

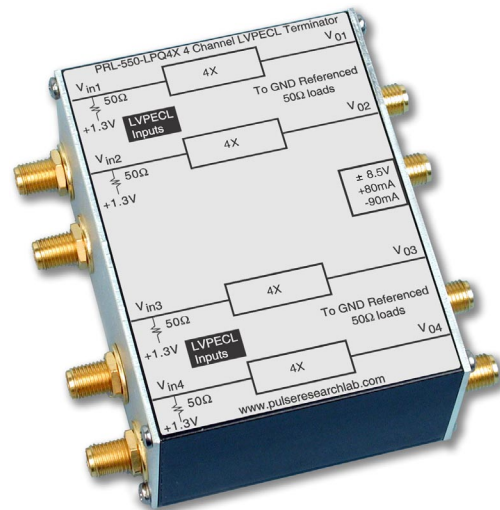
PRL-550LPQ4X FOUR CHANNEL LVPECL TERMINATOR

APPLICATIONS

- Allow direct connection of LVPECL signals to 50Ω input instruments
- Provide standard 50Ω/1.3V terminations for LVPECL signals and Ground Referenced Outputs
- Testing and monitoring GHz LVPECL signals in digital and wireless communication applications

FEATURES

- 43 ps Typical Rise Time (8 GHz bandwidth)
- 50Ω/1.3V Input Termination for LVPECL
- Ground Referenced Outputs protect sensitive instruments
- SMA I/O connectors
- 4X attenuation
- Self-contained 1.3 x 2.9 x 2.2-in. unit includes a ±8.5V AC/DC Adapter



PRL-550LPQ4X

INTRODUCTION

LVPECL logic levels are offset from ground. Without proper level shifting, these logic signals can not be connected to ground referenced 50Ω input instruments, such as sampling 'scopes, network analyzers, scanners and counters, etc. Otherwise, either the LVPECL equipment outputs or the measurement instrument inputs may be made inoperative or damaged.

When driving a length of 50Ω coaxial cable, an LVPECL output must be terminated into a 50Ω load that is connected to a terminating voltage $V_{TT} = V_{CC} - 2V$. For LVPCL circuits operating with a supply voltage of +3.3V, V_{TT} is equal to 1.3V.

An LVPECL Terminator is a level translator which converts LVPECL signals into signals that can be connected to ground referenced 50Ω input instruments and, at the same time, provide standard 50Ω/ V_{TT} terminations required by LVPECL signals.

DESCRIPTION

The PRL-550LPQ4X is a Four Channel LVPECL Terminator. It is designed to interface with LVPECL circuits operating with a +3.3V supply. Each input has an equivalent 50Ω resistor terminated to a voltage $V_{TT} = 1.3V$. The outputs of the PRL-550LPQ4X are designed for direct connection to ground referenced 50Ω input instruments as shown in Fig. 1. These near ground level output signals* protect sensitive instruments and enhance measurement accuracy when these instruments are used.

Once an LPECL signal is translated through a proper Terminator, it can be routed through 50Ω scanners and other high frequency measuring instruments for processing. The PRL-550LPQ4X Terminator is housed in an attractive 1.3 x 2.9 x 2.2-in. extruded aluminum enclosure and is supplied with a ±8.5V AC/DC Adaptor.

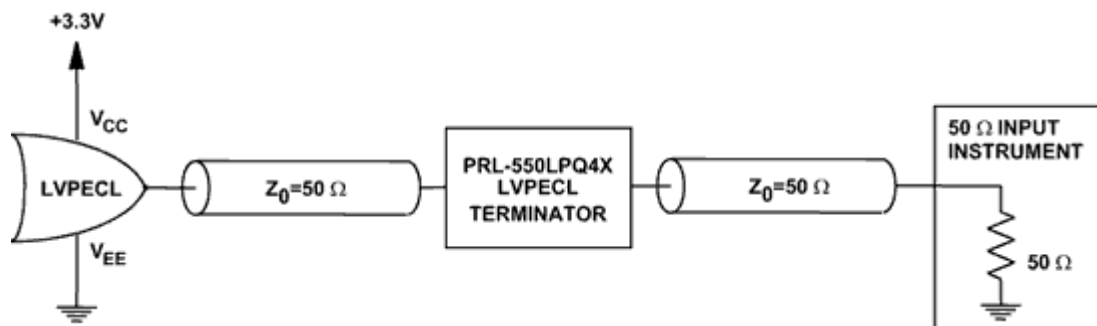
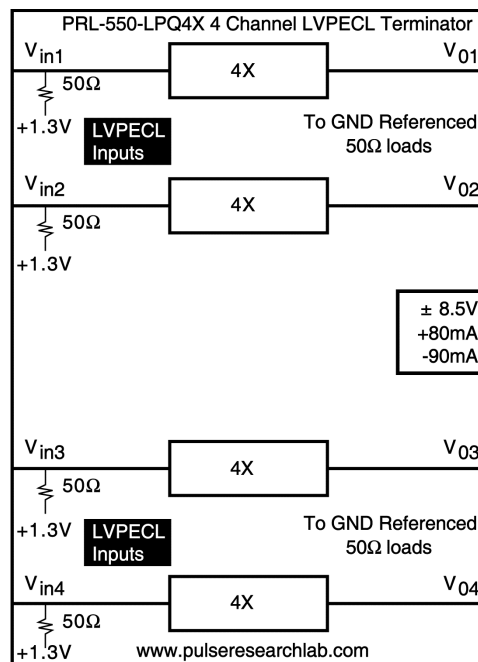


Fig. 1 LVPECL driving a 50 Ω input instrument using the PRL-550LPQ4X

SPECIFICATIONS (0° C ≤ T_A ≤ 35°C)

SYMBOL	PARAMETER	Min	Typ	Max	UNIT
R _{in}	Input Resistance	49.5	50	50.5	Ω
V _{TT}	Input Termination Voltage	1.23	1.3	1.36	V
V _{os}	Output Offset Voltage*	-100	0	100	mV
	Signal Attenuation	11.8	12(4X)	12.2	dB
I _{DC}	DC Input Current		+80, -125	+120,-150	mA
V _{DC}	DC Input Voltage	±7.5	±8.5	±10.5	V
V _{AC}	AC/DC Adaptor Input Voltage	103	115	127	V
t _{PLH}	Propagation Delay to output ↑		475	575	ps
t _{PHL}	Propagation Delay to output ↓		475	575	ps
t _r /t _f	Rise/Fall Times		43	61	ps
BW	Equivalent Bandwidth		8	5.7	GHz
t _{SKREW}	Skew between outputs		20	50	ps
	Cross Talk ↔ chs @ 2 GHz		38	34	dB
	Size		1.3x2.9x2.2		in.
	Weight		5		Oz



PRL-550LPQ4X Block Diagram

*The output offset and input termination voltages are factory set to 0V and V_{TT} = 1.3V, respectively, before the input is connected to an LVPECL device. When connected to an LVPECL device, the output low level will be slightly offset from ground depending on the low level output voltage of the connected device, which is typically V_{cc}-1.8V. When its input is connected to an LVPECL device, the Terminator output Low level is typically +50mV.