

FAST 74F805, 74F1805 NOR Drivers

FAST Products

FEATURES

- High capacitive drive capability
- Choice of configuration
Corner V_{CC} and GND-- 'F805
Center V_{CC} and GND-- 'F1805
- Typical propagation delay of 2.3ns

74F805-Hex Two-Input NOR Driver
74F1805-Hex Two-Input NOR Driver
Product Specification

TYPE	TYPICAL PROPAGATION DELAY	TYPICAL SUPPLY CURRENT (TOTAL)
74F805	2.3ns	10mA
74F1805	2.3ns	10mA

ORDERING INFORMATION

PACKAGES	COMMERCIAL RANGE $V_{CC} = 5V \pm 10\%$; $T_A = 0^\circ C$ to $+70^\circ C$
20-Pin Plastic DIP	N74F805N, N74F1805N
20-Pin Plastic SOL	N74F805D, N74F1805D

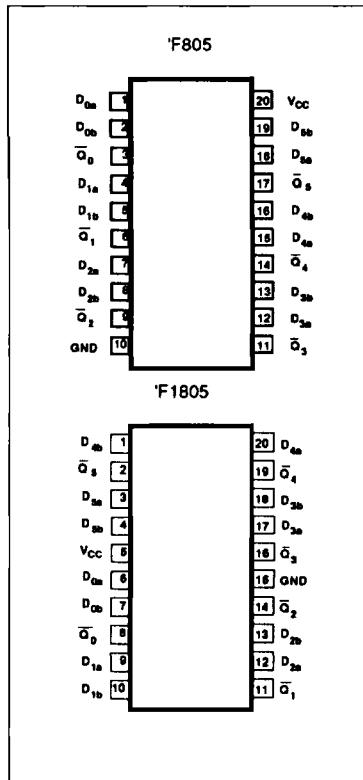
INPUT AND OUTPUT LOADING AND FAN-OUT TABLE

PINS	DESCRIPTION	74F(U.L.) HIGH/LOW	LOAD VALUE HIGH/LOW
$D_{na} - D_{nb}$	Data inputs	1.0/0.033	20 μ A/20 μ A
$\bar{Q}_0 - \bar{Q}_5$	Data outputs	2400/80	48mA/48mA

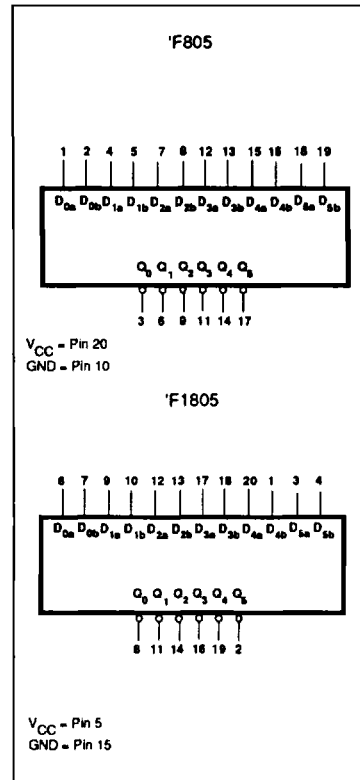
NOTE:

One (1.0) FAST Unit Load is defined as: 20 μ A in the High state and 0.6mA in the Low state.

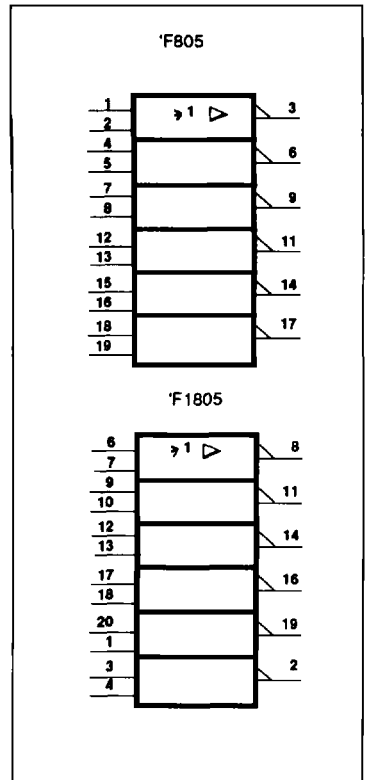
PIN CONFIGURATION



LOGIC SYMBOL



LOGIC SYMBOL (IEEE/IEC)



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FUNCTION TABLE

INPUTS		OUTPUT
D _{na}	D _{nb}	Q _n
H	X	L
X	H	L
L	L	H

H = High voltage level
 L = Low voltage level
 X = Don't care

ABSOLUTE MAXIMUM RATINGS (Operation beyond the limits set forth in this table may impair the useful life of the device. Unless otherwise noted these limits are over the operating free-air temperature range.)

