

**Features**

**362**

- CONVERTS DTL, TTL OR RTL TO HiNIL LOGIC LEVELS
- INVERTING AND NONINVERTING INPUTS
- SPECIFIED TO TTL AND RTL CHARACTERISTICS
- IDEAL COMPANION TO 361 INPUT INTERFACE

**363**

- FANOUT UP TO 15
- VERSATILE TTL TO HiNIL INTERFACE
- EXPANDABLE
- COLLECTOR OR'able OUTPUTS
- EXCELLENT LINE DRIVER

**General Descriptions**

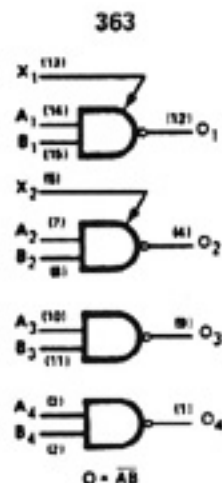
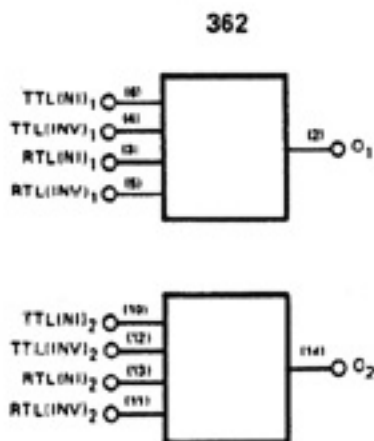
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The 362 converts TTL or RTL logic levels to HiNIL logic levels. The converted data is available at the active pullup output in inverted or noninverted form, depending on the choice of input.

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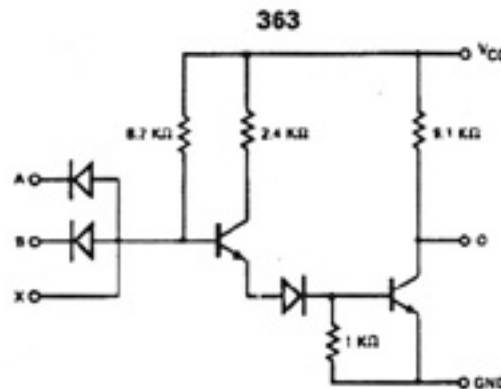
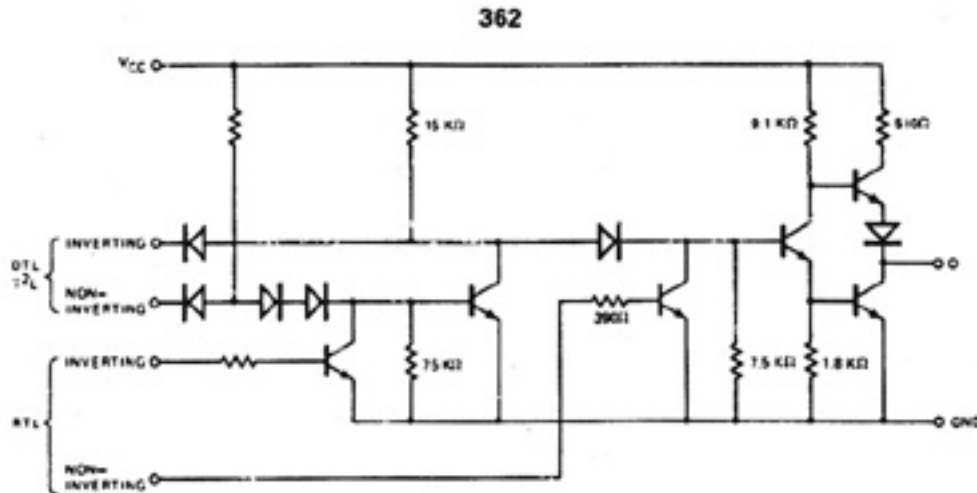
The 363 converts TTL logic levels to HiNIL levels and drives lines at the HiNIL levels. For applications flexibility, the 363 is configured as a quad NAND gate with passive pullup outputs and two expander inputs.

