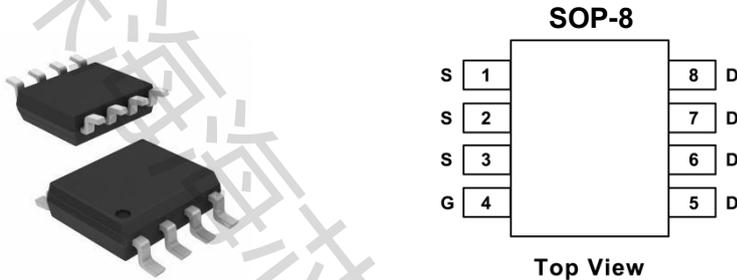


AO4826-HX

Dual N-Channel 60-V (D-S) 175 °C MOSFET

PRODUCT SUMMARY	
V_{DS} (V)	60
$R_{DS(on)}$ (Ω) at $V_{GS} = 10$ V	0.040
$R_{DS(on)}$ (Ω) at $V_{GS} = 4.5$ V	0.055
I_D (A) per leg	7
Configuration	Dual



FEATURES

- TrenchFET[®] Power MOSFET
- 100 % R_g and UIS tested

APPLICATIONS

- Load Switch
- Battery Switch

ABSOLUTE MAXIMUM RATINGS ($T_C = 25$ °C, unless otherwise noted)				
PARAMETER		SYMBOL	LIMIT	UNIT
Drain-Source Voltage		V_{DS}	60	V
Gate-Source Voltage		V_{GS}	± 20	
Continuous Drain Current	$T_C = 25$ °C	I_D	7	A
	$T_C = 125$ °C		4	
Continuous Source Current (Diode Conduction) ^a		I_S	3.6	
Pulsed Drain Current ^b		I_{DM}	28	
Single Pulse Avalanche Current	L = 0.1 mH	I_{AS}	18	
Single Pulse Avalanche Energy		EAS	16.2	mJ
Maximum Power Dissipation ^b	$T_C = 25$ °C	Pd	4	W
	$T_C = 125$ °C		1.3	
Operating Junction and Storage Temperature Range		T_J, T_{stg}	-55 to +175	°C

Thermal Characteristics						
Parameter		Symbol	Typ	Max	Units	
Maximum Junction-to-Ambient ^A	$t \leq 10s$	$R_{\theta JA}$	50	62.5	°C/W	
Maximum Junction-to-Ambient ^A	Steady-State		73	110	°C/W	
Maximum Junction-to-Lead ^C	Steady-State	$R_{\theta JL}$	31	40	°C/W	
STATIC PARAMETERS						
Symbol	Parameter	Conditions	Min	Typ	Max	Units
BV_{DSS}	Drain-Source Breakdown Voltage	$I_D=250\mu A, V_{GS}=0V$	60			V
I_{DSS}	Zero Gate Voltage Drain Current	$V_{DS}=48V, V_{GS}=0V$ $T_J=55^\circ C$			1 5	A
I_{GSS}	Gate-Body leakage current	$V_{DS}=0V, V_{GS}=\pm 20V$			100	nA
$V_{GS(th)}$	Gate Threshold Voltage	$V_{DS}=V_{GS}, I_D=250 A$	1	2.1	3	V
$I_{D(ON)}$	On state drain current	$V_{GS}=10V, V_{DS}=5V$	40			A
$R_{DS(ON)}$	Static Drain-Source On-Resistance	$V_{GS}=10V, I_D=6.3A$		20	25	mΩ
		$T_J=125^\circ C$		34	42	
		$V_{GS}=4.5V, I_D=5.7A$		22	30	mΩ
g_{FS}	Forward Transconductance	$V_{DS}=5V, I_D=6.3A$		27		S
V_{SD}	Diode Forward Voltage	$I_S=1A, V_{GS}=0V$		0.74	1	V
I_S	Maximum Body-Diode Continuous Current				3	A
I_{SM}	Pulsed Body Diode Current ^B				40	A
DYNAMIC PARAMETERS						
C_{iss}	Input Capacitance	$V_{GS}=0V,$ $V_{DS}=30V, f=1MHz$		1920	2300	pF
C_{oss}	Output Capacitance		155			
C_{rss}	Reverse Transfer Capacitance		116			
R_g	Gate resistance	$V_{GS}=0V,$ $V_{DS}=0V, f=1MHz$		0.65	0.8	Ω
SWITCHING PARAMETERS						
$Q_g(10V)$	Total Gate Charge	$V_{GS}=10V,$ $V_{DS}=30V, I_D=6.3A$		47.6	58	nC
$Q_g(4.5V)$	Total Gate Charge		24.2	30		
Q_{gs}	Gate Source Charge		6			
Q_{gd}	Gate Drain Charge		14.4			
$t_{D(on)}$	Turn-On DelayTime	$V_{GS}=10V,$ $V_{DS}=30V,$ $R_L=4.7\Omega, R_{GEN}=3\Omega$		7.6		ns
t_r	Turn-On Rise Time		5			
$t_{D(off)}$	Turn-Off DelayTime		28.9			
t_f	Turn-Off Fall Time		5.5			
t_{rr}	Body Diode Reverse Recovery Time		$I_F=6.3A,$ $dI/dt=100A/\mu s$		33.2	
Q_{rr}	Body Diode Reverse Recovery Charge	$I_F=6.3A,$ $dI/dt=100A/\mu s$		43		nC

