



**1.5A Dual High Speed  
MOSFET Drivers**

**FEATURES**

- High Peak Output Current >1.5A
- Fast Switching  $t_p = 40\text{ns}$
- Wide Operating Range..... 4.5V to 18V
- Matched Rise And Fall Times
- ESD Protected 4kV
- Drive Capability..... 1000 pF in 25 ns
- Short Delay Time..... <40 ns Typ
- Low Supply Current
  - With Logic "1" Input..... 4 mA
  - With Logic "0" Input..... 400  $\mu\text{A}$
- Latch-Up Protected: Will Withstand > 0.5A
- Input Will Withstand Negative Inputs
- Pinout Same As AS426/AS427/AS428

**APPLICATIONS**

- Motor Controls
- Switch-Mode Power Supplies
- Pulse Transformer Driver
- Class D Switching Amplifiers

**PRODUCT DESCRIPTION**

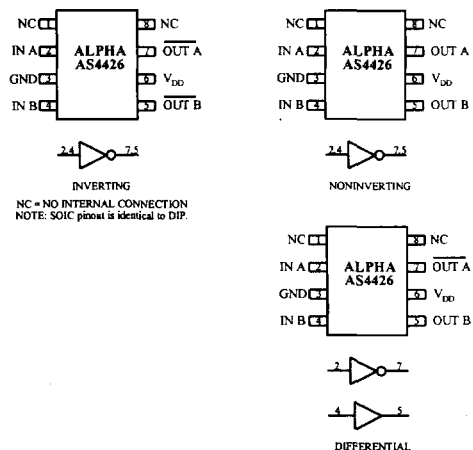
The ALPHA Semiconductor AS4426 series are dual CMOS drivers are designed to drive capacitive, resistive and inductive loads switching 1000  $\mu\text{F}$  gate capacities in under 30ns while providing low impedances in both the ON and OFF states to insure the MOSFET'S intended state will not be affected. All terminals are fully protected up to 4kV of ESD.

**ORDERING INFORMATION**

PART NUMBER	PACKAGE TYPE	LOGIC
AS4426XP	8-Pin PDIP	Inverting
AS4426XS	8-Pin SOIC	Inverting
AS4426XU	5-Pin TO-220	Inverting
AS4427XP	8-Pin PDIP	Non-inverting
AS4427XS	8-Pin SOIC	Non-inverting
AS4427XU	5-Pin TO-220	Non-inverting
AS4428XP	8-Pin PDIP	Differential
AS4428XS	8-Pin SOIC	Differential
AS4428XU	5-Pin TO-220	Differential

X= C Commercial; I Industrial; M Military

**Pin Connections**



## ABSOLUTE MAXIMUM RATINGS

Supply Voltage.....	+22V
Input Voltage, IN A or IN B .....	$V_{DD} + 0.3V$ to GND -5.0V
Maximum Chip Temperature.....	+150°C
Storage Temperature Range .....	-65°C to +150°C
Lead Temperature (Soldering, 10 sec.).....	+300°C
Package Thermal Resistance SOIC.....	500mW
PDIP $R_{\theta J-A}$ .....	125°C/W
PDIP $R_{\theta J-C}$ .....	42°C/W
SOIC $R_{\theta J-A}$ .....	250°C/W
SOIC $R_{\theta J-C}$ .....	75°C/W

## Operating Temperature Range

C Version.....	0°C to +70°C
I Version .....	-40°C to +85°C
Power Dissipation	
Plastic.....	1000mW

