

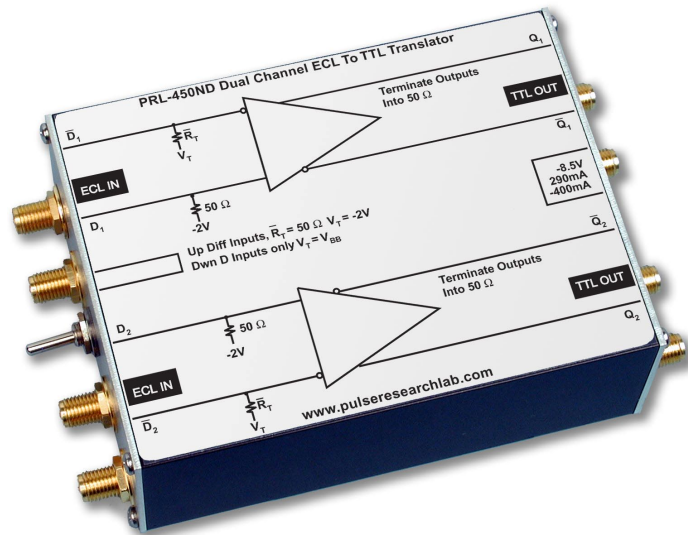
# PRL-450ND DUAL CHANNEL NECL TO TTL TRANSLATOR PRL-450PD DUAL CHANNEL PECL TO TTL TRANSLATOR

## APPLICATIONS

- Converting Single Ended or Differential NECL/PECL Signals to TTL Signals
- High Speed Digital Communications systems Testing
- High Speed SONET Clock Level Translation

## FEATURES

- $f_{\max} > 300$  MHz
- 1.1 ns Typical Output Rise & Fall Times
- 50  $\Omega$ /-2 V Input for NECL and 50  $\Omega$ /3 V for PECL
- Single Ended or Differential Inputs
- Complementary 50  $\Omega$  TTL Level Outputs
- SMA I/O Connectors
- Self-contained 1.3 x 2.9 x 3.9-in. units including AC/DC Adapters



**PRL-450ND**

## DESCRIPTION

The PRL-450ND and PRL-450PD are, respectively, dual channel NECL and PECL to TTL Logic Level Translators. Each unit can receive either single ended or differential input signals, to be selected by a switch. The outputs of these translators have 50  $\Omega$  back terminations, and, therefore, they drive 50  $\Omega$  terminated or unterminated lines. These high-speed translators facilitate testing of high speed digital communications circuits, where conversion of NECL and PECL clock and data signals to TTL level signals is often required.

The PRL-450ND is designed to interface with NECL circuits operating with a -5.2 V or -4.5 V supply, and The PRL-450PD is designed to interface with PECL circuits operating with a +5 V supply. In the differential input mode, both inputs D and  $\bar{D}$  of the PRL-450ND are terminated into 50  $\Omega$ /-2 V, and those of the PRL-450PD into 50  $\Omega$ /3 V. In this mode, 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 -1.3 V for the PRL-450ND and 3.7 V for the PRL-450PD, and termination resistors  $\bar{R}_T$ 's for the  $\bar{D}$  input channels are changed to 62  $\Omega$ .

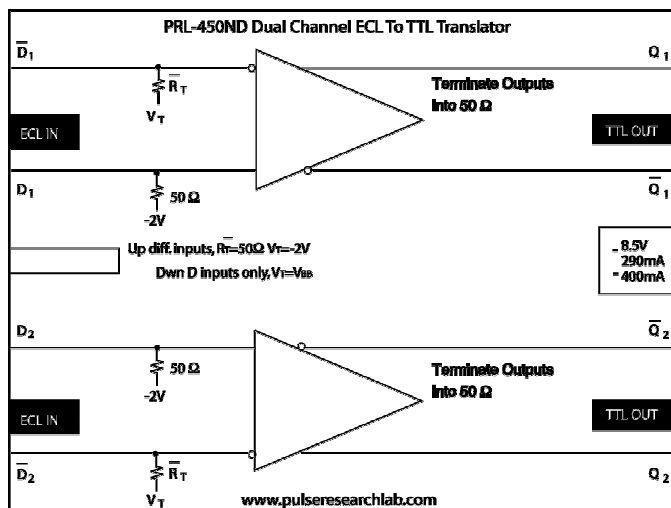
Each unit is supplied with a  $\pm 8.5$ V AC/DC Adaptor and housed in an attractive 1.3 x 2.9 x 3.9-in. extruded aluminum enclosure.

