

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

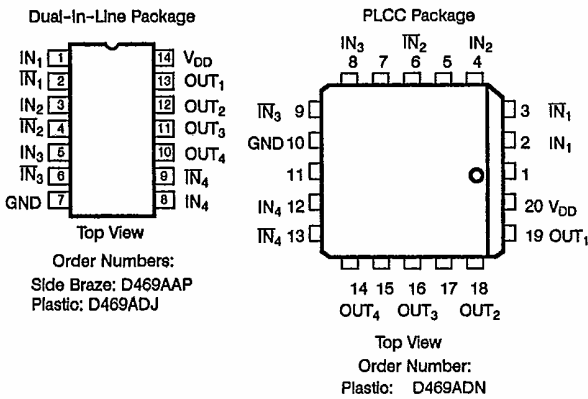
DESCRIPTION

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.

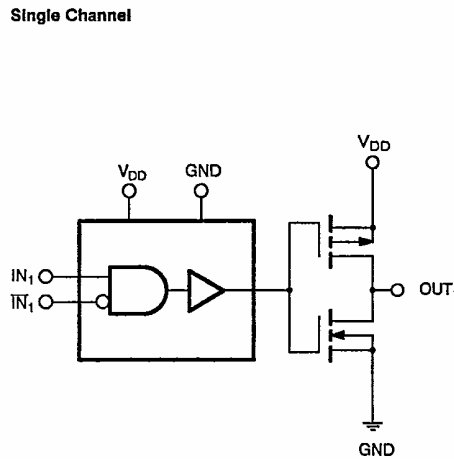
PIN CONFIGURATION

FUNCTIONAL BLOCK DIAGRAM



Truth Table

IN _x	\overline{IN}_x	OUT _x
0	0	LO
0	1	LO
1	0	HI
1	1	LO



D469A



ABSOLUTE MAXIMUM RATINGS

T-52-13-90

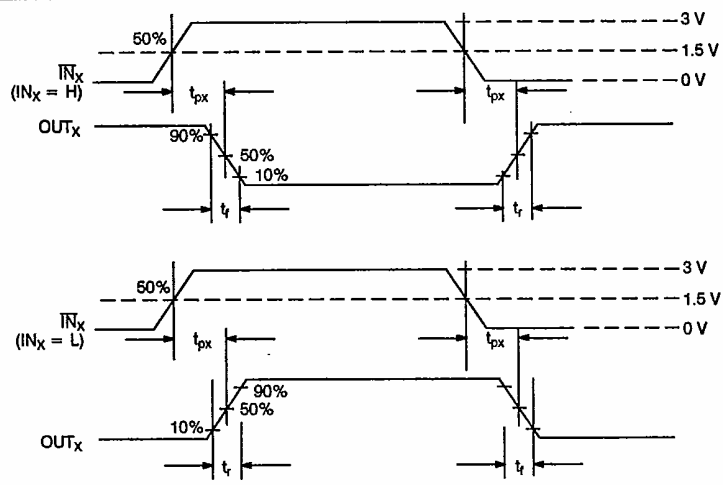
Ambient Temperature Under Bias	-55 to 125°C	AK Suffix	DJ Suffix
Storage Temperature	-65 to 150°C	Operating Temperature	-55 to 125°C
Voltage on Any Pin with Respect to Ground	-0.3 to $V_{DD} + 0.3$ V	Junction Temperature	150°C
Supply Voltage, V_{DD}	-0.3 to 18 V	Power Dissipation	1000 mW
Peak Output Current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

SPECIFICATIONS ^a						
PARAMETER	SYMBOL	TEST CONDITIONS Unless Otherwise Specified $V_{DD} = 15$ V $T_A =$ Operating Temperature Range	TYP ^d	MIN ^b	MAX ^b	UNIT
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	μ A
Input Current with Input Voltage LOW	I_{INL}	$V_{IN} = 0$ V	-0.001	-10		
OUTPUT						
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			Ω
		$I_{OUT} = -10$ mA	5.5			
DYNAMIC						
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 ^a		T-52-13-90						
PARAMETER	SYMBOL	TEST CONDITIONS			TYP ^d	MIN ^b	MAX ^b	UNIT
		Unless Otherwise Specified						
		$V_{DD} = 15\text{ V}$ $T_A = \text{Operating Temperature Range}$						
SUPPLY								
Supply Current	I_{DD}	$I_{N_X} = \overline{I_{N_X}} = 0\text{ V}, V_{DD} = 15.75\text{ V}$			1.4		7	mA
		$I_{N_X} = \overline{I_{N_X}} = 3\text{ V}, V_{DD} = 15.75\text{ V}$			14		30	
		$f = 100\text{ kHz}, V_{DD} = 15.75\text{ V}$ $C_L = 1000\text{ pF}, \text{One Output at a Time}$			7			

^aRefer to PROCESS OPTION FLOWCHART in the Siliconix data book for additional information.
^bThe algebraic convention whereby the most negative value is a minimum and the most positive a maximum, is used in this data sheet.
^cGuaranteed by design, not subject to production test.
^dTypical values are for DESIGN AID ONLY at $T_A = 25^\circ\text{C}$, not guaranteed nor subject to production testing.

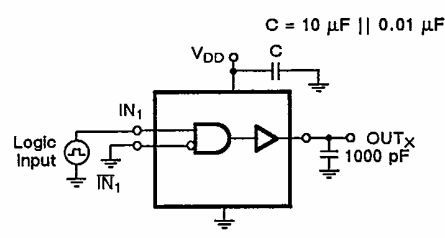
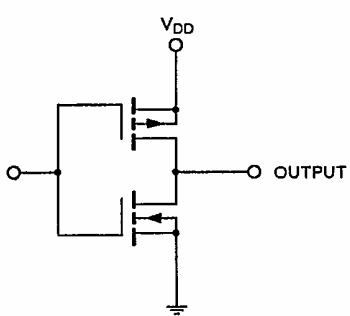
AC TESTING CONDITIONS



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OUTPUT STRUCTURE

SWITCHING TIME TEST CIRCUIT*



*Test repeated for inverting input

TYPICAL CHARACTERISTICS

T-52-13-90