**Logic Diagrams**



GRD - 8  
 Vcc - 16

Equivalent Circuits



Specifications

$V_{OHL}$	5V min @ $V_{CC} = 12V$ (Type C), 9V min @ $V_{CC} = 15V$ (Type A)							
$V_{OH}$	9V min @ $V_{CC} = 11V$ (Type C), 12V min @ $V_{CC} = 14V$ (Type A)							
$I_{CC}$ (WORST-CASE)	10 mA @ 13V, 13 mA @ 16V							
$t_{PD}$	160 ns	400 ns	335 ns	225 ns	100 ns	235 ns	125 ns	225 ns
I/O FUNCTION FOR $t_{PD}$	RTL+--	RTL!--+	RTLNI!--	RTLNI++	TTLH+--	TTLI!--+	TTLNI!--	TTLNI++

Note:  $I_{CC}$  is tested at  $V_{CC} + 1$  Volt (+13V for C type and +16V for A type) and is guaranteed across the applicable temp range.  $t_{PD}$  is guaranteed at  $V_{CC} \pm 1V$  and across the applicable temp range with the output loaded with 5 unit loads.

See page 12 for electrical summary data.

362 SPECIFICATIONS FOR RTL INPUTS

Temp (°C)	C and A Types		
	-30	+25	+70/+85
$I_{IH}$ (μA)	460	440	470
$V_{INH}$ (V)	0.95	0.85	0.75
$V_{INL}$ (V)	0.6	0.5	0.38

362 SPECIFICATIONS FOR TTL INPUTS

$V_{INH} = 2.0V$ ;  $I_{INH} = 10\mu A$   
 $V_{INL} = 0.8V$ ;  $I_{INL} = 1.5$  mA at  $V_{IN} = 0.4V$   
 (these specs apply over full temperature range)

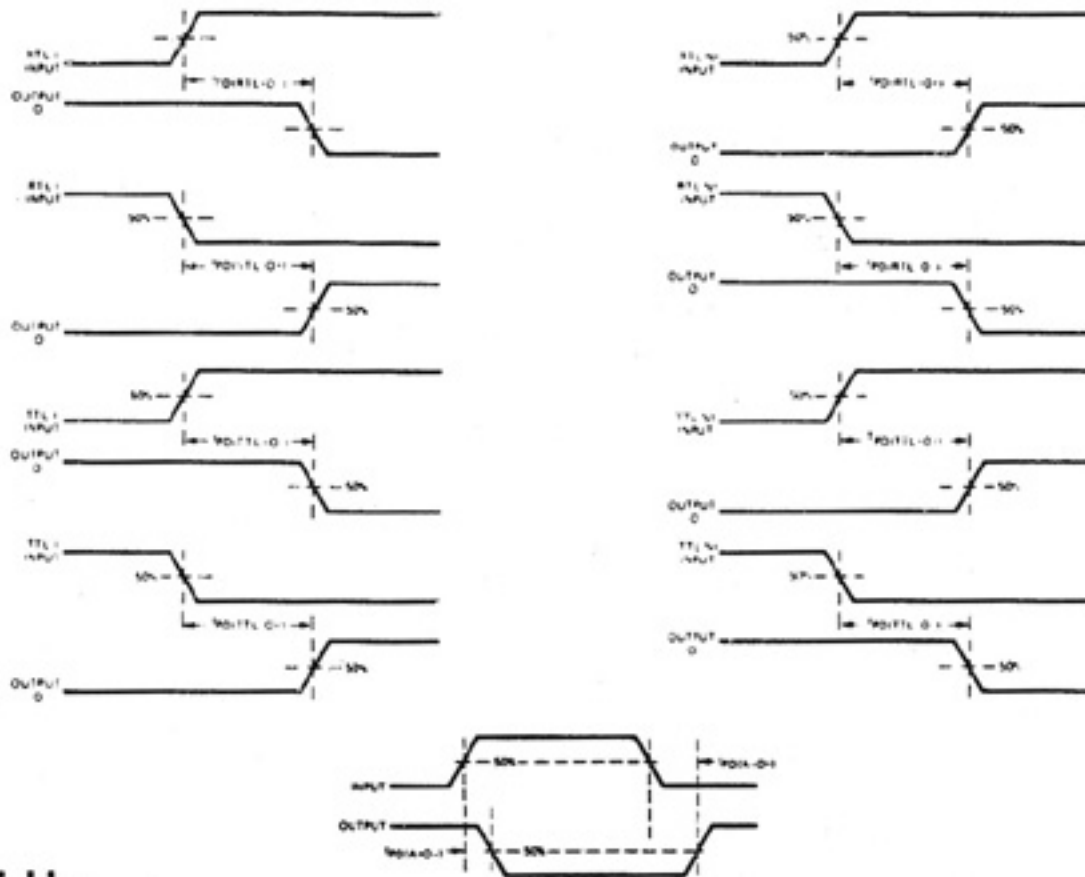
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$I_{CC}$ (WORST-CASE)	51 mA @ 13V, 64 mA @ 16V	
$t_{PD}$	240 ns	600 ns
I/O FUNCTION FOR $t_{PD}$	A+O-	A-O+

