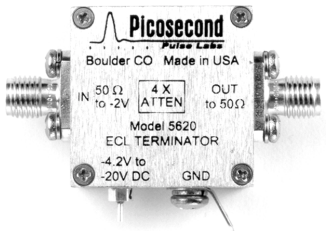
Model 5620 Series
ECL and PECL Terminators



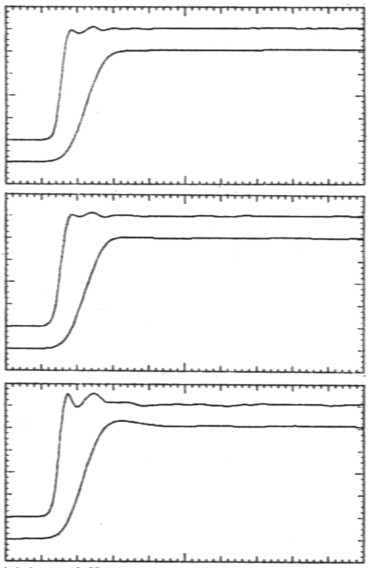
Signals from ECL logic ICs are specified to be terminated into 50 Ω returned to Vcc - 2V. Most test instrumentation, including high bandwidth digital sampling oscilloscopes have input impedances of 50 Ω to ground. Historically, this has caused problems for measuring ECL or PECL signals. The Model 5620 Series of ECL/PECL Terminators solves this problem. They are DC biased 50 Ω attenuators that provide the proper 50 Ω returned to Vtt, while at the same time delivering an attenuated and level shifted output signal to 50 Ω ground based instrumentation. The output levels are safe to apply directly to sampling oscilloscopes. These terminators have flat frequency responses up to 8 GHz and risetimes of < 25 ps. They are ideal for testing up to 4 GB/s ECL/PECL logic. All models require external DC voltage. The Models 5620 and 5622 contain an internal voltage regulator to provide the correct Vtt. Model 5623 does not contain a voltage regulator and its termination voltage, Vtt, is 0.82 * V(DC). The 5623 can be used for either ECL or PECL.

Model Number	5620-107	5622-107	5623-107
Signal Type	ECL -3.3 or -5.2 V	+3.3 V PECL	ECL or PECL
Input Impedance	50 Ω (±1.5%) to Termination Voltage, Vtt		
Vtt (± 2%)	-2.0 V, fixed	+1.3 V, fixed	adj. 0.82 * Vdc
Attenuation (±0.2 dB)	12 dB, 4 X	14 dB, 5 X	20 dB, 10 X
Risetime (10%-90%)	< 20 ps	25 ps	< 20 ps
Freq. Response	DC-10 GHz (± 1dB)	dc-8 GHz (±1 dB)	dc-8 GHz (±1.5 dB)
Input Return Loss	> 20 dB at 100 MHz to > 15 dB at 4 GHz		
Max. Input Range	0 V to -5.2 V	0 V to +3.3 V	± 5 V max.
DC Input Voltage	-4.2 V to -20 V	+3.0 V to +12 V	± 4.3 V max.
Connectors	SMA jacks (f), DC Input is solder pin feed-thru cap		
Dimensions/ Wt.	4.45 x 3.05 x 1.52 cm incl. connectors (1.75" x 1.2" x 0.6"). Case is 1" x 1" x 0.6", 1 oz.		
Warranty	One year – no warranty for damage due to exceeding DC or signal input limits		

Model 5620 ECL

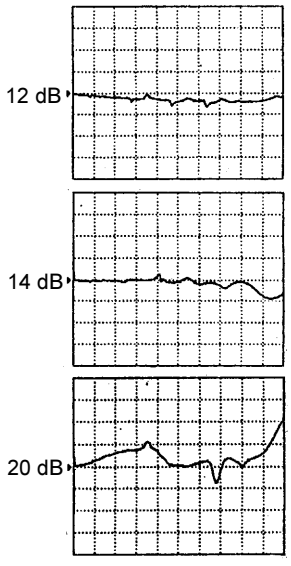
Model 5622 3.3 V PECL

Model 5623 ECL/PECL



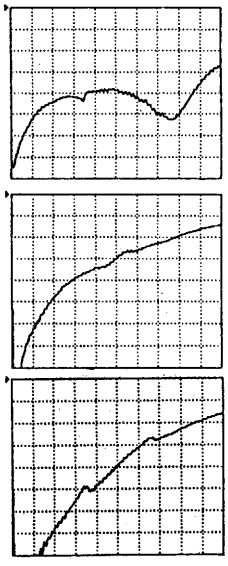
100 ps/div

Responses to 35 ps and 100 ps risetime inputs



1 dB/div and 1 GHz/div

Insertion Loss DC - 10 GHz



5 dB/div and 1 GHz/div

Return Loss DC - 10 GHz

Notes

[1] Parameters listed are typical values. Guaranteed only when max/min limits are given. **[2]** Step responses measured using an HP-54121A, 20 GHz oscilloscope. **[3]** Frequency responses measured using a Wiltron 37369A, 40 MHz - 40 GHz network analyzer.

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