

## HL7071 Surface Mount Power Divider (DC to 30 GHz)

### Features and Technical Specifications

#### PRODUCT SUMMARY

The HL7071 is a surface mountable (SMD) power divider that provides outstanding amplitude- and phase-symmetrical power division from DC to over 30 GHz (3 dB).

This product is designed using a three-resistor network resulting in outputs that are nominally attenuated to 6 dB, and all ports are impedance-matched to 50 Ohms when the ports are terminated.

They are suitable for use in 100 Gbps Ethernet, 100 Gbps Long Haul, and 40 Gbps (D)QPSK communications systems, high-speed analog-to-digital conversion, frequency response testing for differential devices, and many other applications.

#### DEPLOYMENT NOTES

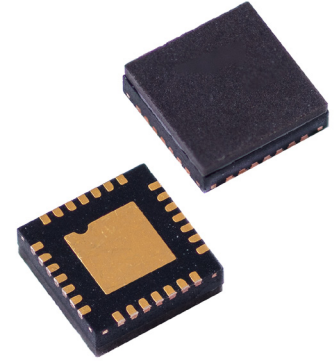
The HL7071 is packaged in a leadless 4 x 4 mm surface mount package.

#### MODELS

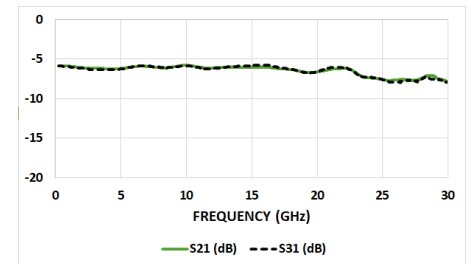
**HL7071** - SMD package

**HL7071-EVAL** - mounted to evaluation board

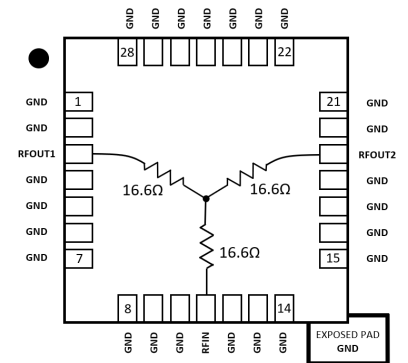
Bandwidth (-0.5 dB)	DC to 30 GHz
Insertion Loss	6 dB
Amplitude Match	$\pm 0.3$ dB See Fig. 1
Phase Match	$\pm 6^\circ$ , $f = 20$ GHz See Fig. 4
Return Loss	$> 15$ dB, $f \leq 20$ GHz $> 10$ dB, $f > 20$ GHz See Fig. 2
Rise Time	12 ps
Group Delay	35 ps, all ports See Fig. 3
Max Input Power	+27 dBm
Impedance	$50 \Omega \pm 5\%$
Interface	Solderable pads, Gold ENIG
Reflow Profile	Designed to be compatible with a SAC305 thermal reflow profile: - max reflow time above 217 C is 90 seconds - peak reflow temperature is 245 C, not to be exceeded
Dimensions	28 lead 4 x 4 mm SMT package; 16 mm <sup>2</sup> See Fig. 5
Temperature Limits	-40° to +85° C, operating
RoHS Compliant	Yes
REACH Compliant	Yes
Warranty	1 year, see website



HL7071 4 x 4 mm QFN Package, 28 pin



Typical HL7071 Insertion Loss



HL7071 Schematic and Port Assignments

### HL7071 Insertion and Return Loss

Figure 1 shows the HL7071 insertion loss and amplitude match on RFIN to the RFOUTS to 30 GHz. Figure 2 shows return loss on all three ports of the same device to 30 GHz.

