

# Injection Transformer

## 1 Introduction

The TBJT01 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 10 Hz to 45 MHz.



Picture 1: TBJT01 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:    | 10 Hz – 45 MHz   |
| 3 dB frequency range:      | 15 Hz – 9 MHz typ.                                       |
| Insertion loss (S21):      | 15.5 dB typ.   |
| Capacitance:               | 90 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:                    | 250 g  |

Sales Partner:



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## 3 Frequency response

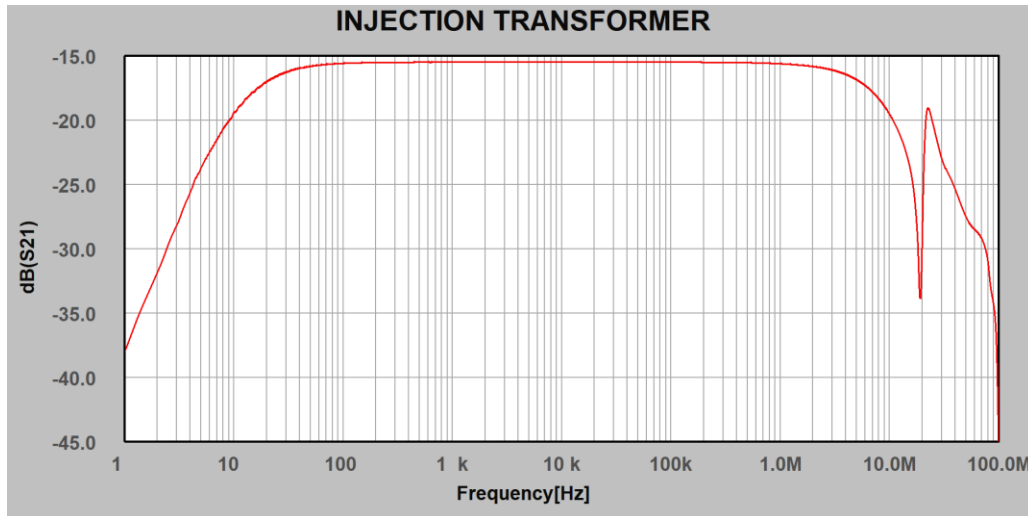
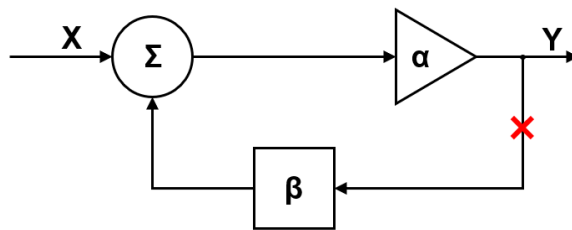


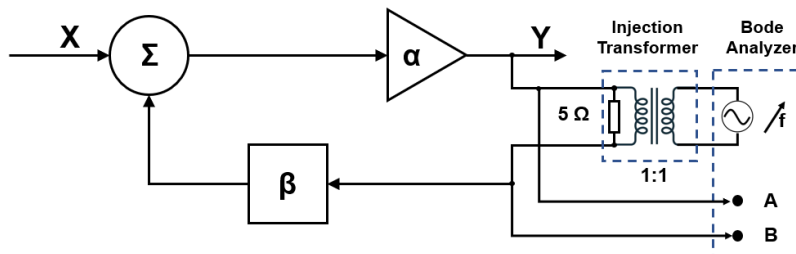
Figure 1: typical insertion loss

## 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:



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## 5 Ordering Information

| Part Number | Description                          |
|-------------|--------------------------------------|
| TBJT01      | 10 Hz – 45 MHz injection transformer |

## 6 History

| Version | Date     | Author     | Changes  |
|---------|----------|------------|----------|
| V 1.0   | 6.2.2023 | Mayerhofer | Creation |
|         |          |            |          |

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