

HIGH FREQUENCY MAGNETICS

Surface Mount Wideband Signal Splitter

- Surface-mount, equal-ratio 3-port hybrid transformer designed for both analog and digital applications requiring signal splitting or combining
- Extremely wide frequency response
- Very fast rise time
- Operating temperature range -40°C to $+85^{\circ}\text{C}$
- Meets IEC 695, 2-2 flammability requirements
- PWB Process Capability: standard printed wiring board assembly techniques, total-immersion cleaning
- Reliability testing: shock, vibration, temperature cycling, temperature - humidity - bias
- Tape and reel packaging: 24 mm wide by 16 mm pitch; 13 inch OD, 4 inch ID; 350 transformers per reel, max Meets ANSI/EIA 481-2 Carrier Tape Standards for JEDEC SO package

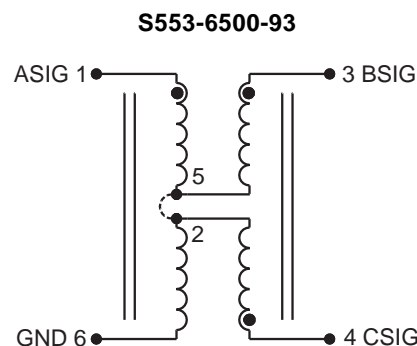
ELECTRICAL SPECIFICATIONS at 25°C

Part Number	Impedance Ratio	Nominal Signal Split dB	3dB Bandwidth typ	Pulse Rise Time ns typ
		(1-6) : (3-6) + (4-6)	(1-6) to (3-6) (1-6) to (4-6)	(1-6) to (3-6) (1-6) to (4-6)
S553-6500-93	$75\Omega : 75\Omega + 75\Omega$	3.0	20 kHz - 800 MHz	0.5

Return Loss (RL) typ			Transhybrid Loss (THL) typ		
Port	RL>20 db	RL>30 db	Port	THL>20 db	THL>30 db
A	100 kHz - 500 MHz	400 kHz - 200 MHz	B to C	100 kHz - 800 MHz	300 kHz - 500 MHz
B	200 kHz - 500 MHz	2 MHz - 300 MHz			
C	200 kHz - 500 MHz	2 MHz - 300 MHz			

Port A = ASIG to GND
 Port B = BSIG to GND
 Port C = CSIG to GND

SCHEMATIC

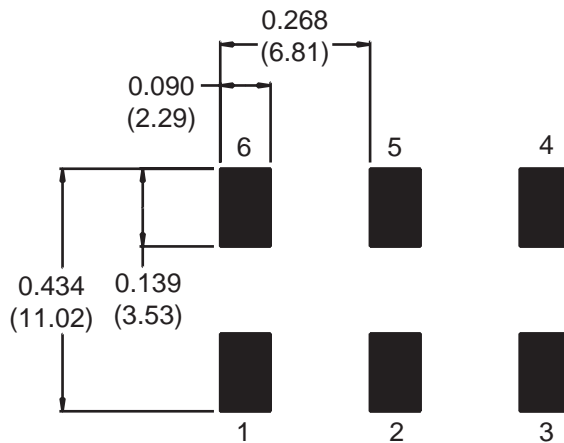
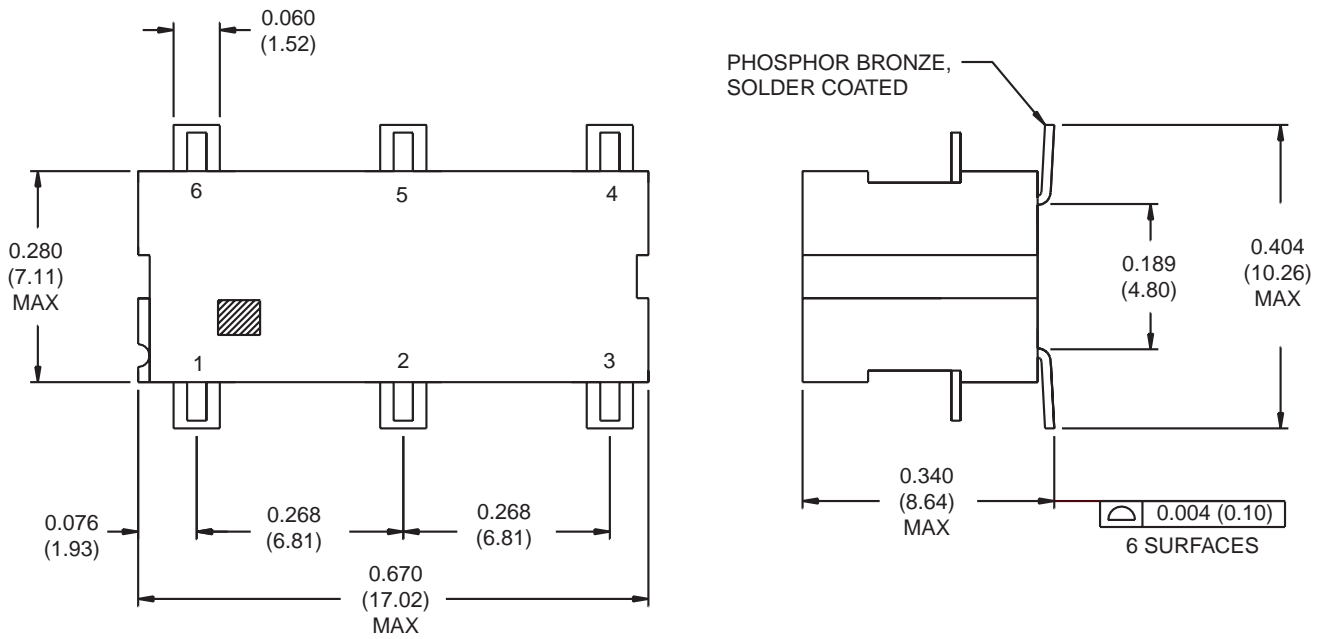


