

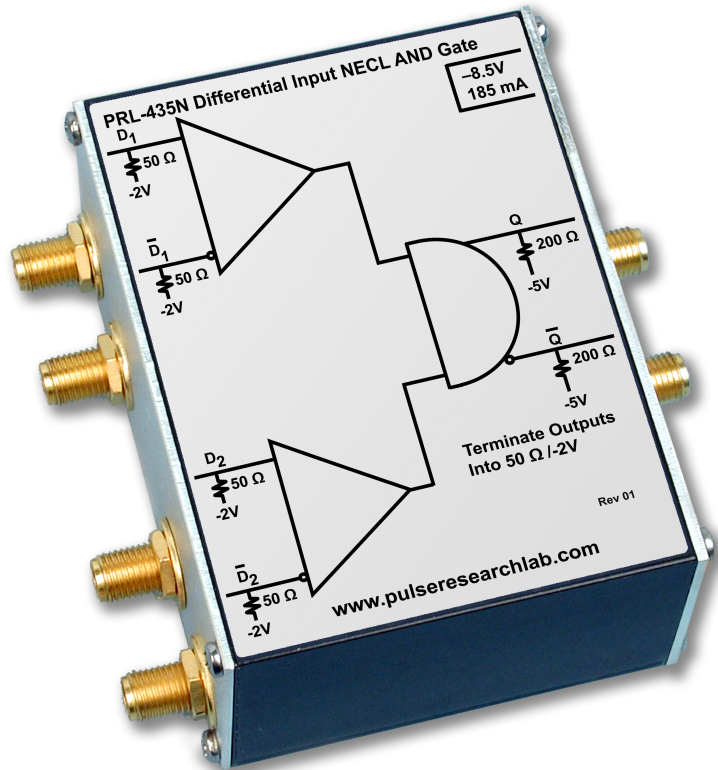
PRL-435N DIFFERENTIAL NECL INPUT AND GATE

APPLICATIONS

- GHz AND Logic Functions
- Clock or Trigger Gating
- Differential Receiver
- Sub-nanosecond Pulse Width Generation
- An Essential Lab Tool for Working with NECL Circuits

FEATURES

- 2.5 GHz f_{MAX}
- Differential Inputs
- Internal 50 Ω / -2 V Input Terminations also accept AC coupled PECL, LVPECL, or Sine wave signals
- Complementary Outputs drive 50 Ω loads terminated to -2V or AC-coupled 50 Ω loads
- DC Coupled I/Os Compatible with ECLinPS or 100KH Devices
- SMA I/O Connectors
- Ready-to-Use 1.3 x 2.9 x 2.2-in. Module includes a ± 8.5 V AC/DC Adapter



PRL-435N Differential NECL Input AND Gate

DESCRIPTION

The PRL-435N is a high-speed Differential NECL Input AND Gate module, intended for applications in the GHz frequency range. It can be used for gating clocks and triggers, or for generating narrow pulses by applying two differential signals with small different delays to its inputs. As an example, a pulse as narrow as 600 ps can be generated when the PRL-435N is driven by un-equal length cables. Using AC coupling, the PRL-435N can also receive GHz sine wave, LVPECL, or PECL signals.

Complementary outputs of the PRL-435N, with internal pull down resistors, can drive either 50 Ω loads terminated into -2 V, or AC coupled 50 Ω loads.

The PRL-435N is housed in a 1.3 x 2.9 x 2.2-in. extruded aluminum enclosure and is supplied with a ± 8.5 V, 1.8 A AC/DC adapter.