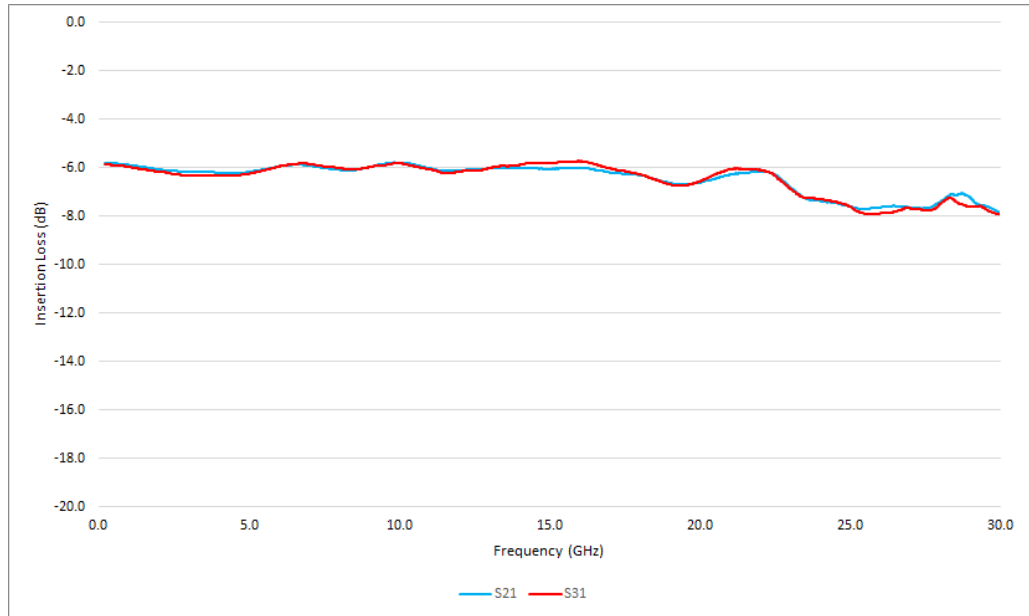


Figure 1: HL7071 Insertion Loss

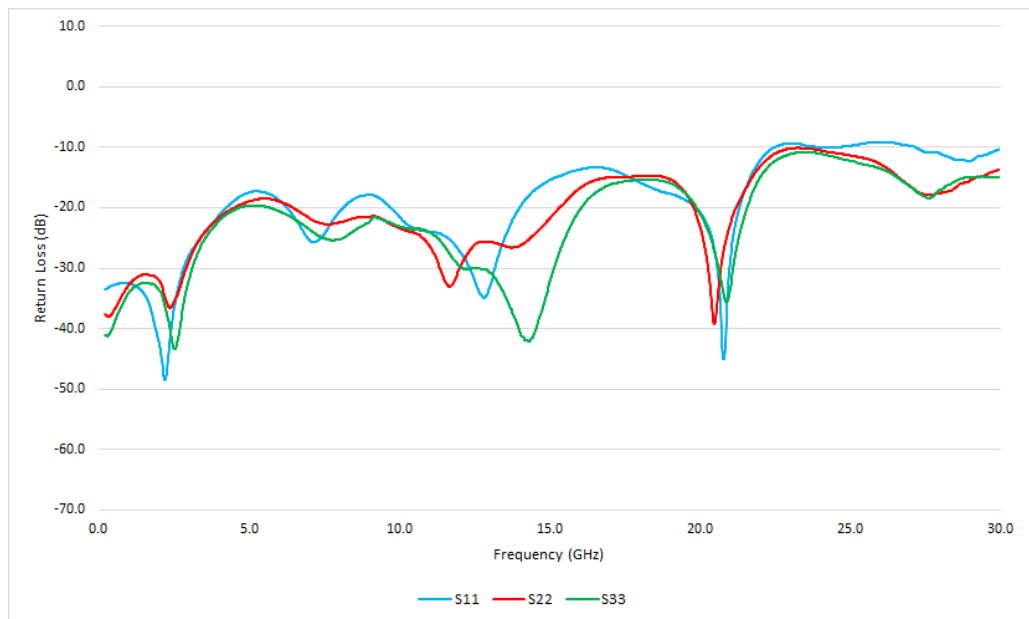


Figure 2: HL7071 Return Loss



## HL7071 Group Delay and Phase Match

Figure 3 shows the typical group delay of an HL7071. The average slope of the phase mismatch, shown in Figure 4, is equal to the group delay mismatch.

