

Hex inverter/buffer drivers (open-collector)

74F07

FEATURES

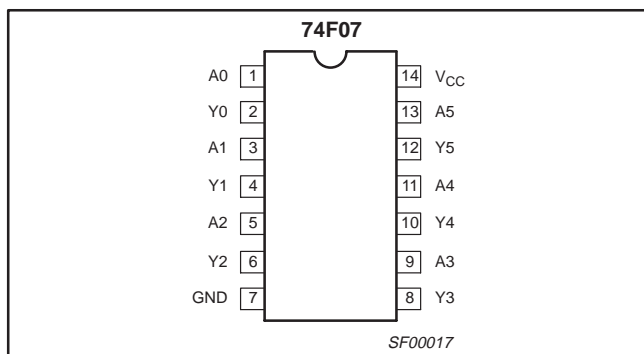
- Open Collector output drive 64mA
- High speed
- 12V output termination voltage

TYPE	TYPICAL PROPAGATION DELAY	TYPICAL SUPPLY CURRENT (TOTAL)
74F07	4.5ns	32mA

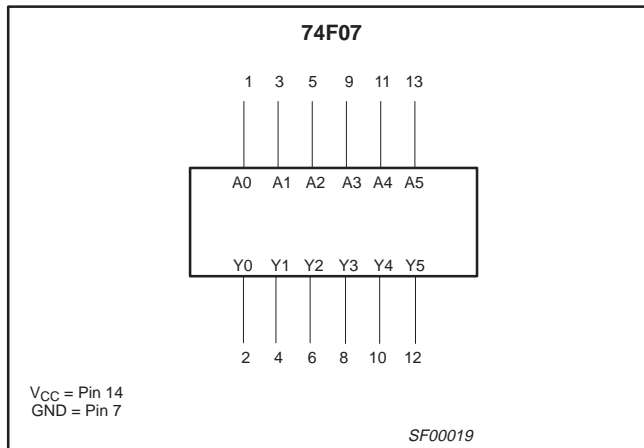
ORDERING INFORMATION

DESCRIPTION	TYPE NUMBER	PKG DWG #
14-pin plastic small outline package	N74F07D	SOT108-1
14-pin plastic dual in-line package	N74F07N	SOT27-1

PIN CONFIGURATIONS



LOGIC SYMBOLS



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ABSOLUTE MAXIMUM RATINGS

(Operation beyond the limit 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 12	V
I_{OUT}	Current applied to output in Low output state	128	mA
T_{amb}	Operating free air temperature range	0 to +70	°C
T_{stg}	Storage temperature range	-65 to +150	°C

RECOMMENDED OPERATING 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
V_{OH}	High-level output voltage			12	V
I_{OL}	Low-level output current			64	mA
T_{amb}	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		
I_{OH}	High-level output current	$V_{CC} = \text{MIN}, V_{IL} = \text{MAX},$ $V_{OH} = \text{MAX}, V_{IH} = \text{MIN}$			250	μA	
V_{OL}	Low-level output voltage	$V_{CC} = \text{MIN},$ $V_{IL} = \text{MAX},$ $V_{IH} = \text{MIN}$	$I_{OL} = \text{MAX}$	$\pm 10\% V_{CC}$	0.30	0.50	V
				$\pm 5\% V_{CC}$	0.30	0.50	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	$V_{CC} = \text{MAX}, V_I = 7.0\text{V}$			100	μA	
I_{IH}	High-level input current	$V_{CC} = \text{MAX}, V_I = 2.7\text{V}$			20	μA	
I_{IL}	Low-level input current	$V_{CC} = \text{MAX}, V_I = 0.5\text{V}$			-0.6	mA	
I_{CC}	Supply current (total)	$V_{CC} = \text{MAX}$	I_{CCH}		10	14	mA
			I_{CCL}		32	45	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 $V_{CC} = 5\text{V}, T_{\text{amb}} = 25^\circ\text{C}$.
- Not more than one output should be shorted at a time. For testing I_{OS} , the use of high-speed test apparatus and/or sample-and-hold techniques are preferable in order to minimize internal heating and more accurately reflect operational values. Otherwise, prolonged shorting of a High output may raise the chip temperature well above normal and thereby cause invalid readings in other parameter tests. In any sequence of parameter tests, I_{OS} tests should be performed last.