Related products include:

- PRL-436N, 4 Input NECL Input OR Gate
- PRL-437N, 2:1 NECL Mux
- PRL-601T, 2 Input Programmable TTL Logic Gate

***SPECIFICATIONS (0° C ≤ T_A ≤ 35°C)**

SYMBOL	PARAMETER	Min	Typ	Max	UNIT	Comments
R _{in}	Input Resistance	49.5	50.0	50.5	Ω	
V _{TT}	Input Termination Voltage	-2.2	-2.0	-1.8	V	D input
I _{DC}	DC Input Current		-230	-250	MA	
V _{DC}	DC Input Voltage	-12.0	-8.5	-7.5	V	
V _{AC}	AC/DC Adaptor Input Voltage	103	115	127	V	
T _{PLH}	Propagation Delay to output ↑		1300	1500	Ps	
T _{PHL}	Propagation Delay to output ↓		1300	1500	Ps	
t _r	Rise Time (20%-80%)		400	600	Ps	Note (1)
t _f	Fall Time (20%-80%)		400	600	Ps	Note (1)
T _{SKEW}	Skew between any 2 outputs		60	120	Ps	
F _{MAX}	Max clock frequency	2.0	2.5		GHz	Note (2)
V _{CMR}	Common Mode Range	-2.7		-0.4	V	Note (3)
	Size (H x W x L)	1.3 x 2.9 x 2.2			in.	
	Weight				5	Oz
	Shipping Weight				4	lb

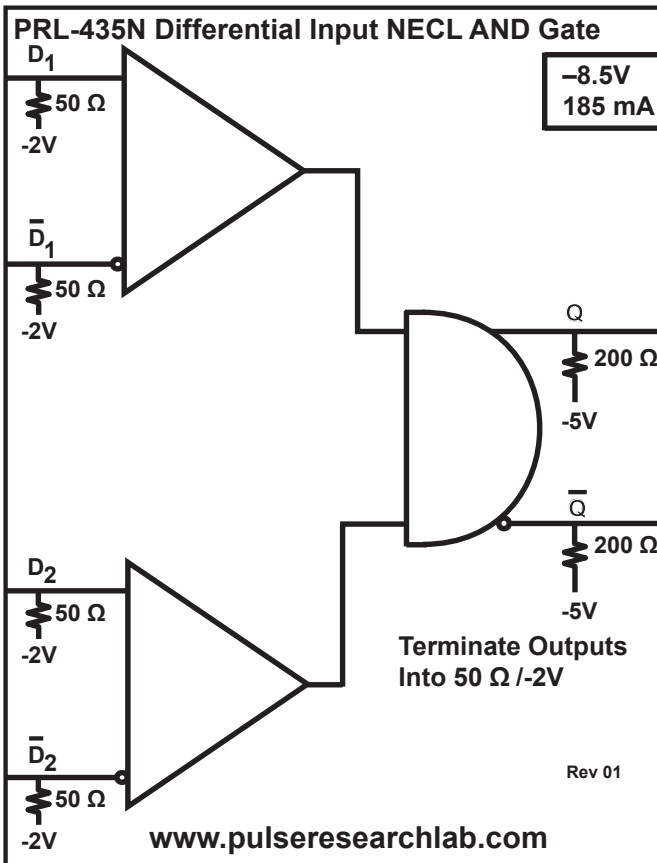


Fig. 1 PRL-435N Block Diagram

*All dynamic measurements are made with outputs terminated into 50Ω/-2V, using the PRL-550NQ5X, four channel NECL Terminators, connected to a 50Ω input sampling oscilloscope.

Notes:

- (1). The output rise and fall times are measured with its complementary output terminated into 50 Ω/-2 V. An unused complementary 50 Ω output must be either terminated into 50 Ω/-2 V or AC coupled into a 50 Ω load; otherwise, output waveform distortion and rise time degradation will occur. Use the PRL-550NQ5X, four channel NECL Terminator for the 50 Ω/-2 V termination and for connection of NECL signals to 50Ω input oscilloscopes.
- (2). f_{MAX} is measured using differential inputs only. The outputs are first divided by four, using the PRL-255N, and then measured using the PRL-550NQ5X, four channel NECL Terminator, connected to a sampling 'scope.
- (3). When the unit is driven by an AC coupled Sine wave signal in the differential input mode, the signal swing is symmetrical with respect to -2 V. The peak-to-peak swing of the input signal should not exceed these Common Mode limits.