Notes:

- A. The value of $R_{\theta JA}$ is measured with the device mounted on 1in² FR-4 board with 2oz. Copper, in a still air environment with $T_A=25^\circ C$. The value in any given application depends on the user's specific board design. The current rating is based on the $t \leq 10s$ thermal resistance rating.
- B. Repetitive rating, pulse width limited by junction temperature.
- C. The $R_{\theta JA}$ is the sum of the thermal impedance from junction to lead $R_{\theta JL}$ and lead to ambient.
- D. The static characteristics in Figures 1 to 6 are obtained using <300 s pulses, duty cycle 0.5% max.
- E. These tests are performed with the device mounted on 1 in² FR-4 board with 2oz. Copper, in a still air environment with $T_A=25^\circ C$.

TYPICAL ELECTRICAL AND THERMAL CHARACTERISTICS

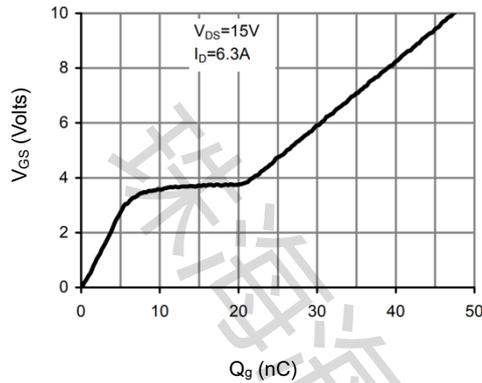


Fig 1. Gate-Charge Characteristics

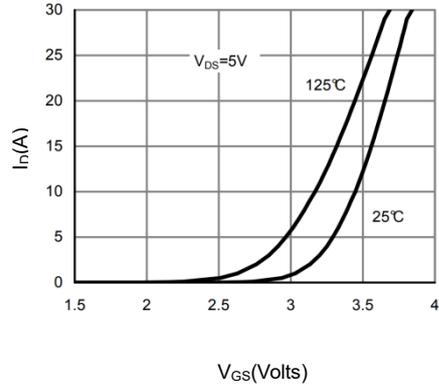


Fig 2. Transfer Characteristics

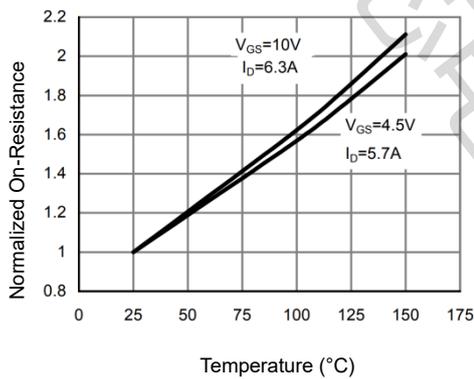


Fig 3. On-Resistance vs. Junction Temperature

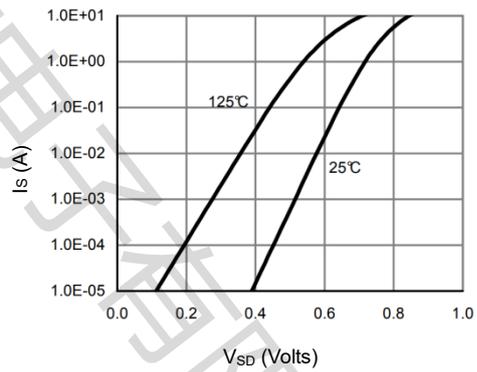


Fig 4. Body-Diode Characteristics

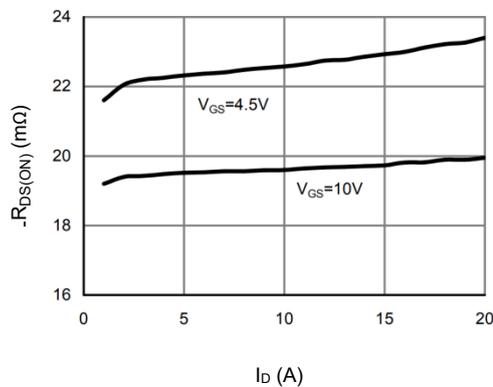


Fig 5. On-Resistance vs. Drain Current and Gate Voltage

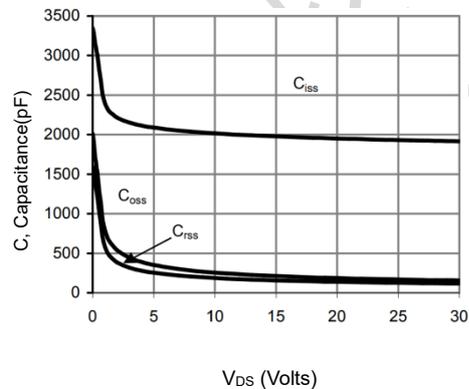


Fig 6. Capacitance Characteristics

TYPICAL ELECTRICAL AND THERMAL CHARACTERISTICS

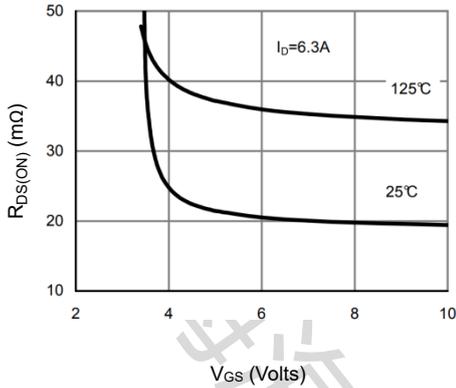


Fig 7. On-Resistance vs. Gate-Source Voltage

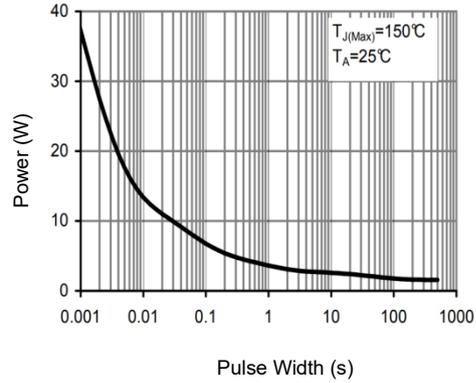


Fig 8. Single Pulse Power Rating Junction-to-Ambient (Note E)

