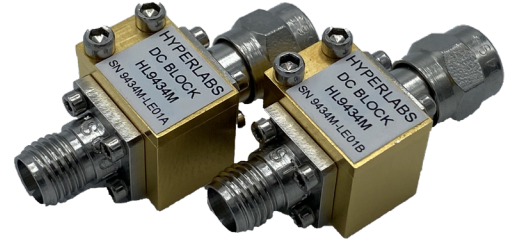


## HL9434 Broadband DC Block (40 GHz)

### Features and Technical Specifications

Bandwidth	35 kHz to > 40 GHz (opt. -11)
	70 kHz to > 40 GHz (opt. -30)
Insertion Loss	< 1 dB to 40 GHz, all options
	See Fig. 1 below
Low Frequency Cutoff	35 kHz (opt. -11)
	70 kHz (opt. -30)
Return Loss	15 dB to 30 GHz, all options
	10 dB to 40 GHz, all options
	See Fig. 3 below
Amplitude Match (opt. -M only)	± 0.1 dB, all options
	See Fig. 5 below
Phase Match (opt. -M only)	± 4° at 40 GHz
Breakdown Voltage	11 V, max (opt. -11)
	30 V, max (opt. -30)
Rise Time (10-90%)	8.75 ps, all options
Group Delay	100 ps, all options
	See Fig. 4 below
Impedance	50 Ω
Type	Inner, all options
Connectors	2.92 mm, plug-plug (config. -PP)
	2.92 mm, plug-jack (config. -PJ)
	2.92 mm, jack-jack (config. -JJ)
Dimensions	31.24 x 13.59 x 13.34 mm
	1.23" x 0.535" x 0.525"
Weight	8 g (0.28 oz.)
Temperature Limits	-40° to +40° C, operating
RoHS Compliance	RoHS compliant; made with lead-free solder
Warranty	1 year, see website



#### PRODUCT SUMMARY

The HL9434 is an ultra-broadband DC Block with typical insertion loss of < 1 dB to 40 GHz.

The HL9434 will remove DC bias from the input signaling to prevent damage to DC sensitive devices or equipment.

These devices can also be used to improve RF power measurements when a power meter with DC sensitivities is used.

Other applications include optical communication systems, high-speed data systems, level shifting, cascading, and interfacing between devices with incompatible DC operating points.

This part is available with breakdown voltage of 11 V or 30 V and in a variety of connector configurations.

#### PRODUCT OPTIONS

The following options and configurations are available for this product:

- M, matched pair
- U, unmatched part(s)
- 11, 11 V breakdown
- 30, 30 V breakdown

- PP, 1.85 mm plug RF In, 1.85 mm plug RF Out
- PJ, 1.85 mm plug RF In, 1.85 mm jack RF Out
- JJ, 1.85 mm jack RF In, 1.85 mm jack RF Out

For example, a matched pair of 30 V devices with two jack connectors would be: **HL9434-M-30-JJ**

#### DEPLOYMENT NOTES

All specifications contained herein are typical unless otherwise noted.

S-parameter files and higher resolution versions of the plots on the following pages are available on our website.

Data contained herein are representative of common options and suboptions. For data on any specific configuration, please see our website or contact HYPERLABS.

## HL9434 Bandwidth and Insertion Loss

Figure 1 shows the insertion loss and bandwidth of the HL9434-30-JJ configuration (30 V breakdown, jack-jack connectors) from 10 MHz to 40 GHz. Figure 2 shows the low-frequency response of this same configuration to 1 MHz.