## ELECTRICAL CHARACTERISTICS $T_A = +25^\circ\text{C}$ with $4.5V \leq V_{DD} \leq 18V$ , unless otherwise specified.

Parameter	Conditions	Min	Typ.	Max	Units
<b>INPUT</b>					
Logic 1 High Input Voltage		2.4	-	-	V
Logic 0 Low Input Voltage			-	0.8	V
Input Current	$0V \leq V_{IN} \leq V_{DD}$	-1	-	1	$\mu\text{A}$
<b>OUTPUT</b>					
High Output Voltage		$V_{DD} - 0.025$	-	-	V
Low Output Voltage		-	-	0.025	V
Output Resistance	$V_{DD} = 18V, I_O = 10\text{ mA}$	-	7	10	$\Omega$
Peak Output Current	Duty Cycle $\leq 2\%$	-	1.5	-	A
Latch-Up Protection	Duty Cycle $\leq 2\%$	>0.5	-	-	A
Withstand Reverse Current	$t \leq 300\ \mu\text{s}$				
<b>SWITCHING TIME (Note 1)</b>					
Rise Time	Figure 1	-	19	30	ns
Fall Time	Figure 1	-	19	30	ns
Delay Time	Figure 1	-	20	30	ns
Delay Time	Figure 1	-	40	50	ns
<b>POWER SUPPLY</b>					
Power Supply Current	$V_{IN} = 3V$ (Both Inputs)	-	-	4.5	mA
	$V_{in} = 0V$ (Both Inputs)	-	-	0.4	mA

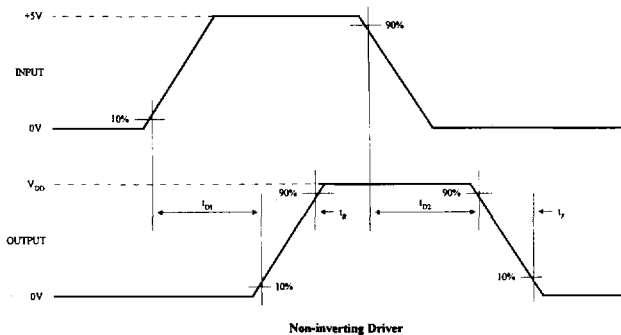
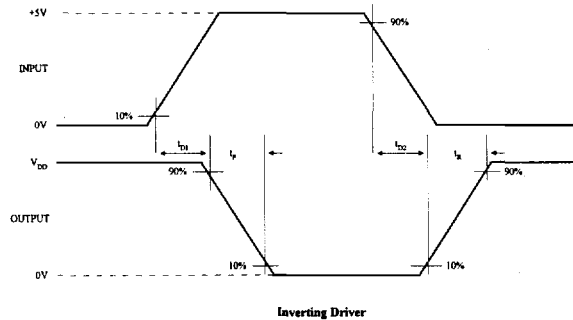
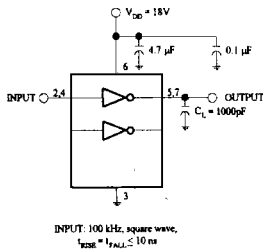
# AS4426/AS4427/AS4428