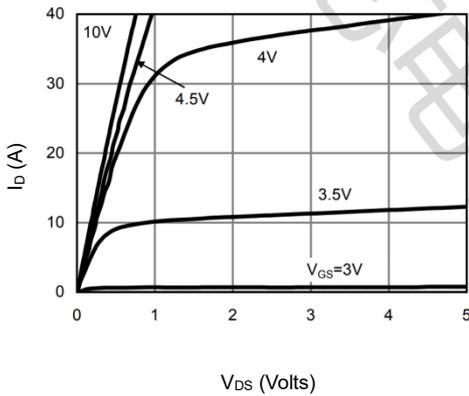


Fig 9. On-Region Characteristics

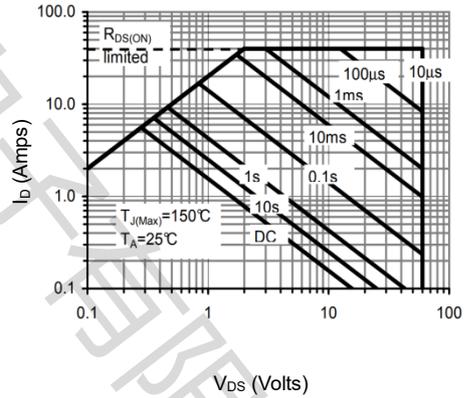


Fig 10. Maximum Forward Biased Safe Operating Area (Note E)

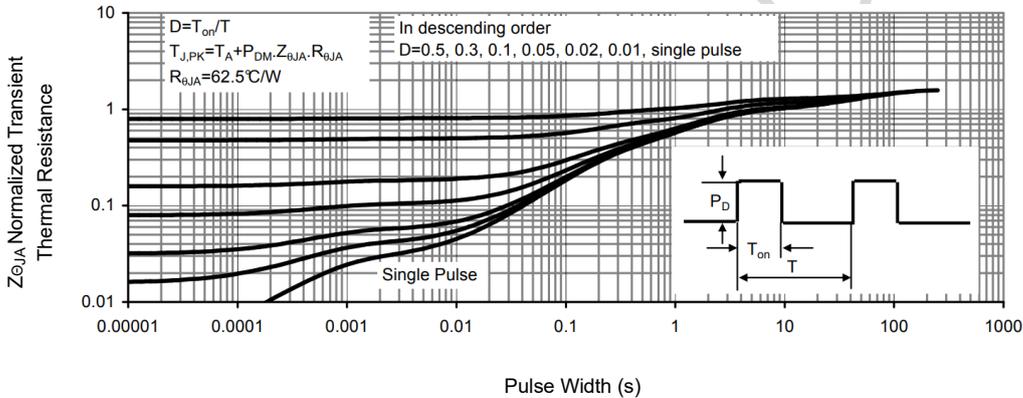
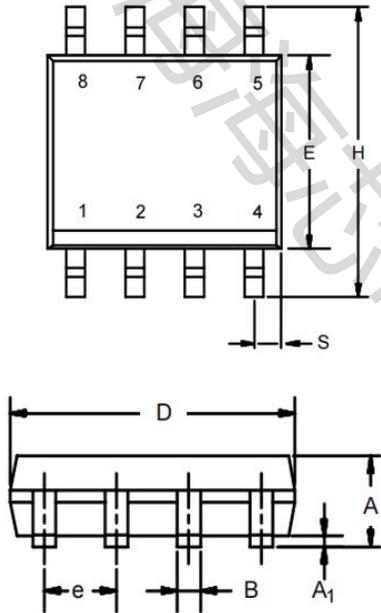


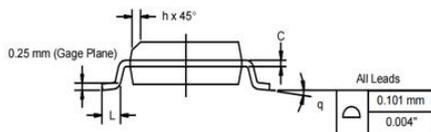
Fig 11. Normalized Maximum Transient Thermal Impedance

