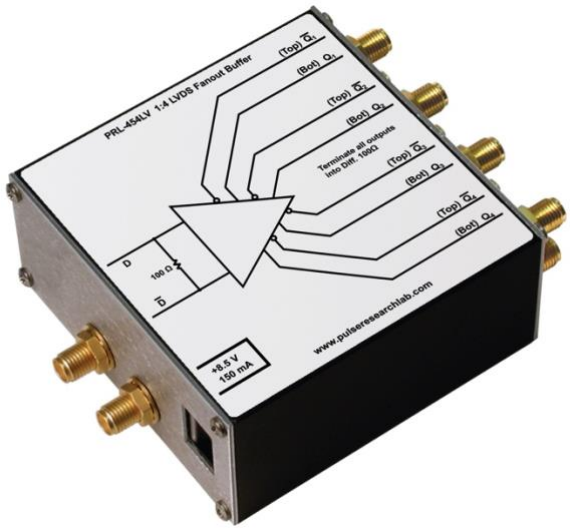
PRL-454LV, 1:4 LVDS FANOUT BUFFER AND LINE DRIVER

APPLICATIONS

- 1:4 LVDS Fanout Buffer and Line Driver
- Clock Distribution
- Converting Universal Differential Signals, LVPECL*, and RS422 Inputs to LVDS Outputs
- High Speed Digital Communications Systems Testing
- Satellite Telemetry/Ground Station System Integration

FEATURES

- f_{MAX} 350 MHz, typical
- Floating 100 Ω Universal Differential Input Accepts LVDS, LVPECL*, or RS422 Signals
- 250 mV_{PP} minimum Differential Input Swing
- 2.7 ns Propagation Delay, typical
- 4 Pairs of Complementary LVDS Outputs
- 300 ps Channel to Channel Skew, typical
- SMA I/O Connectors
- Operates from single +7.5 to +12 VDC power supply with only 150 mA max.
- Self-contained 1.3 x 2.9 x 2.9-in. unit includes ±9.0 V/2.0 A AC/DC Adapter



PRL-454LV-SMA

DESCRIPTION

The PRL-454LV-SMA is a 1:4 LVDS fanout buffer and line driver. The floating 100 Ω universal differential input will receive LVDS, LVPECL*, or RS422 inputs with at least 250 mV_{PP} differential input swing. Therefore the PRL-454LV-SMA can also be used to translate many different differential signal types to LVDS.

The four pairs of complementary outputs are designed for driving floating 100 Ω loads, normally the configuration used in LVDS input circuits. The differential output swing is typically 300 mV with a common mode voltage of 1.2 V. All I/O connectors are SMA.

The simple power supply requirements, +7.5 to +12 VDC/150 mA, allow the PRL-454LV to be used in many low power, portable applications in the field as well as in the lab.

The PRL-454LV-SMA is supplied with a ±9.0 V/2.0 A AC/DC adapter and housed in a 1.3 x 2.9 x 2.9-in. extruded aluminum enclosure. The PRL-454LV-SMA may also be ordered without the power supply as part number PRL-454LV-SMA-OEM. A maximum of four units can share the included PRL-760E AC/DC adapter using additional units of cable #88000102-4. If mounting is desired, a pair of the #35001420 mounting brackets can accommodate any two PRL modules of the same length. Please refer to the Accessories section of www.pulseresearchlab.com for more detail.

*LVPECL drivers must have internal pull-down resistors to drive the floating load of the PRL-454LV. For translating LVPECL signals that lack internal pull-downs, use PRL-426LP, 2 Ch. LVPECL to LVDS Translator, with V_{TT}/1.3 V LVPECL input terminations.

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*SPECIFICATIONS (0° C ≤ T_A ≤ 35° C)

Unless otherwise specified, dynamic measurements are made with all outputs terminated into floating 100 Ω, with the signals measured via the PRL-860D-SMA Inline Signal Monitor.

SYMBOL	PARAMETER	Min	Typ	Max	UNIT
R_{IN}	Differential Input Resistance	99	100	101	Ω
R_{INC}	Common Mode Input Resistance		5k		Ω
R_{OUT}	Output Resistance (Current source)		NA		Ω
V_{INPP}	Differential Vin p-p	0.25		3.30	V
V_{OPP}	Differential Vo p-p		300		mV
V_{OL}	Output Low Level		1.05		V
V_{OH}	Output High Level		1.35		V
V_{CMO}	Output Common mode voltage[1]		1.20		
I_{DC}	DC Input Current		85	150	mA
V_{DC}	DC Input Voltage	7.5	8.5	12.0	V
V_{AC120}	AC/DC Adapter Input Voltage, 120	103	115	127	V
V_{AC220}	AC/DC Adapter Input Voltage, 220	206	220	254	V
t_{PLH}	Propagation Delay to output ↑		2.7		ns
t_{PHL}	Propagation Delay to output ↓		2.7		ns
t_r/t_f	Rise/Fall Times (10%-90%)[2]		850	1500	ps
t_{SKEW}	Skew between any 2 outputs		300	550	ps
f_{MAX}	Max Clock Frequency[3]	250	350		MHz
	Size	1.3 x 2.9 x 2.9			in.
	Weight	5			Oz
	Shipping Weight	3			lb

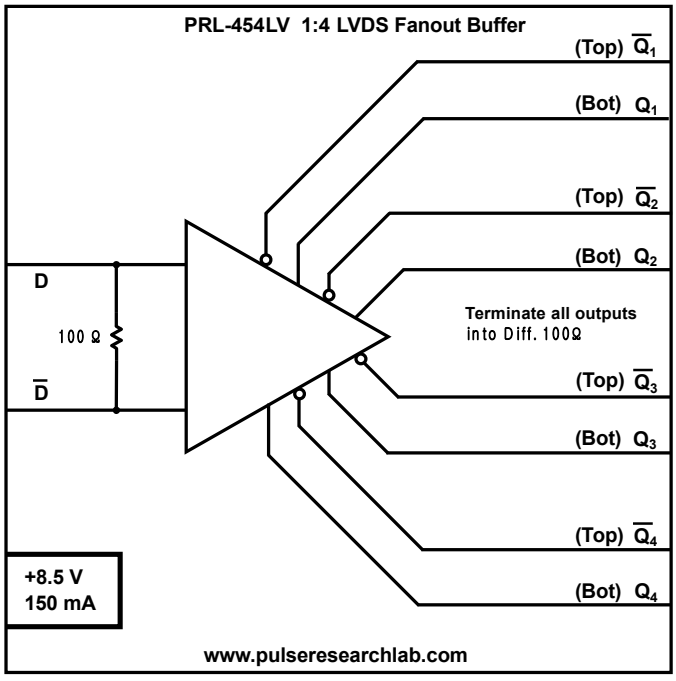


Fig. 1: PRL-454LV-SMA Block Diagram

Notes:

1. $V_{CMO} = (V_{OH}+V_{OL})/2$
2. Rise and Fall times are measured using a PRL-425NCML LVDS receiver and a PRL-860D-SMA inline signal monitor
3. f_{max} is measured using the PRL-177A-500 as the driver and the PRL-425NCML as the as the receiver. The PRL-177A outputs, which are connected to the DUT inputs, are routed through the PRL-860D-SMA for measurement on the oscilloscope.

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