363 SPECIFICATIONS FOR TTL INPUTS

$V_{INH} = 2.0V$ ;  $I_{INH} = 10\mu A$   
 $V_{INL} = 0.8V$ ;  $I_{INL} = 2.4$  mA @  $V_{CC} = 13V$ ,  $V_{IN} = 0.4V$   
 $V_{INL} = 0.8V$ ;  $I_{INL} = 3.0$  mA @  $V_{CC} = 16V$ ,  $V_{IN} = 0.4V$

Switching Time Waveforms



Loading Tables

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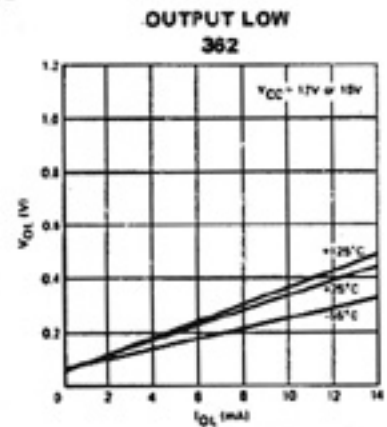
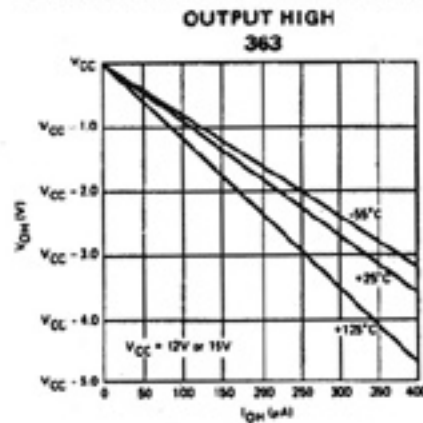
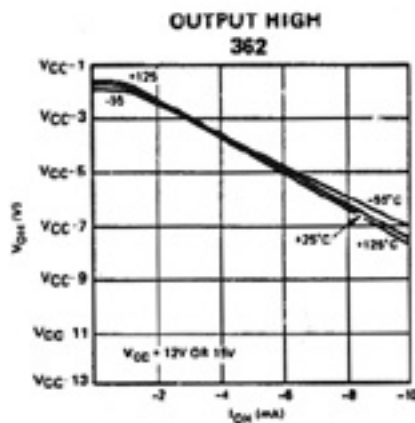
TTL, RTL O	Inputs Outputs	See specifications 5 UL
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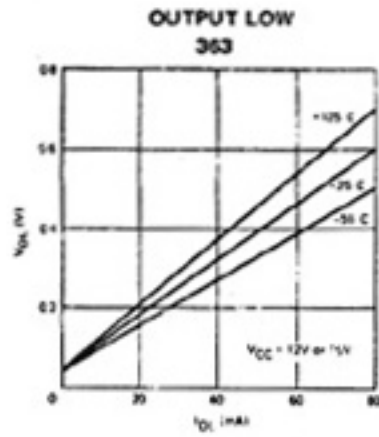
PINS	FUNCTIONS	LOADING
A, B X	TTL inputs Expanders	1 TTL load TTL expander input loading applies
O	Outputs	5 UL 15 UL with 8.2K supplemental pullup resistor

Typical Performance Characteristics

OUTPUT CURRENT VS OUTPUT VOLTAGE

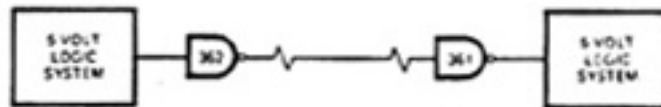


Typical Performance Characteristics (contd.)



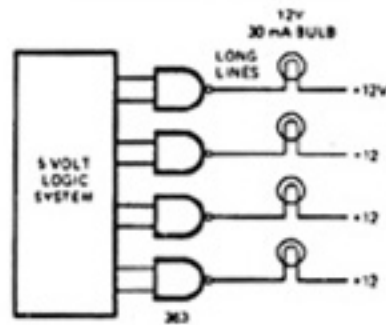
Typical Applications

LOW-NOISE DATA TRANSMISSION



When signal lines between two low-level logic systems pass through a noisy environment, use 362 and 361 transmit/receive pairs to prevent noise pickup by the receiving system.

INDICATOR DRIVER



Because of its higher output sink current and voltage, the 363 is an excellent output interface for 5V logic systems. Here, it allows a 5V logic system to control indicator lamps.