SYMBOL	PARAMETER	RATING	UNIT
V _{CC}	Supply voltage	-0.5 to +7.0	V
V _{IN}	Input voltage	-0.5 to +7.0	V
I _{IN}	Input current	-30 to +5	mA
V _{OUT}	Voltage applied to output in High output state	-0.5 to +V _{CC}	V
I _{OUT}	Current applied to output in Low output state	96	mA
T _A	Operating free-air temperature range	0 to +70	°C
T _{STG}	Storage temperature	-65 to +150	°C

RECOMMENDED OPERATION CONDITIONS

SYMBOL	PARAMETER	LIMITS			UNIT
		Min	Nom	Max	
V _{CC}	Supply voltage	4.5	5.0	5.5	V
V _{IH}	High-level input voltage	2.0			V
V _{IL}	Low-level input voltage			0.8	V
I _{IK}	Input clamp current			-18	mA
I _{OH}	High-level output current			-48	mA
I _{OL}	Low-level output current			48	mA
T _A	Operating free-air temperature range	0		70	°C

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DC ELECTRICAL CHARACTERISTICS (Over recommended operating free-air temperature range unless otherwise noted.)

SYMBOL	PARAMETER	TEST CONDITIONS ¹		LIMITS			UNIT	
				Min	Typ ²	Max		
V_{OH}	High-level output voltage	$V_{CC} = \text{MIN}, V_{IL} = \text{MAX}$	$\pm 10\%V_{CC}$	2.0			V	
		$V_{IH} = \text{MIN}, I_{OH} = \text{MAX}$	$\pm 5\%V_{CC}$	2.0			V	
V_{OL}	Low-level output voltage	$V_{CC} = \text{MIN}, V_{IL} = \text{MAX}$	$\pm 10\%V_{CC}$		0.38	0.55	V	
		$V_{IH} = \text{MIN}, I_{OL} = \text{MAX}$	$\pm 5\%V_{CC}$		0.38	0.55	V	
V_{IK}	Input clamp voltage	$V_{CC} = \text{MIN}, I_I = I_{IK}$			-0.73	-1.2	V	
I_I	Input current at maximum input voltage	$V_{CC} = \text{MAX}, V_I = 7.0V$				100	μA	
I_{IH}	High-level input current	$V_{CC} = \text{MAX}, V_I = 2.7V$				20	μA	
I_{IL}	Low-level input current	$V_{CC} = \text{MAX}, V_I = 0.5V$				-20	μA	
I_O	Output current ³	$V_{CC} = \text{MAX}, V_O = 2.25V$		-60		-150	mA	
I_{CC}	Supply current (total)	I_{CCH}	$V_{CC} = \text{MAX}$	$V_{IN} = \text{GND}$		3	5	mA
		I_{CCL}		$V_{IN} = 4.5V$		17	25	mA

NOTES:

- For conditions shown as MIN or MAX, use the appropriate value specified under recommended operating conditions for the applicable type.
- All typical values are at $V_{CC} = 5V, T_A = 25^\circ C$.
- The output conditions have been chosen to produce a current that closely approximates one half of the true short-circuit output current, I_{OS} .

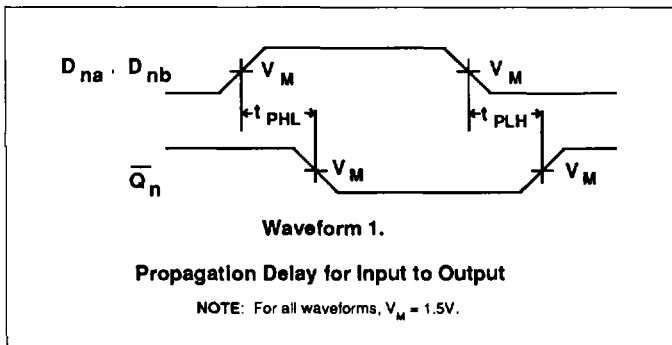
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AC ELECTRICAL CHARACTERISTICS

SYMBOL	PARAMETER	TEST CONDITION	LIMITS					UNIT
			T _A = +25°C V _{CC} = 5V C _L = 50pF R _L = 500Ω			T _A = 0°C to +70°C V _{CC} = 5V ±10% C _L = 50pF R _L = 500Ω		
			Min	Typ	Max	Min	Max	
t _{PLH} t _{PHL}	Propagation delay D _{na} , D _{nb} to \bar{Q}_n	Waveform 1	1.0 1.0	2.0 2.5	4.0 4.5	1.0 1.0	4.0 4.5	ns

AC WAVEFORMS



TEST CIRCUIT AND WAVEFORMS