©2000 Bel Fuse Inc. Specifications subject to change without notice. 09.00

TM00152

MECHANICAL

S553-6500-93



SUGGESTED PCB PAD LAYOUT

Unless otherwise specified, dimensions are nominal and in inches (millimeters).

HIGH FREQUENCY MAGNETICS

Surface Mount Wideband Signal Splitter



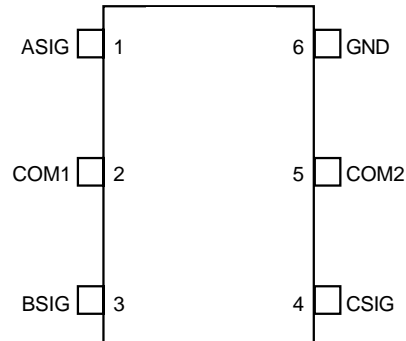
TM00152

APPLICATIONS NOTES

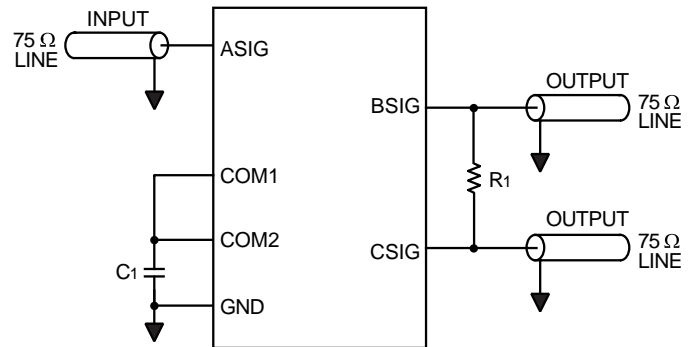
The S553-6500-93 hybrid transformer operates with 75Ω terminations over an extremely wide frequency spectrum (3 dB response: 20 kHz to 800 MHz).

It can also be used as a pulse transformer with very fast pulses (typical rise time: 0.5 ns). The transformer operates as either a signal splitter or a signal combiner. As a signal splitter, the transformer provides two identical output signals (which are in phase with each other) from a single input. Each of the two output signals is 3 dB down from the input signal (half the power of the input signal). There is a high degree of separation or transhybrid loss between the two output signals. As a signal combiner, the transformer provides a single output signal from two identical input signals (which are in phase with each other). The output signal has twice the power of either input signal.

PIN DIAGRAM



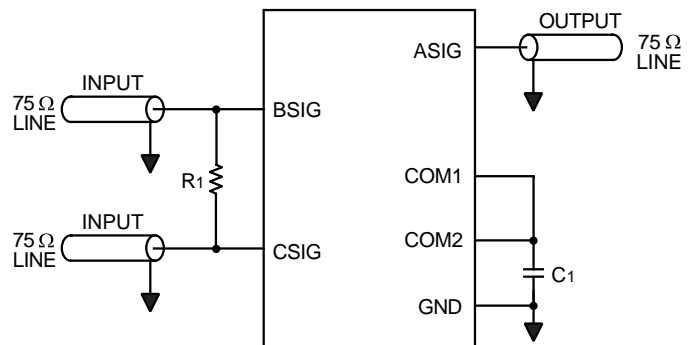
SIGNAL SPLITTER



PIN DESCRIPTIONS AND TERMINATIONS

Pin	Symbol	Name and Function
1	ASIG	A signal. Input for splitter configuration. Output for combiner application.
2	COM1	Common point of transformer 1. Must be connected externally to COM2.
3	BSIG	B signal. Output for splitter configuration. Input for combiner application.
4	CSIG	C signal. Output for splitter configuration. Input for combiner application.
5	COM2	Common point of transformer 2. Must be connected externally to COM1.
6	GND	Ground. Connect to circuit ground.
	R1	162 Ω external resistor.
	C1	7 pF external capacitor.

SIGNAL COMBINER



©2000 Bel Fuse Inc. Specifications subject to change without notice. 09.00



TM00152

HIGH FREQUENCY MAGNETICS

Surface Mount Wideband Signal Splitter

This page intentionally left blank.

©2000 Bel Fuse Inc. Specifications subject to change without notice. 09.00

CORPORATE

Bel Fuse Inc.
198 Van Vorst Street
Jersey City, NJ 07302
Tel 201-432-0463
Fax 201-432-9542
www.belfuse.com

T1-124

FAR EAST

Bel Fuse Ltd.
8F / 8 Luk Hop Street
San Po Kong
Kowloon, Hong Kong
Tel 852-2328-5515
Fax 852-2352-3706
www.belfuse.com

EUROPE

Bel Fuse Europe Ltd.
Preston Technology Management Centre
Marsh Lane, Suite G7, Preston
Lancashire, PR1 8UD, U.K.
Tel 44-1772-556601
Fax 44-1772-888366
www.belfuse.com