SOP-8 Package Outline

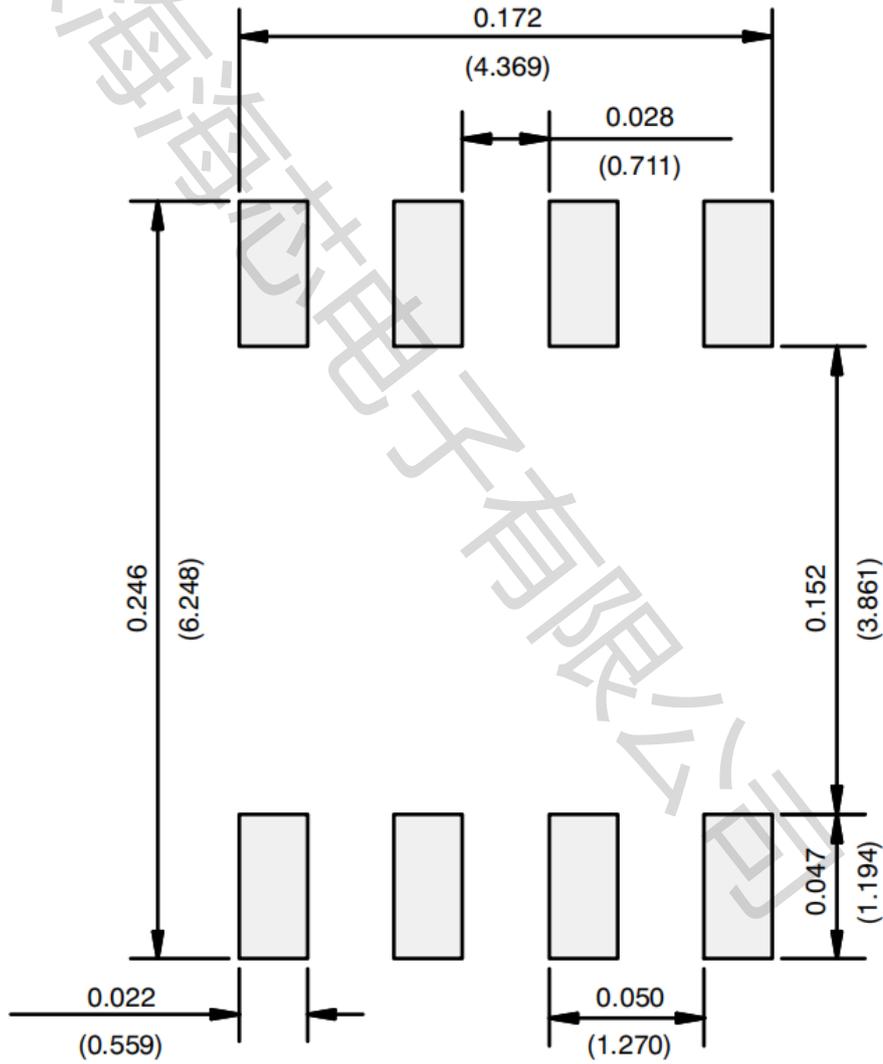
Dimensions are shown in millimeters (inches)



DIM	MILLIMETERS		INCHES	
	Min	Max	Min	Max
A	1.35	1.75	0.053	0.069
A1	0.10	0.20	0.004	0.008
B	0.35	0.51	0.014	0.020
C	0.19	0.25	0.0075	0.010
D	4.80	5.00	0.189	0.196
E	3.80	4.00	0.150	0.157
e	1.27 BSC		0.050 BSC	
H	5.80	6.20	0.228	0.244
h	0.25	0.50	0.010	0.020
L	0.50	0.93	0.020	0.037
q	0°	8°	0°	8°
S	0.44	0.64	0.018	0.026

