

# PICOTEST

## J2100A 1Hz-5MHz Injection Transformer



## J2101A 10Hz-45MHz Injection Transformer



Product specifications are subject to change without notice.

Picotest offers two different injection transformers specially optimized for different applications. Both are constructed with materials that are superior to most other injection transformers, resulting in greatly improved bandwidth, durability, and overall performance. The usable bandwidth of the Picotest injection transformers is greater than the 3dB frequency limits.

An injection transformer is a special transformer that is connected between a network analyzer and a DC-DC converter or voltage regulator in order to inject a perturbing signal into the control loop and is primarily used for control loop stability measurements. In order to accomplish this with a high degree of fidelity, the transformer is isolated and, therefore, capable of floating on a high voltage line seen in many circuits such as a Power Factor Corrector (PFC), which can be on the order of 400VDC.

### KEY FEATURES:

#### J2100A 1Hz-5MHz Injection Transformer

- 1Hz - supports PFC regulators
- 5MHz - high enough for most power supplies and regulators
- 23 Octave range
- Low distortion for superior precision
- 5 ohm termination for minimum impact to the loop
- Includes attenuation to assure small signal measurement

The injection transformer is employed in the following manner: The output of a network analyzer, an oscillating signal of small amplitude and varying frequency, stimulates the voltage regulator's control loop via the transformer. The circuit response is monitored on either side of the transformer via the CH1 and CH2 connections. This effectively breaks the regulator's control loop allowing the analyzer to generate the magnitude and phase of the loop, i.e.  $V_{out}/V_{in}$ . The undistorted transmission of these signals, their levels and the proper setup and connection of the circuit are paramount to a successful and valid result.

Many incorrectly believe that the transformer is a non-critical element and that the bandwidth is unimportant since the transformer is outside of the measurement. This could not be farther from the truth. A quality injection transformer is a vital part of your stability test setup.

### KEY FEATURES:

#### J2101A 10Hz-45MHz Injection Transformer

- 10Hz - supports off-line power supplies
- 45MHz - high enough for even state of the art regulators
- 23 Octave range
- Low distortion for superior precision
- 5 ohm termination for minimum impact to the loop
- Includes attenuation to assure small signal measurement

*Accessories to Sharpen Your Analyzer's Focus*

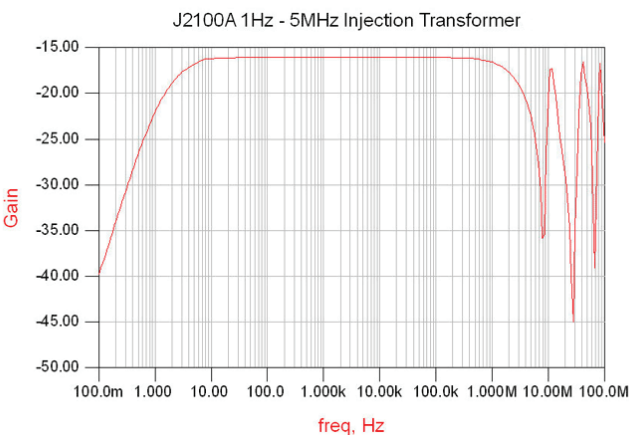
## J2100A 1Hz-5MHz Injection Transformer



Performance at -10dBm input level		
Characteristics:	Rating:	Conditions:
DCR		25 degC
Ratio	1:1	
Termination Impedance	5 Ohms	
Nominal 3dB Bandwidth	1Hz-5 MHz	10mHz~100Hz, 10Hz~100MHz
Isolation Voltage	600V / CATII	3kVrms/1min
Isolation Capacitance	390pF	1kHz
DC Current	10mA	DC current at which inductance (@1kHz) drops 10% (typ) from its value without current
Temperature Range	0 - 50C	
Maximum Altitude	6000 Ft	

Mechanical characteristics	
Dimensions	109.22 x 89.66 x 50.80 mm 4.30" x 3.53" x 2.00"
Weight	0.225 kg / 0.496 lbs

Connectors	
Input	BNC socket
Output	Banana



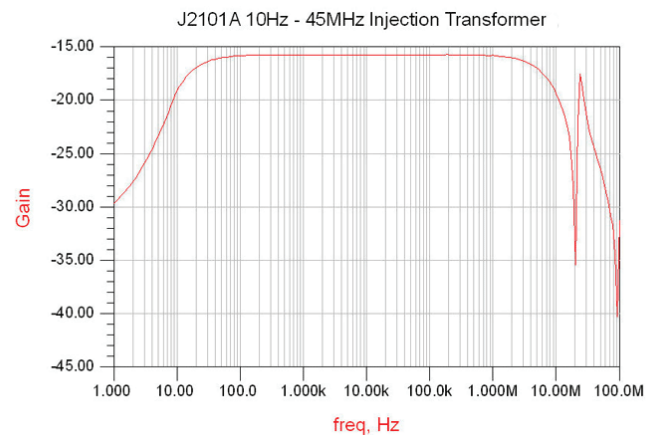
## J2101A 10Hz-45MHz Injection Transformer



Performance at -10dBm input level		
Characteristics:	Rating:	Conditions:
DCR		25 degC
Ratio	1:1	
Termination Impedance	5 Ohms	
Nominal 3dB Bandwidth	10Hz-45 MHz	100mHz~100Hz, 10Hz~500MHz
Isolation Voltage	600V / CATII	3kVrms/1min
Isolation Capacitance	150pF	1kHz
DC Current	10mA	DC current at which inductance (@1kHz) drops 10% (typ) from its value without current
Temperature Range	0 - 50C	
Maximum Altitude	6000 Ft	

Mechanical characteristics	
Dimensions	109.22 x 89.66 x 50.80 mm 4.30" x 3.53" x 2.00"
Weight	0.225 kg / 0.496 lbs

Connectors	
Input	BNC socket
Output	Banana



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Need more information:  
[sales@picotest.com.tw](mailto:sales@picotest.com.tw)  
[www.picotest.com.tw](http://www.picotest.com.tw)