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  $\pm 8.5$ V AC/DC adaptor using the PRL-730 or PRL-736 voltage distribution module. Please see the Accessories Section for more detail.

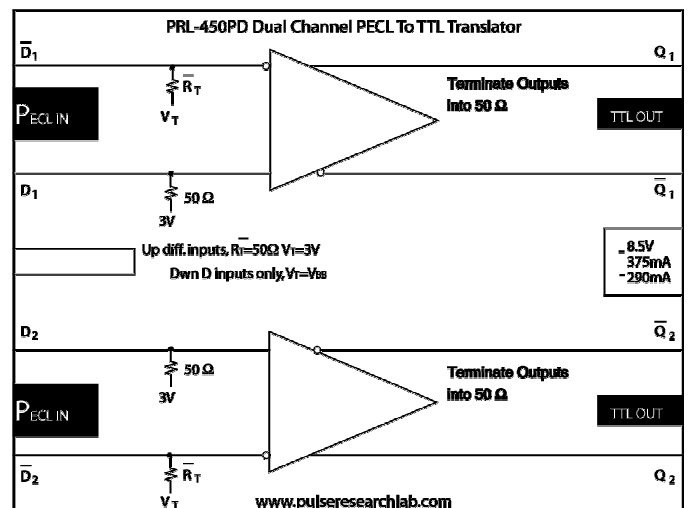
## SPECIFICATIONS ( $0^{\circ} \text{C} \leq T_A \leq 35^{\circ} \text{C}$ )

Unless otherwise specified, dynamic measurements are made with all outputs terminated into  $50 \Omega$ .

SYMBOL	PARAMETER	PRL-450ND			PRL-450PD			UNIT
		Min	Typ	Max	Min	Typ	Max	
$R_{in}$	Input Resistance	49.5	50	50.5	49.5	50	50.5	$\Omega$
$R_{out}$	Output Resistance	49.5	50	50.5	49.5	50	50.5	$\Omega$
$V_{TT}$	“D” Input Termination Voltage(fixed)	-2.2	-2	-1.8	2.7	3	3.3	V
$V_T$	“D” Input Termination Voltage(variable)	-1.17/ -2.2	-1.3/ -2	-1.43/ -1.8	3.33/ 2.7	3.7/ 3	4.07/ 3.3	V
$V_{OL}$	Output Low Level	-150	0	300	-150	0	300	mV
$V_{OH}$	Output High Level	2	2.2		2	2.2		V
$I_{DC}$	DC Input Current		280 -395	300 -415		360 -275	375 -290	mA
$V_{DC}$	DC Input Voltage	$\pm 7.5$	$\pm 8.5$	$\pm 12$	$\pm 7.5$	$\pm 8.5$	$\pm 12$	V
$V_{AC}$	AC/DC Adaptor Input Voltage	103	115	127	103	115	127	V
$t_{PLH}$	Propagation Delay to output $\uparrow$		2			2		ns
$t_{PHL}$	Propagation Delay to output $\downarrow$		2			2		ns
$t_r/t_f$	Rise/Fall Times(10%-90%)		1.1	1.25		1.1	1.25	ns
$t_{SKEW}$	Skew between any 2 outputs		200	500		200	500	ps
$f_{max}$	Max Clock Frequency	300	400		300	400		MHz
	Size	1.3x2.9x3.9			1.3x2.9x3.9			in.
	Weight	7			7			Oz



**Fig. 1A PRL-450ND**  
Dual Channel NECL to TTL Translator



**Fig. 1B PRL-450PD**  
Dual Channel PECL to TTL Translator