

# Injection Transformer

## 1 Introduction

The TBJT02 is a wideband injection transformer for control loop stability measurements. It provides galvanic isolation between the swept signal source and the control loop. The injection transformer is internally terminated with a 5 Ohm resistor and protected with a 100 mA fuse. The usable frequency range is 1 Hz to 7 MHz.



Picture 1: TBJT02 injection transformer

## 2 Specification

Compliance:	RoHS
Termination resistor:	5 $\Omega$
Fuse:	100 mA (Littlefuse 0451.100MRL); secondary (output) side
Turns ratio:	1:1
Characterized freq. range:	1 Hz to 100 MHz
Usable frequency range:	1 Hz – 7 MHz
3 dB frequency range:	2 Hz – 3 MHz typ.
Insertion loss (S21):	16 dB typ.
Capacitance:	310 pF @ 1 KHz; primary to secondary winding
DC saturation current:	12 mA
Max. voltage rating:	600V CAT II; primary to secondary winding
Input connector:	50 $\Omega$ BNC female,
Output connector:	4 mm safety banana jacks, 20 mm spacing
Operating temp. range:	0°C – 60°C
Enclosure dimensions:	70 mm x 60 mm x 140 mm
Weight:	300 g

# Injection Transformer

## 3 Frequency response

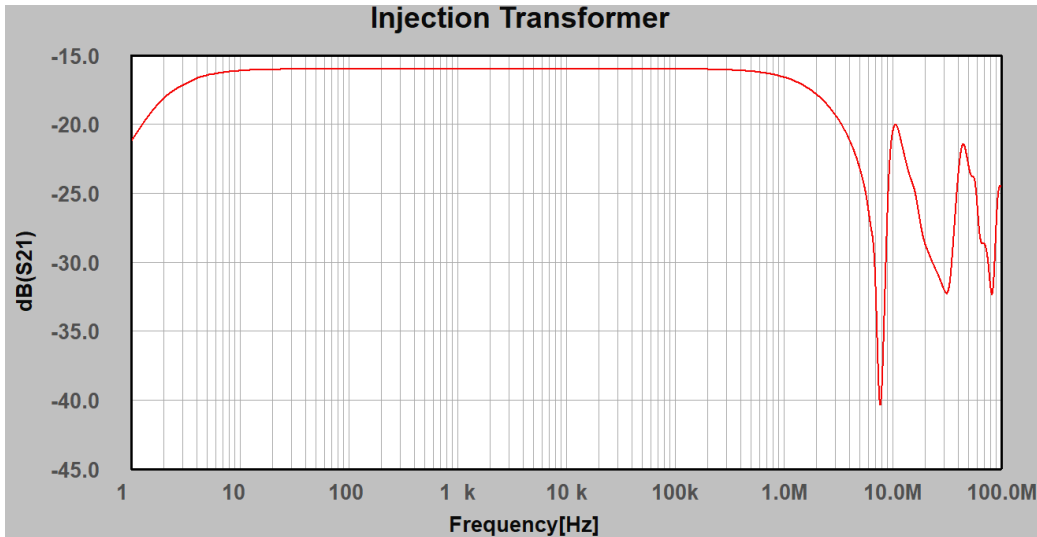
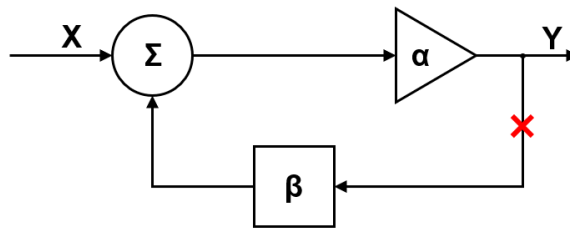


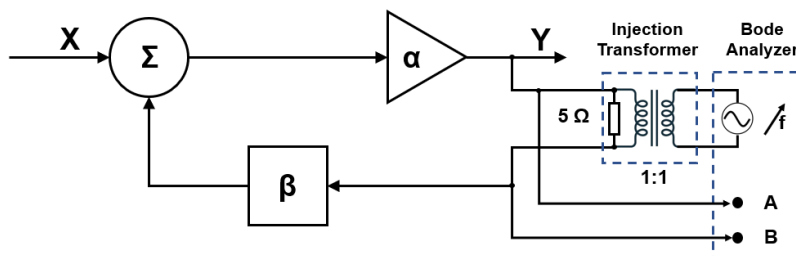
Figure 1: typical insertion loss

## 4 Application

The control loop is commonly broken at the point between the amplifier output and the input of the feedback network:



The isolation transformer is inserted into the control loop and connected to the Bode-Analyzer:



## Injection Transformer

### 5 Ordering Information

Part Number	Description
TBJT02	1 Hz – 5 MHz injection transformer

### 6 History

Version	Date	Author	Changes
V 1.0	18.2.2023	Mayerhofer	Creation

[www.tekbox.com](http://www.tekbox.com)

**TekBox Digital Solutions Vietnam Pte. Ltd.**

Factory 4, F4, Lot I-3B-1, Saigon Hi-Tech Park, Tan Phu Ward, District 9, Ho Chi Minh City, Vietnam