Impulse Forming Networks

PSPL5208, PSPL5210

The PSPL5208 and PSPL5210 components are proprietary, passive Impulse Forming Networks (IFNs).

Product description

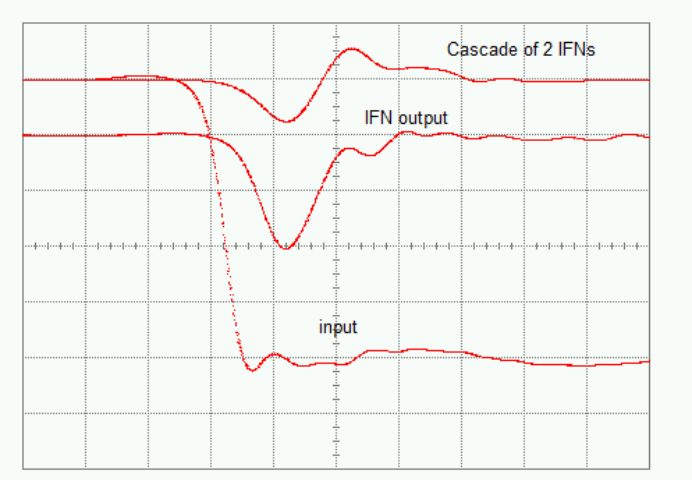
These PSPL5208 and PSPL5210 have the unique property of providing an output that is approximately the derivative of the input waveform while also maintaining an excellent impedance match on all ports.

$V(out) \approx Tc * dV(in) / dt$

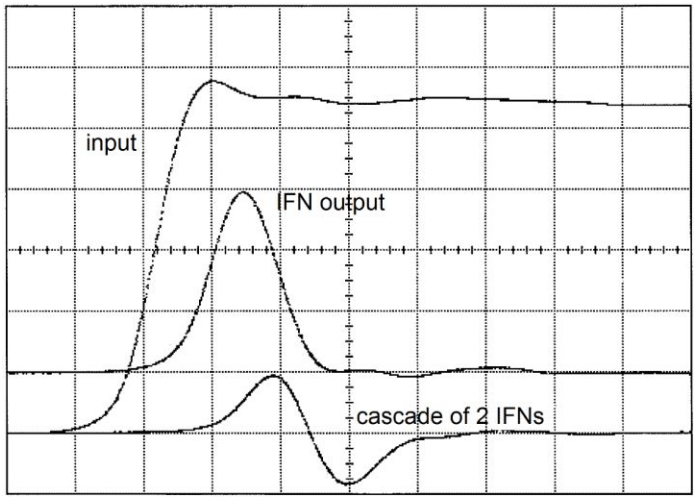
Where Tc is the derivative time coefficient. When driven by a step, the output is an impulse. When driven by an impulse, the output is a monocycle. The models are optimized for use with different input rise times. A third IFN port is labeled “DC” and terminated in 50 Ω. A DC baseline offset, bias voltage, and/or a slower rise time, pedestal pulse may be connected to this DC port.

Typical performance

The following figure shows the PSPL5208 IFN at 20 ps/div. 5.10 V, 11.3 ps Step Input: 2 V, 50 ps Impulse and 1.3 V ptp, 13 GHz Monocycle inputs.



The following figure shows the PSPL5210 IFN at 50 ps/div. 10 V, 45 ps Step Input: 2.7 V, 50 ps Impulse and 1.7 V ptp, 6.5 GHz Monocycle inputs.



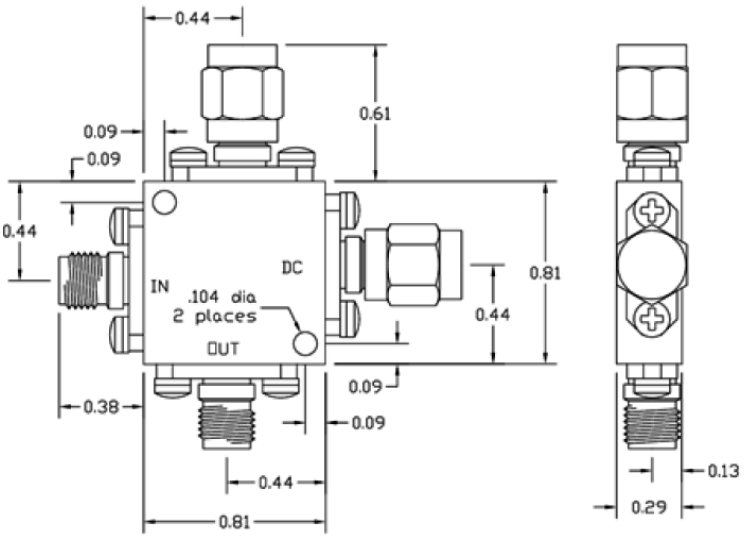
Specifications

Parameter [1]	PSPL5208	PSPL5210
Tc, derivative coefficient	8 ps	13 ps
Mininimum recommended input rise time	15 ps	25 ps
Impedance	50 Ω, ±2 Ω (DC)	
Reflection coefficient (35 ps TDR)	-6%, t < 200 ps	-3%, t < 200 ps
Max CW input power	½ Watt	
Connectors	2.9 mm jacks (f)	SMA jacks (f)
Warranty	One year	

1 All parameters listed are typical unless max/min guaranteed limits are provided.

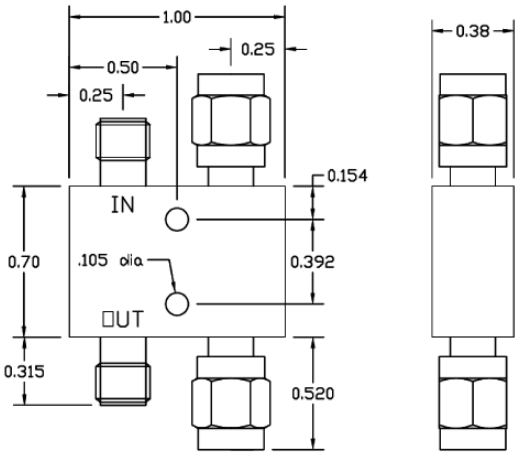
Mechanical dimensions

PSPL5208



Connectors are 2.92mm female

PSPL5210



Connectors are SMA female

Ordering information

Models

PSPL5208	Impulse Forming Network
PSPL5210	Impulse Forming Network

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