## ELECTRICAL CHARACTERISTICS

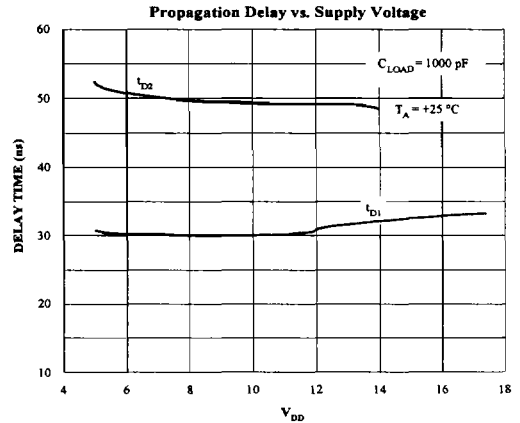
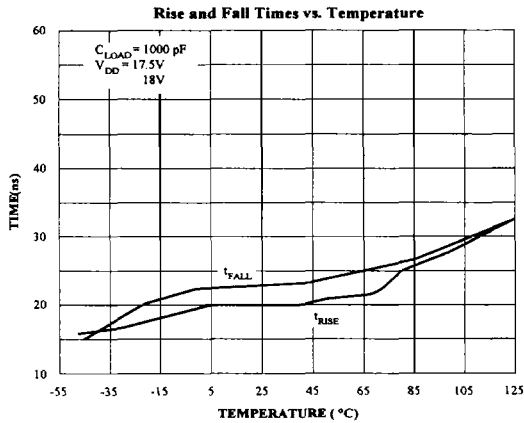
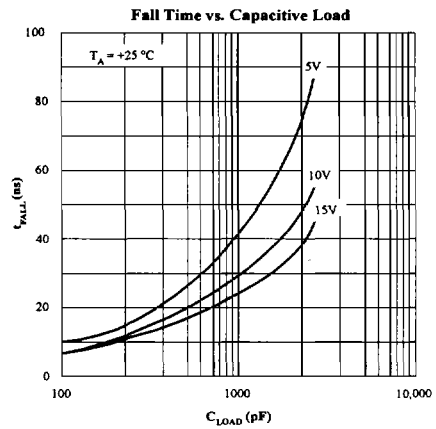
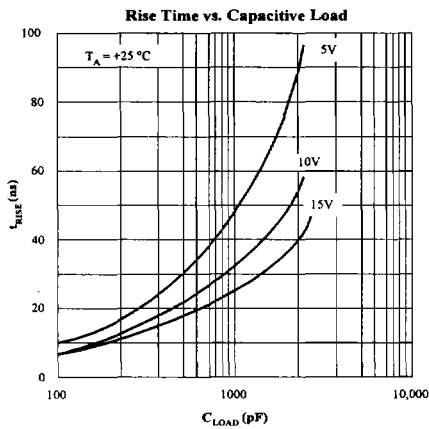
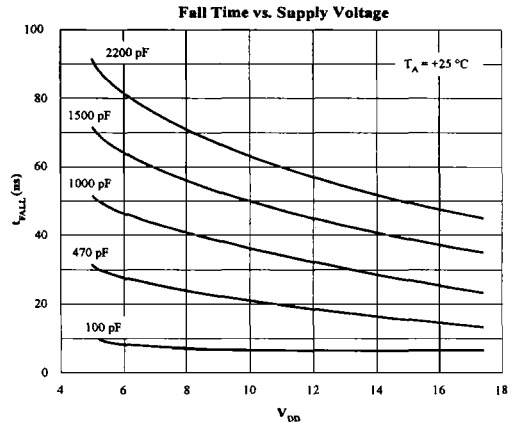
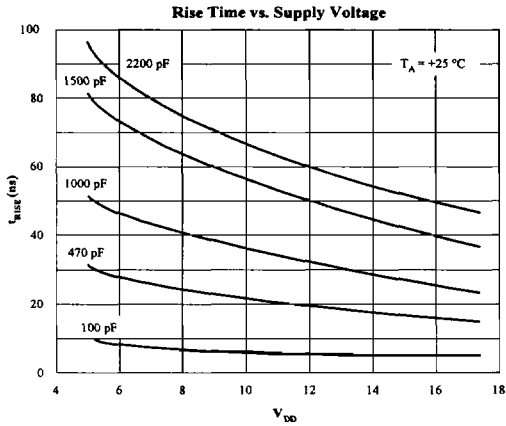
Specifications measured over temperature range with  $4.5V \leq V_{DD} \leq 18V$ , unless otherwise specified.

Parameter	Conditions	Min	Typ.	Max	Units
<b>INPUT</b>					
Logic 1 High Input Voltage		2.4	-	-	V
Logic 0 Low Input Voltage		-	-	0.8	V
Input Current	$0V \leq V_{IN} \leq V_S$	-1	-	1	$\mu A$
<b>OUTPUT</b>					
High Output Voltage		$V_{DD} - 0.025$	-	-	V
Low Output Voltage		-	-	0.025	V
Output Resistance	$V_{DD} = 18V, I_O = 10 mA$	-	9	12	$\Omega$
Peak Output Current	Duty Cycle $\leq 2\%$ , $t \leq 300 \mu s$	-	1.5	-	A
Latch-Up Protection	Duty Cycle $\leq 2\%$	$>0.5$	-	-	A
Withstand Reverse Current	$t \leq 300 \mu s$	-	-	-	A
<b>SWITCHING TIME (Note 1)</b>					
Rise Time	Figure 1	-	-	40	ns
Fall Time	Figure 1	-	-	40	ns
Delay Time	Figure 1	-	-	40	ns
Delay Time	Figure 1	-	-	60	ns
<b>POWER SUPPLY</b>					
Power Supply Current	$V_{IN} = 3V$ (Both Inputs) $V_{IN} = 0V$ (Both Inputs)	-	-	8	mA
		-	-	0.6	mA

