

Impulse Forming Networks

PSPL5208, PSPL5210 Datasheet



These components are proprietary, passive Impulse Forming Networks (IFNs). They 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.

$$V(\text{out}) \approx T_c * dV(\text{in}) / dt$$

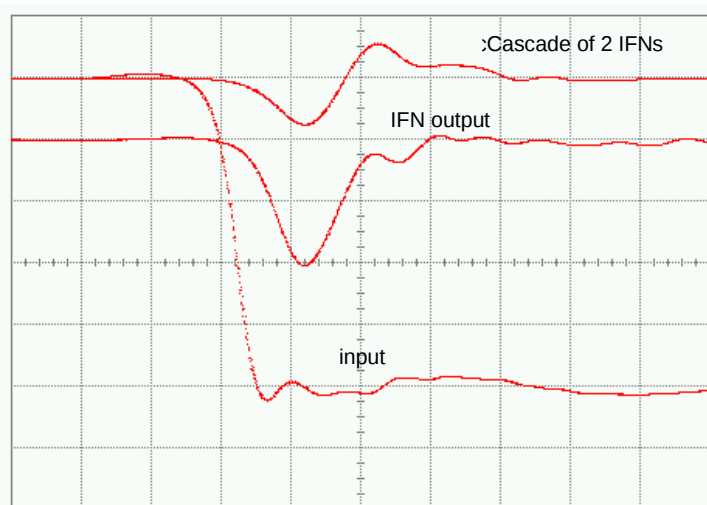
Where T_c is the derivative time coefficient. When driven by a step, the output is an impulse. When driven by an impulse, the output is a monocycle. The various models are optimized for use with different input risetimes. A third IFN port is labeled “DC” and terminated in 50 Ω . A DC baseline offset,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

Specifications

Parameter	PSPL5208	PSPL5210
T_c , Derivative Coefficient	8 ps	13 ps
Min.Recommended Input Risettime [1]	15 ps	25 ps
Impedance	50 Ω , $\pm 2 \Omega$ (DC), all models	
Reflection Coefficient (35 ps TDR)	-6%, $t < 200$ ps	-3%, $t < 200$ ps
Max CW Input Power	$\frac{1}{2}$ Watt, all models	
Connectors	2.9 mm	
Warranty	One year	

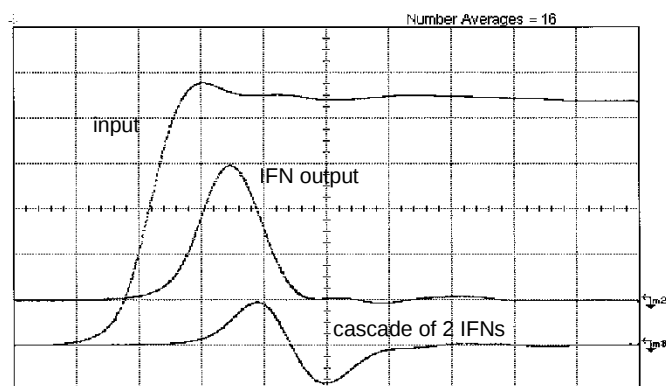
Note: All parameters listed are typical unless max/min guaranteed limits are provided.

Typical Performance



PSPL5208 IFN, 20 ps/div

5.10 V, 11.3 ps Step Input, 2 V, 20 ps Impulse and 1.3 V ptp, 13 GHz Monocycle Outputs



5210 IFN, 50 ps/div

10 V, 45 ps Step Input from PSPL 10,050A Pulse Gen.

Ordering information

Model	Description
PSPL5208	Impulse Forming Network, 8 ps
PSPL5210	Impulse Forming Network, 13 ps

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