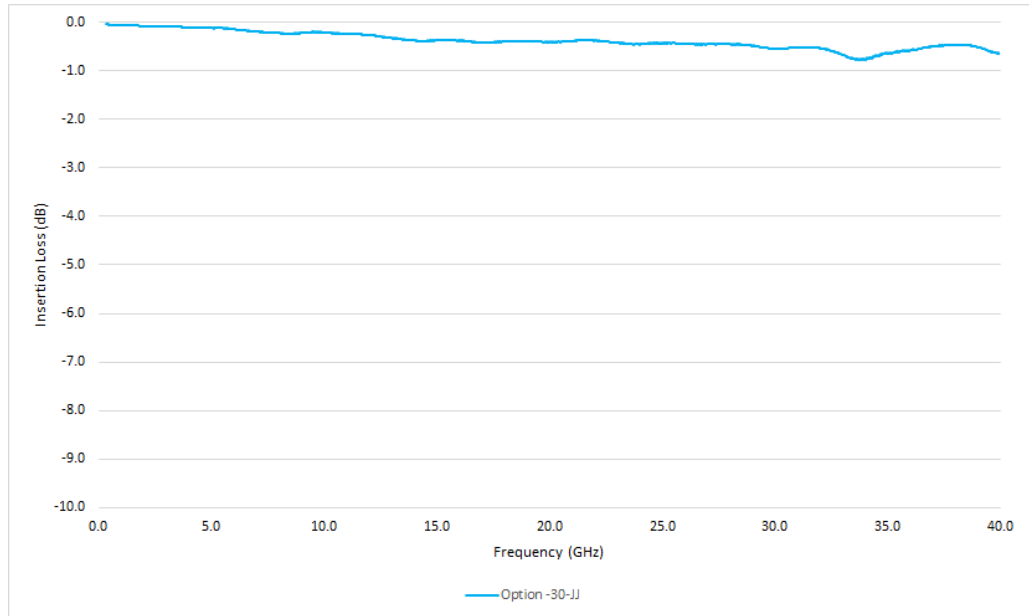


Figure 1: Typical HL9434 bandwidth and insertion loss, option -U-30-JJ

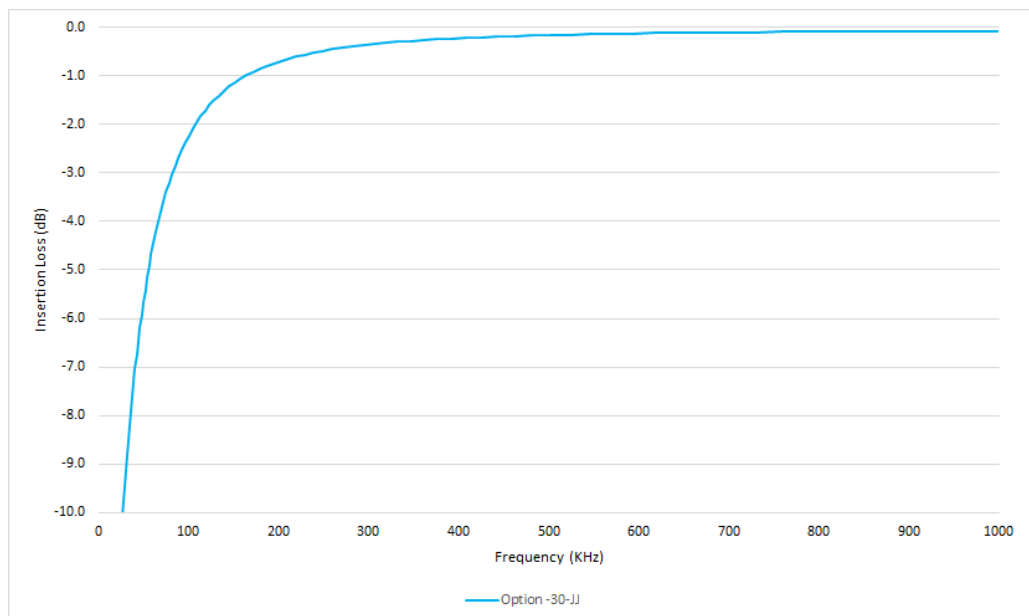


Figure 2: Typical HL9434 low-frequency performance, option -U-30-JJ

## HL9434 Return Loss and Group Delay

Figure 3 shows the Return Loss and Figure 4 shows the Group Delay on a typical HL9434 with option -30-JJ (30 V breakdown, jack-jack connectors) from 10 MHz to 40 GHz.

