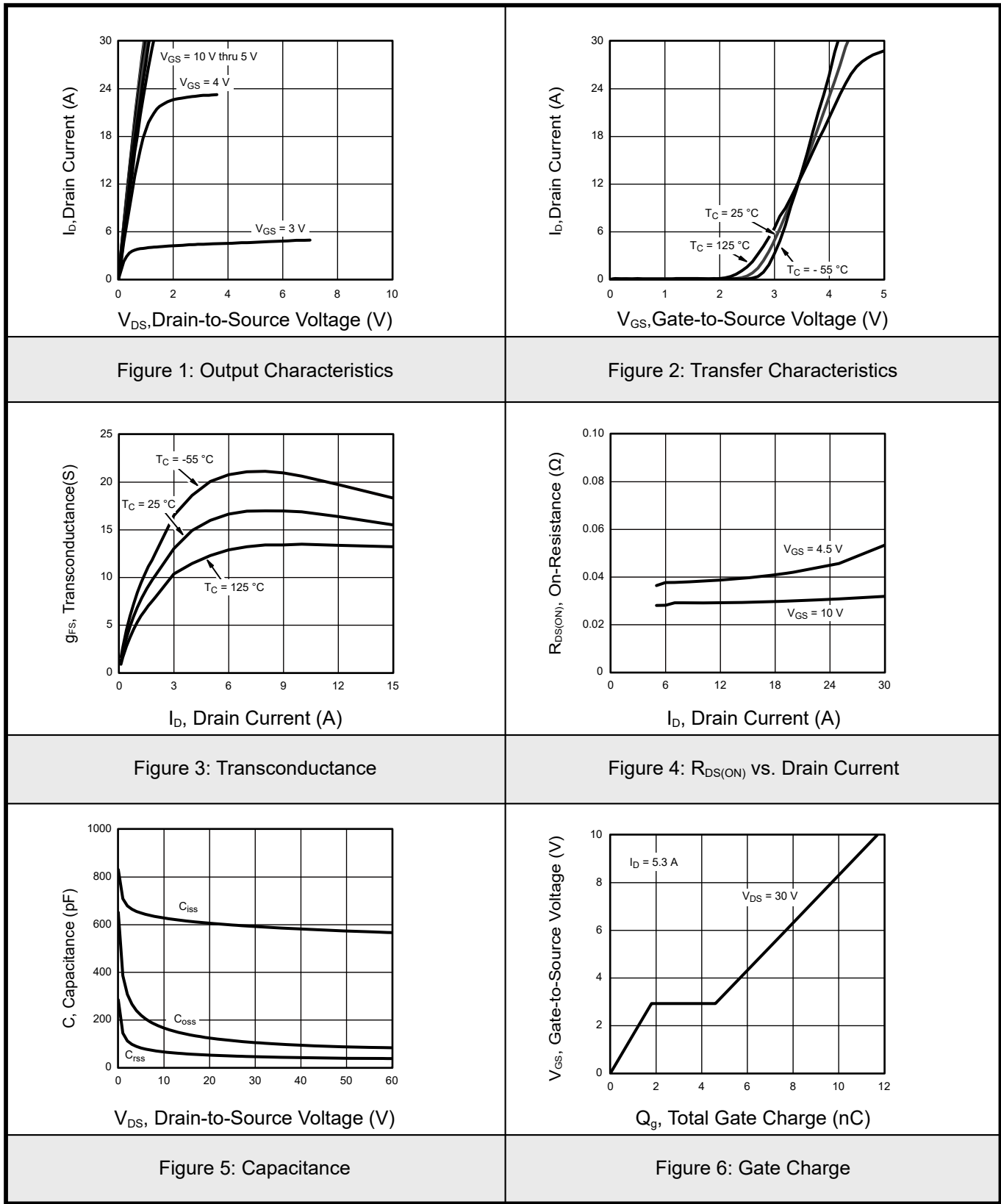
a. Pulse test; pulse width $\leq 300\mu s$, duty cycle $\leq 2\%$.

c. Independent of operating temperature.

b. Guaranteed by design, not subject to production testing.



