

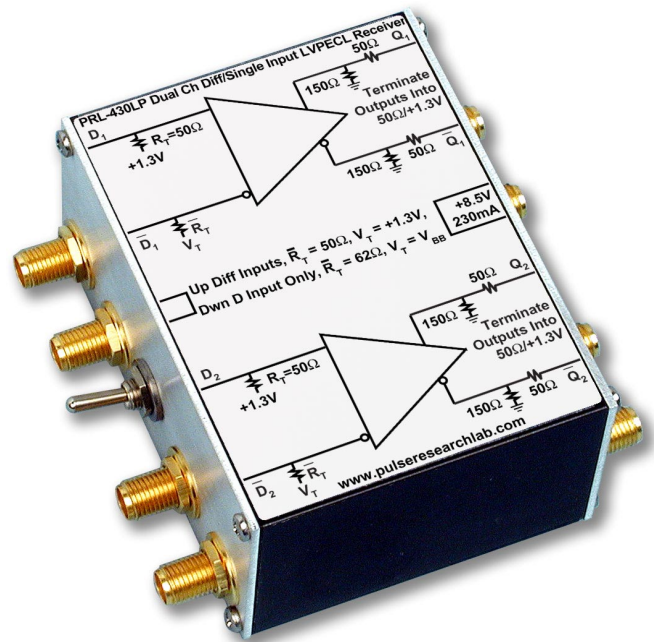
PRL-430LP DUAL CHANNEL DIFFERENTIAL LVPECL RECEIVER

APPLICATIONS

- Converts Single-ended Input Signals into Differential Signals for driving long lines
- Ideal for receiving Differential Signals from Long Lines
- Converts GHz Sine Wave Signals into Differential LVPECL Signals
- An Essential Lab Tool for Working with GHz LVPECL Circuits

FEATURES

- 3 GHz f_{MAX}
- Single-ended or Differential Inputs
Internal 50 Ω/V_{TT} Input Terminations also accept Sinewave or AC coupled Signals
- V_{TT} equals $+1.3$ V for LVPECL
- Complementary Outputs drive 50 Ω loads terminated to V_{TT} or AC coupled 50 Ω loads
- DC Coupled I/O's Compatible with ECLinPS or 10KH 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-430LP Differential LVPECL Receiver

DESCRIPTION

The PRL-430LP is a dual channel, differential or single-ended input LVPECL receiver module with complementary outputs. It is intended for converting single-ended signals, including GHz sine waves, into differential LVPECL signals for driving long lines and for receiving differential signals from long lines.

A switch selects either single-ended or differential inputs, as shown in Fig. 1A. In the differential input mode, both inputs D and \bar{D} are terminated internally into 50 Ω/V_{TT} , where V_{TT} is equal to +1.3 V for LVPECL. In the differential input mode, therefore, either one or both inputs can accept AC coupled signals as well. In the single input mode, signals should be connected to the D inputs only. The \bar{D} inputs are switched internally to V_{BB} , nominally +2.0 V for LVPECL, and termination resistors \bar{R}_T 's for the \bar{D} input channels are changed to 62 Ω . Complementary outputs of both models are designed for driving 50 Ω loads terminated into V_{TT} or AC coupled 50 Ω loads

The PRL-430LP complementary outputs must be used together for driving differential LVPECL inputs only, because the reduced output logic swing of 400 mVp-p, due to short circuit protection reasons, is not logic level compatible with a single-ended LVPECL input.

The PRL-430LP is housed in a 1.3 x 2.9 x 2.2-in. extruded aluminum enclosure and is supplied with a ± 8.5 V AC/DC Adapter. If mounting is desired, a pair of 35001420 mounting brackets can accommodate two PRL modules of the same length. A number of PRL modules can also share a single ± 8.5 V AC/DC adaptor using the PRL-730 or PRL-746 voltage distribution module. Please see the Accessories Section for more detail.



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SPECIFICATIONS* ($0^{\circ}\text{C} \leq T_A \leq 35^{\circ}\text{C}$)

Symbol	Parameter	PRL-430LP			Unit	Notes
		Min	Typ	Max		
R_{in}	Input Resistance	49.5	50	50.5	Ω	
V_{TT}	D Input Termination Voltage (fixed)	1.18	1.3	1.43	V	
V_T	\bar{D} Input Termination Voltage (variable)	1.18/ 1.8	1.3/ 2.0	1.43/ 2.2	V	
V_{IL}	Input Lo Voltage	1.35	1.48	1.67	V	
V_{IH}	Input Hi Voltage	2.08	2.28	2.42	V	
V_{OL}	Output Lo Voltage	1.35	1.48	1.61	V	
V_{OH}	Output Hi Voltage	2.15	2.28	2.51	V	
I_{DC}	DC Input Current		215	230	mA	
V_{DC}	DC Input Voltage	7.5	8.5	12	V	
V_{AC}	AC/DC Adapter Input Voltage	103	115	127	V	
TPLH	Propagation Delay to output \uparrow		750	950	ps	
TPHL	Propagation Delay to output \downarrow		750	950	ps	
t_r/t_f	Rise/Fall Times (20%-80%)		220	300	ps	Note (1)
tSKEW	Skew between Q & \bar{Q} outputs		20	75	ps	
f_{MAX}	Max clock frequency	2.5	3		GHz	Note (2)
V_{CMR}	Common Mode Range	2		3.3	V	
	Size	1.3 x 2.9 x 2.2			in.	
	Weight	5			Oz	

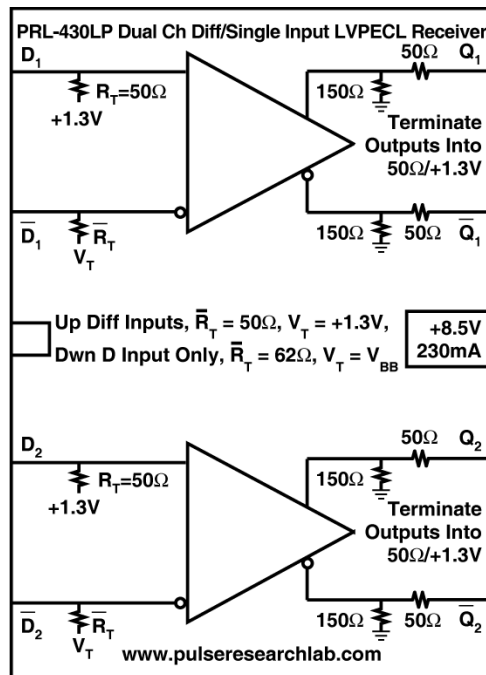


Fig. 1 PRL-430LP Block Diagram

Notes:

(1). The output rise and fall times are measured with both the Q and \bar{Q} outputs terminated into $50\Omega/V_{TT}$. An unused complementary output must be either terminated into $50\Omega/V_{TT}$ or AC coupled into a 50Ω load. Otherwise, output waveform distortion and rise time degradation will occur. Use the PRL-550LPQ4X four channel LVPECL Terminator for the $50\Omega/V_{TT}$ termination and for connection of LVPECL signals to 50Ω input oscilloscopes.

(2). f_{MAX} is measured by inputting either a sinewave or a pair of complementary signals using the differential input mode (switch up). The complementary outputs of either unit are divided by four using the PRL-255N in cascade (AC-coupled), and then the outputs of the PRL-255N are measured using the PRL-550NQ4X, four channel NECL Terminator, connected to a sampling 'scope.

*All measurements are made with outputs terminated into $50\Omega/V_{TT}$, using the PRL-550LPQ4X, four-channel LVPECL Terminator, connected to a 50Ω input sampling oscilloscope.