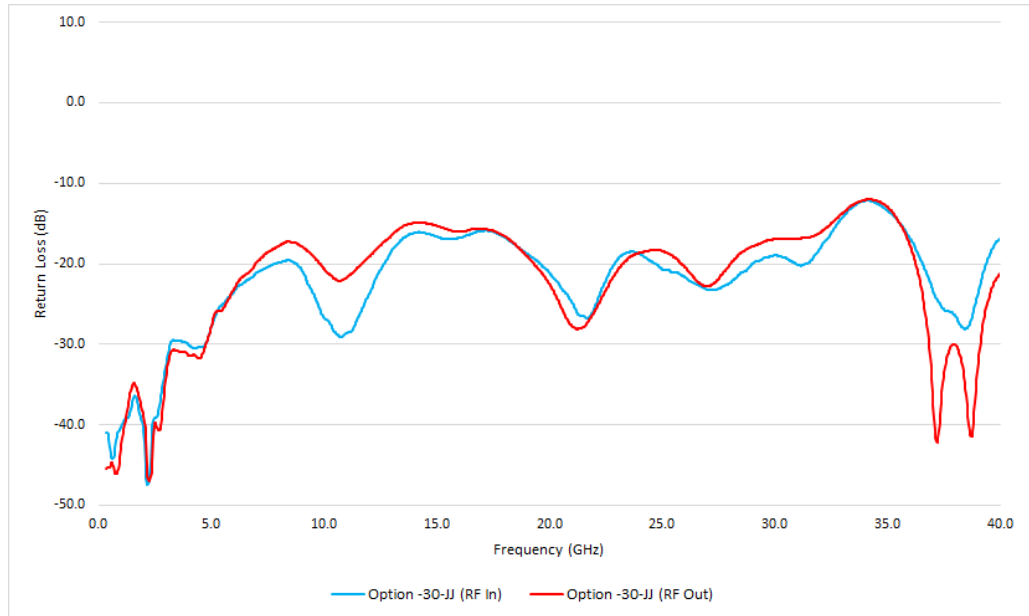


Figure 3: Typical HL9434 return loss, option -M-30-JJ

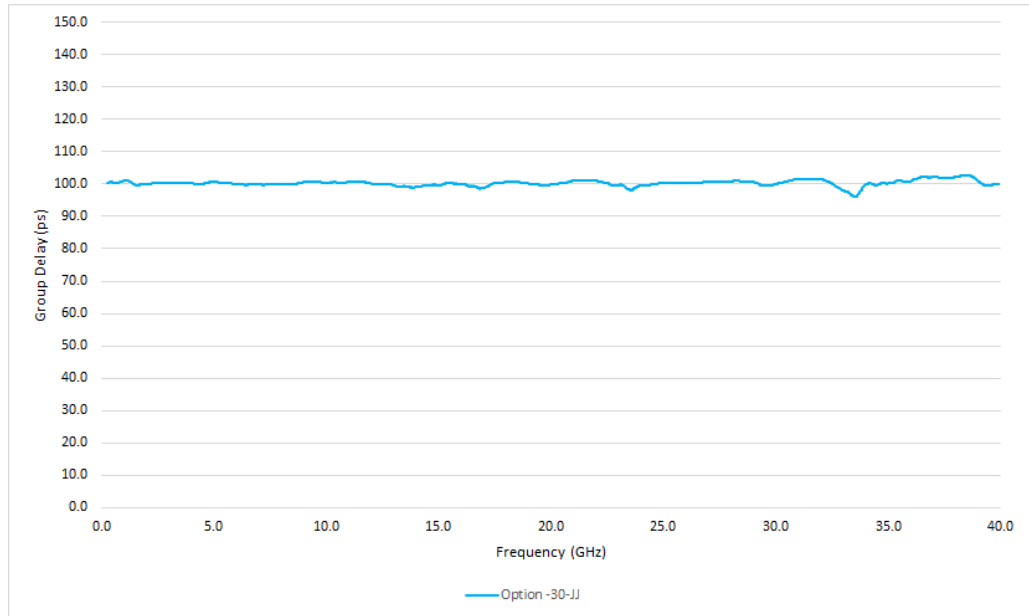


Figure 4: Typical HL9434 group delay, option -U-30-JJ



## HL9434 Matching

When two HL9434 devices are purchased as a matched pair (P/N HL9434M), the devices will be amplitude and phase matched as per the specifications in this datasheet. *Figure 5* shows the typical amplitude match between a pair of HL9434 devices, option -30-JJ (30 V breakdown, jack-jack connectors), from 10 MHz to 40 GHz.

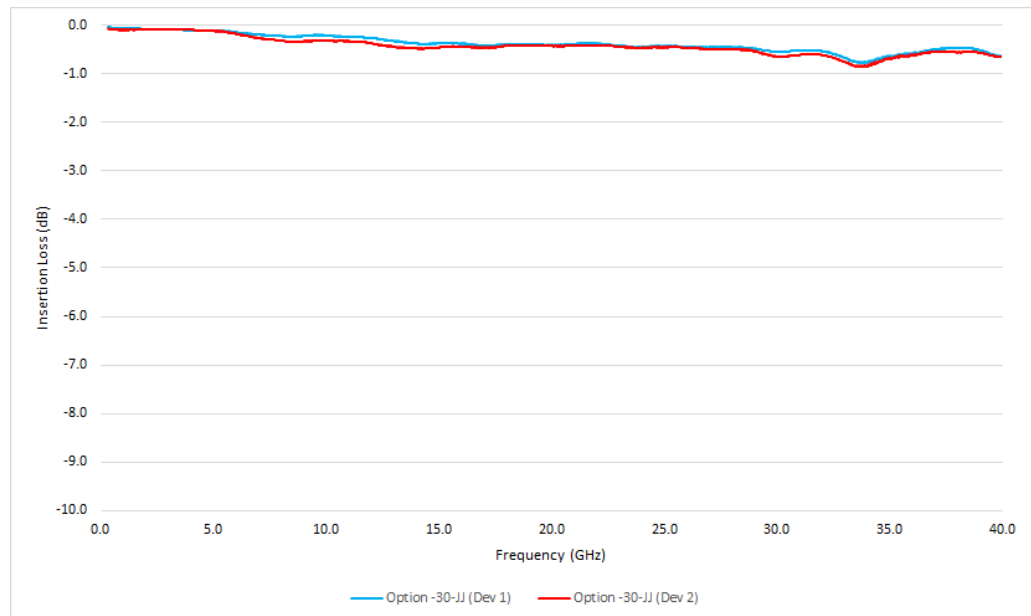


Figure 5: Typical HL9434 amplitude matched pair, option -M-30-JJ