AC ELECTRICAL CHARACTERISTICS

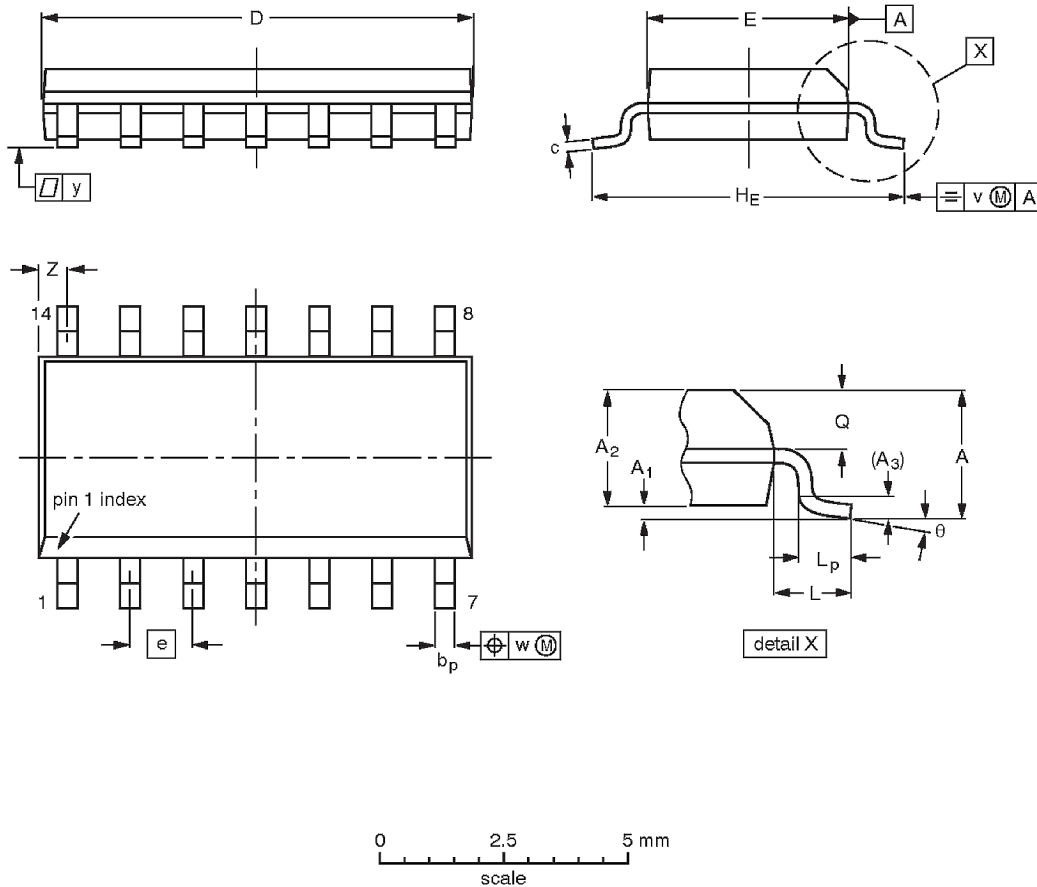
SYMBOL	PARAMETER	TEST CONDITION	LIMITS					UNIT
			$V_{CC} = +5.0\text{V}$ $T_{\text{amb}} = +25^\circ\text{C}$ $C_L = 50\text{pF}, R_L = 100\Omega$			$V_{CC} = +5.0\text{V} \pm 10\%$ $T_{\text{amb}} = 0^\circ\text{C to } +70^\circ\text{C}$ $C_L = 50\text{pF}, R_L = 100\Omega$		
			Min	Typ	Max	Min	Max	
t_{PLH} t_{PHL}	Propagation delay An to Yn	Waveform 1	2.0 3.0	4.0 5.0	6.0 7.0	2.0 2.5	6.5 7.5	ns

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SO14: plastic small outline package; 14 leads; body width 3.9 mm

SOT108-1



DIMENSIONS (inch dimensions are derived from the original mm dimensions)

UNIT	A max.	A ₁	A ₂	A ₃	b _p	c	D ⁽¹⁾	E ⁽¹⁾	e	H _E	L	L _p	Q	v	w	y	z ⁽¹⁾	θ
mm	1.75	0.25 0.10	1.45 1.25	0.25	0.49 0.36	0.25 0.19	8.75 8.55	4.0 3.8	1.27	6.2 5.8	1.05	1.0 0.4	0.7 0.6	0.25	0.25	0.1	0.7 0.3	8° 0°
inches	0.069	0.010 0.004	0.057 0.049	0.01	0.019 0.014	0.0100 0.0075	0.35 0.34	0.16 0.15	0.05	0.244 0.228	0.041	0.039 0.016	0.028 0.024	0.01	0.01	0.004	0.028 0.012	

Note

1. Plastic or metal protrusions of 0.15 mm (0.006 inch) maximum per side are not included.

OUTLINE VERSION	REFERENCES				EUROPEAN PROJECTION
	IEC	JEDEC	JEITA		
SOT108-1	076E06	MS-012			