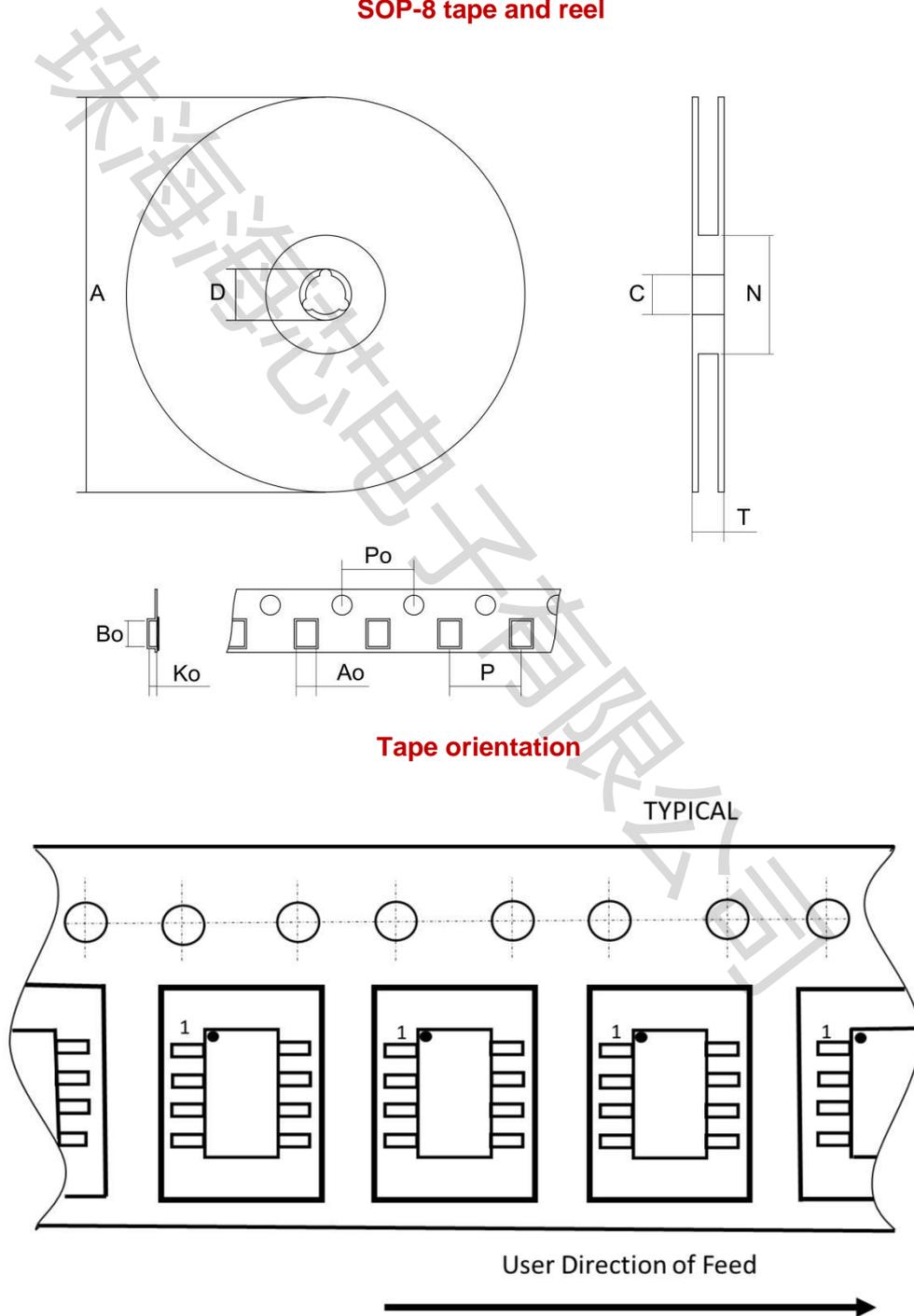


RECOMMENDED MINIMUM PADS FOR SOP-8



SOP-8 packing information

SOP-8 tape and reel



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