

# Quad High-Current Power Driver

## FEATURES

- Wide Voltage Range
- High Current Drive
- Fast Rise and Fall Times
- Low Power Consumption
- Single Power Supply
- Low Output Impedance
- TTL/CMOS Inputs
- ESD Protection

## APPLICATIONS

- Motor Drives
- Power Supplies
- dc/dc Converters

## END PRODUCTS

- Computers
- Printers
- Avionics
- Industrial Controllers
- Robotics
- Central Office Equipment

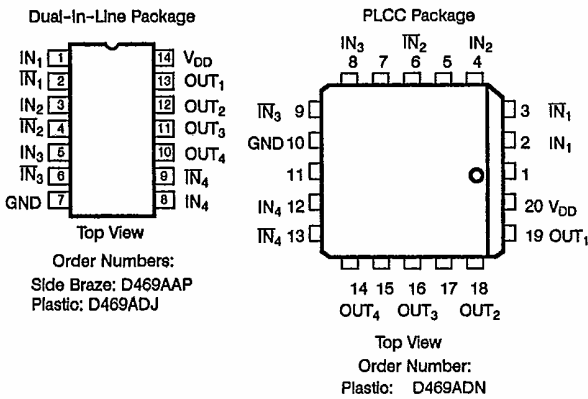
## DESCRIPTION

The D469A is a quad monolithic high current and high speed driver designed to interface logic level signals to power MOSFETs, at voltages up to 15 V, in motor controls and other power control applications. This 4-channel power driver can source or sink up to 1.5 A.

The D469A is available in 14-pin side braze, 14-pin plastic dip and 20-pin PLCC packages. Performance grades include the military, A suffix (-55 to 125°C), and industrial, D suffix (-40 to 85°C) temperature ranges.

## PIN CONFIGURATION

## FUNCTIONAL BLOCK DIAGRAM



Truth Table

IN <sub>x</sub>	$\overline{IN}_x$	OUT <sub>x</sub>
0	0	LO
0	1	LO
1	0	HI
1	1	LO

# D469A



## ABSOLUTE MAXIMUM RATINGS

T-52-13-90

Ambient Temperature Under Bias .....	-55 to 125°C	AK Suffix	DJ Suffix
Storage Temperature .....	-65 to 150°C	Operating Temperature .....	-55 to 125°C .....
Voltage on Any Pin with Respect to Ground .....	-0.3 to $V_{DD} + 0.3$ V	Junction Temperature .....	150°C .....
Supply Voltage, $V_{DD}$ .....	-0.3 to 18 V	Power Dissipation .....	1000 mW .....
Peak Output Current .....	$\pm 1.5$ A	Derating .....	10 mW/°C .....
			above 50°C .....
			6 mW/°C .....
			above 25°C .....
		$\Theta_{JA}$ .....	100°C/W .....
			(No Airflow) .....
			167°C/W .....
			(No Airflow)