6.1 Typical characteristic





6.2 Typical characteristic

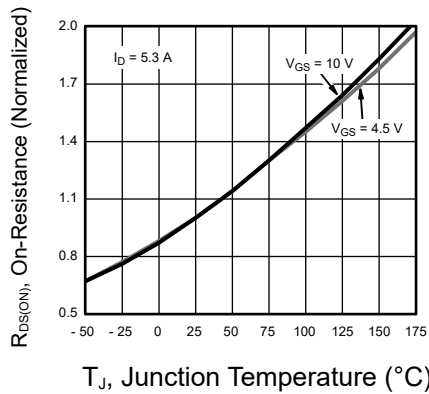


Figure 7: On-Resistance vs. Junction Temperature

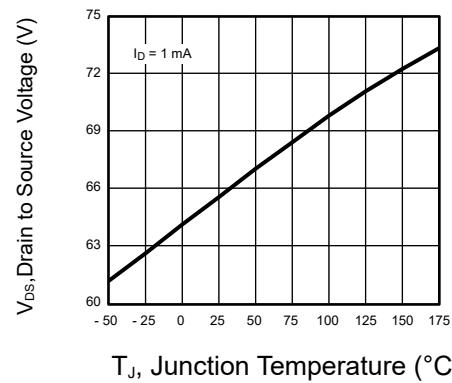


Figure 8: Drain Source Breakdown vs. Junction Temperature

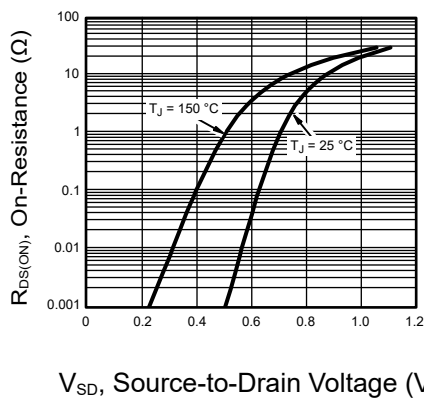


Figure 9: Source Drain Diode Forward Voltage

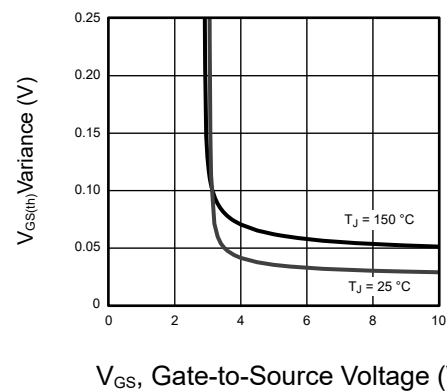


Figure 10: On-Resistance vs. Gate-to-Source Voltage

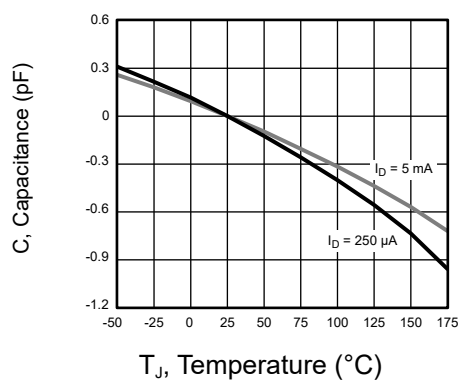
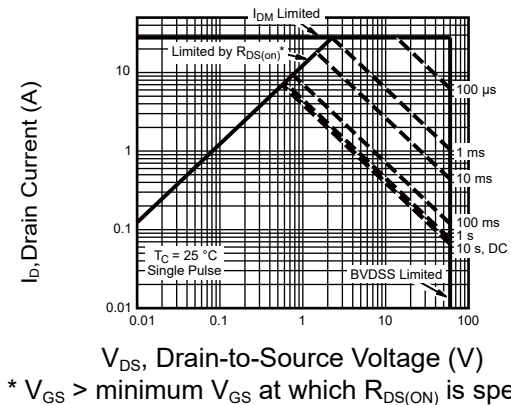