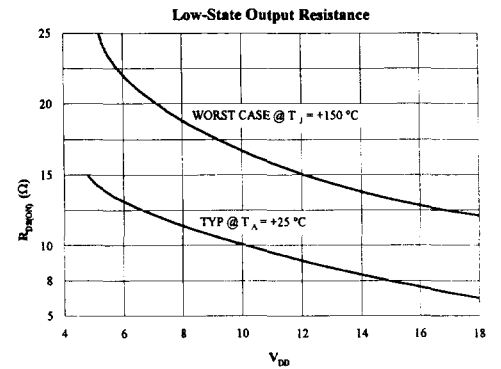
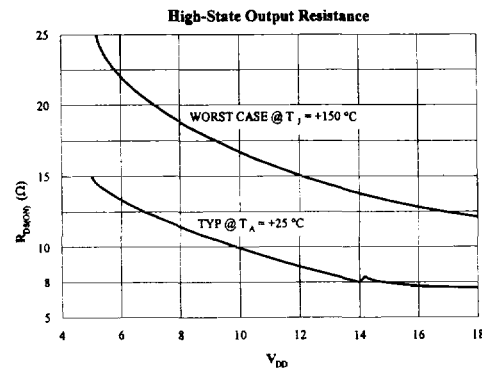
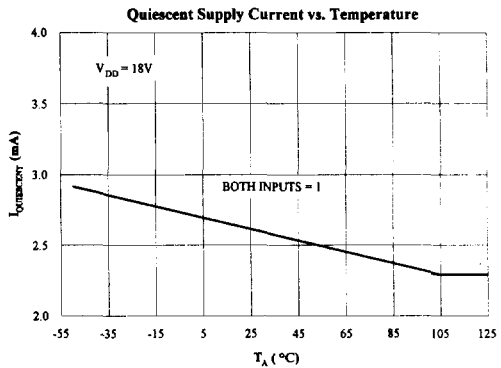
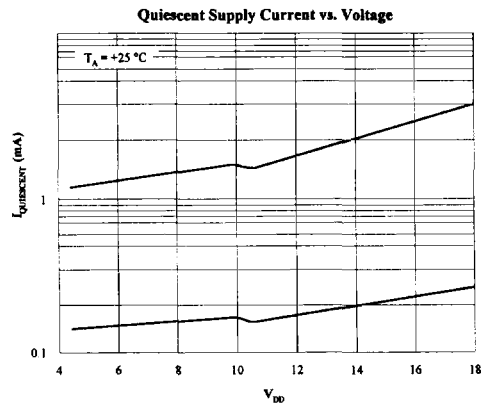
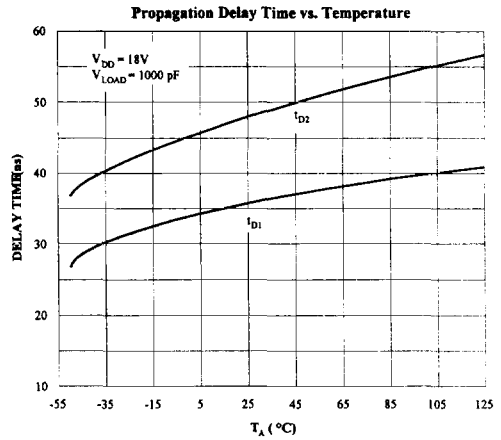
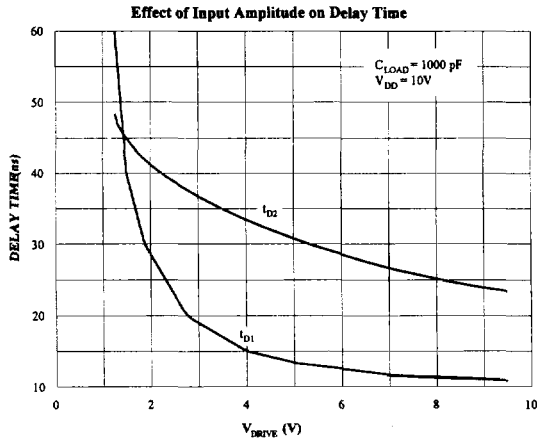
Note: 1. Switching times guaranteed by design.



TYPICAL CHARACTERISTICS CURVES



## TYPICAL CHARACTERISTIC CURVES (Continued)



## SUPPLY CURRENT CHARACTERISTICS CURVES (Load On Single Output Only)