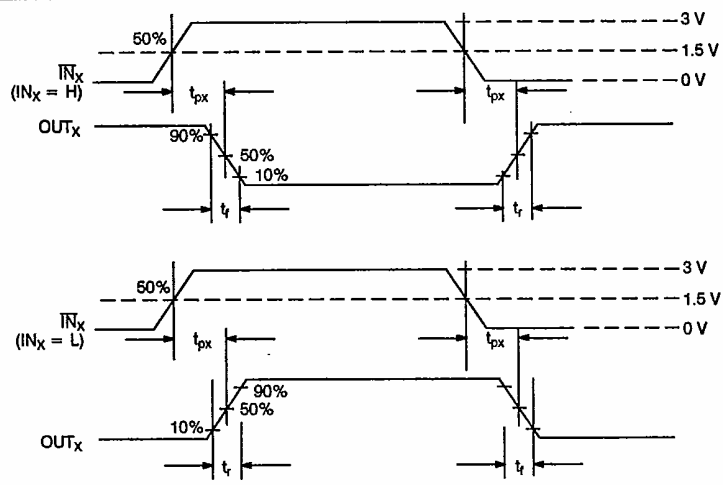
## SPECIFICATIONS<sup>a</sup>

PARAMETER	SYMBOL	TEST CONDITIONS Unless Otherwise Specified $V_{DD} = 15$ V $T_A =$ Operating Temperature Range	TYP <sup>d</sup>	MIN <sup>b</sup>	MAX <sup>b</sup>	UNIT
<b>INPUT</b>						
Input Voltage HIGH	$V_{INH}$			2.4		V
Input Voltage LOW	$V_{INL}$				0.8	
Input Current with Input Voltage HIGH	$I_{INH}$	$V_{IN} = V_{DD}$	0.001		10	$\mu$ A
Input Current with Input Voltage LOW	$I_{INL}$	$V_{IN} = 0$ V	-0.001	-10		
<b>OUTPUT</b>						
Output Voltage HIGH	$V_{OUTH}$	$I_{OUT} = -100$ mA One Output at a Time	14.44	13		V
		$I_{OUT} = -10$ mA	14.95	14.8		
Output Voltage LOW	$V_{OUTL}$	$I_{OUT} = 100$ mA One Output at a Time	0.33		1	A
		$I_{OUT} = 10$ mA	0.033		0.1	
Output Source Current	$I_{OS+}$		1.5			
Output Sink Current	$I_{OS-}$		-1.5			
Output Resistance	$R_{OUT}$	$I_{OUT} = +10$ mA	3.5			$\Omega$
		$I_{OUT} = -10$ mA	5.5			
<b>DYNAMIC</b>						
Propagation Delay	$t_{PX}$	$C_L = 1000$ pF	30		80	ns
Rise Time	$t_r$		10			
Fall Time	$t_f$		10			
Input Capacitance	$C_{IN}$		5			pF

SPECIFICATIONS <sup>a</sup>		T-52-13-90						
PARAMETER	SYMBOL	TEST CONDITIONS			TYP <sup>d</sup>	MIN <sup>b</sup>	MAX <sup>b</sup>	UNIT
		Unless Otherwise Specified						
		$V_{DD} = 15\text{ V}$ $T_A = \text{Operating Temperature Range}$						
<b>SUPPLY</b>								
Supply Current	$I_{DD}$	$IN_X = \overline{IN}_X = 0\text{ V}, V_{DD} = 15.75\text{ V}$			1.4		7	mA
		$IN_X = \overline{IN}_X = 3\text{ V}, V_{DD} = 15.75\text{ V}$			14		30	
		$f = 100\text{ kHz}, V_{DD} = 15.75\text{ V}$ $C_L = 1000\text{ pF}, \text{One Output at a Time}$			7			

<sup>a</sup>Refer to PROCESS OPTION FLOWCHART in the Siliconix data book for additional information.  
<sup>b</sup>The algebraic convention whereby the most negative value is a minimum and the most positive a maximum, is used in this data sheet.  
<sup>c</sup>Guaranteed by design, not subject to production test.  
<sup>d</sup>Typical values are for DESIGN AID ONLY at  $T_A = 25^\circ\text{C}$ , not guaranteed nor subject to production testing.

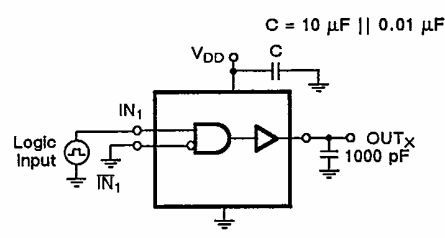
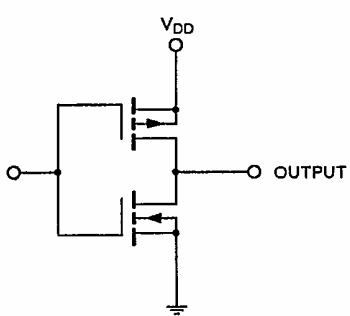
**AC TESTING CONDITIONS**



**5**

**OUTPUT STRUCTURE**

**SWITCHING TIME TEST CIRCUIT\***



\*Test repeated for inverting input

## TYPICAL CHARACTERISTICS

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