Figure 11: Threshold Voltage



* V_{GS} > minimum V_{GS} at which $R_{DS(on)}$ is specified

Figure 12: Safe Operating Area



6.3Typical characteristic

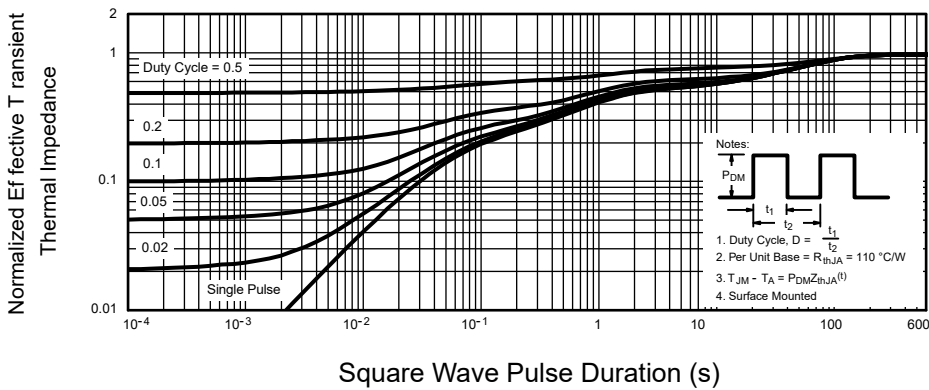


Figure 13: Normalized Thermal Transient Impedance, Junction-to-Ambient

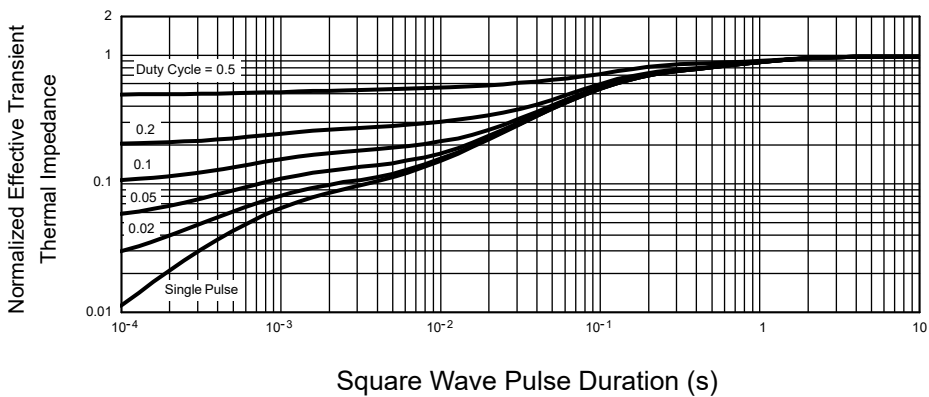
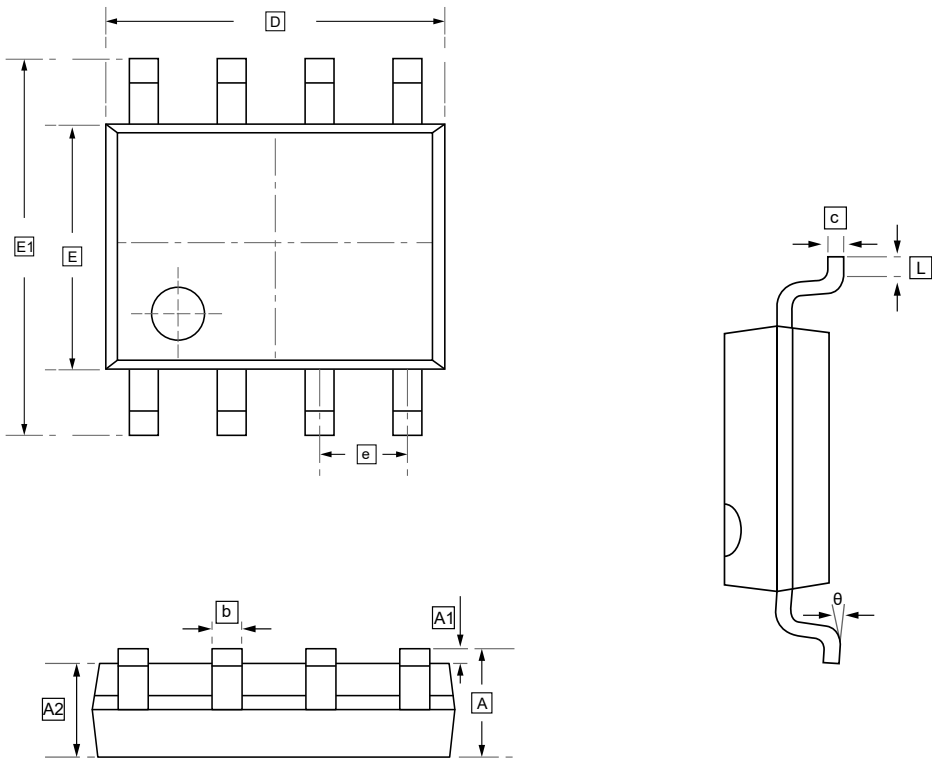


Figure 14: Normalized Thermal Transient Impedance, Junction-to-Foot



7.SOP-8 Package Outline Dimensions

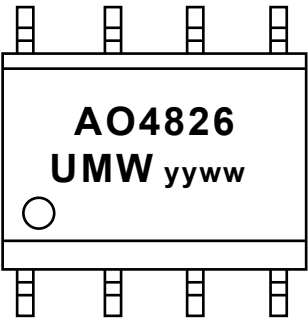


DIMENSIONS (mm are the original dimensions)

Symbol	A	A1	A2	b	c	D	E	E1	e	L	θ
Min	1.350	0.000	1.350	0.330	0.170	4.700	3.800	5.800	1.270	0.400	0°
Max	1.750	0.100	1.550	0.510	0.250	5.100	4.000	6.200	BSC	1.270	8°



8.Ordering information



yy: Year Code
ww: Week Code

Order Code	Package	Base QTY	Delivery Mode
UMW AO4826	SOP-8	3000	Tape and reel



9.Disclaimer

UMW reserves the right to make changes to all products, specifications. Customers should obtain the latest version of product documentation and verify the completeness and currency of the information before placing an order.

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