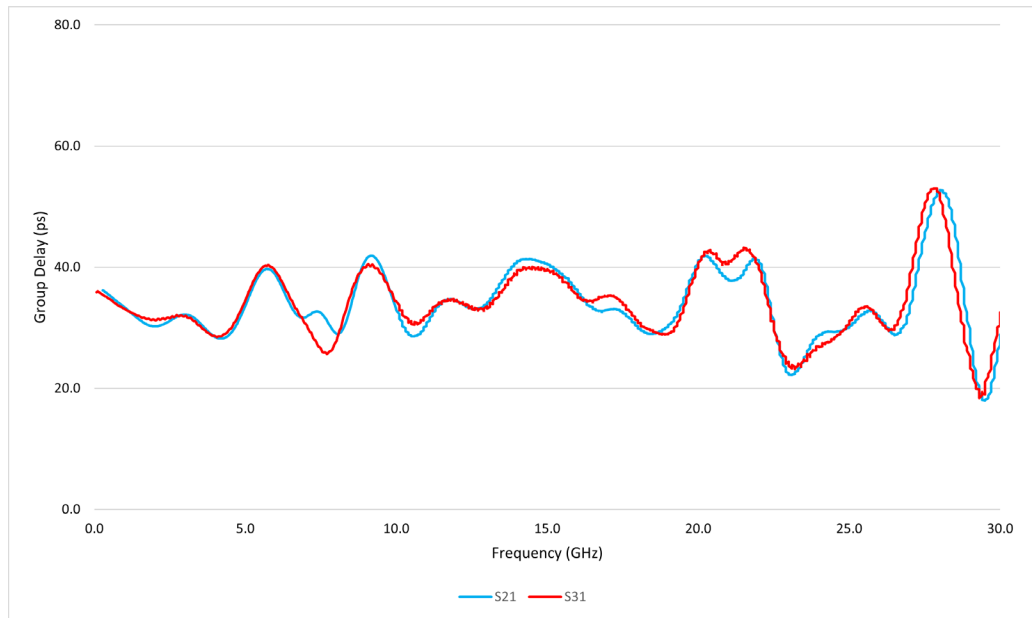


Figure 3: HL7071 Group Delay

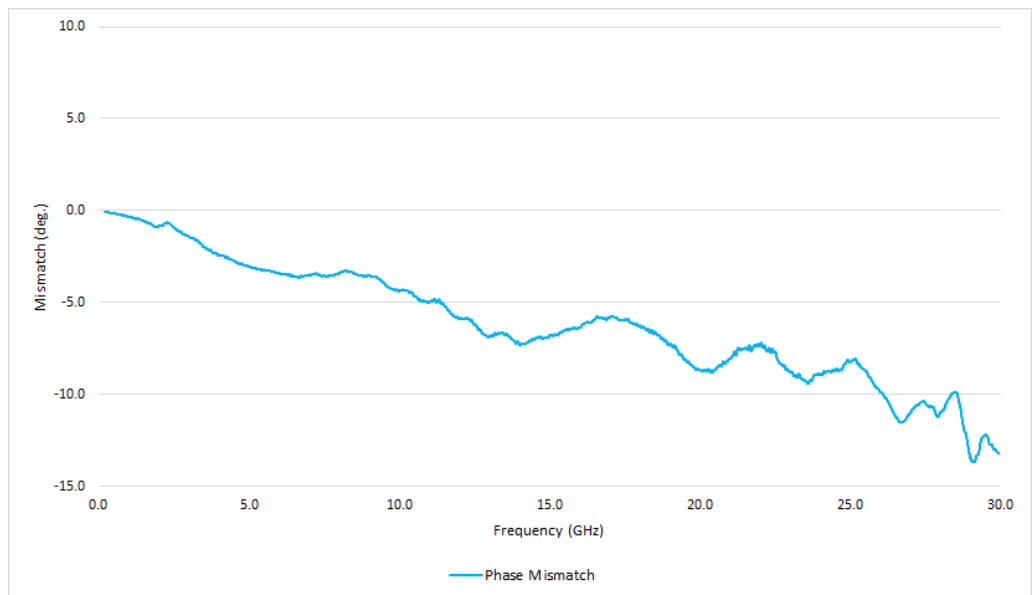


Figure 4: HL7071 Phase Mismatch

## HL7071 Dimensional Drawing

Figure 5 shows a mechanical drawing of an HL7071. Figure 6 shows an HL7071 mounted to the evaluation board. Unless otherwise noted, all units are shown in mm.

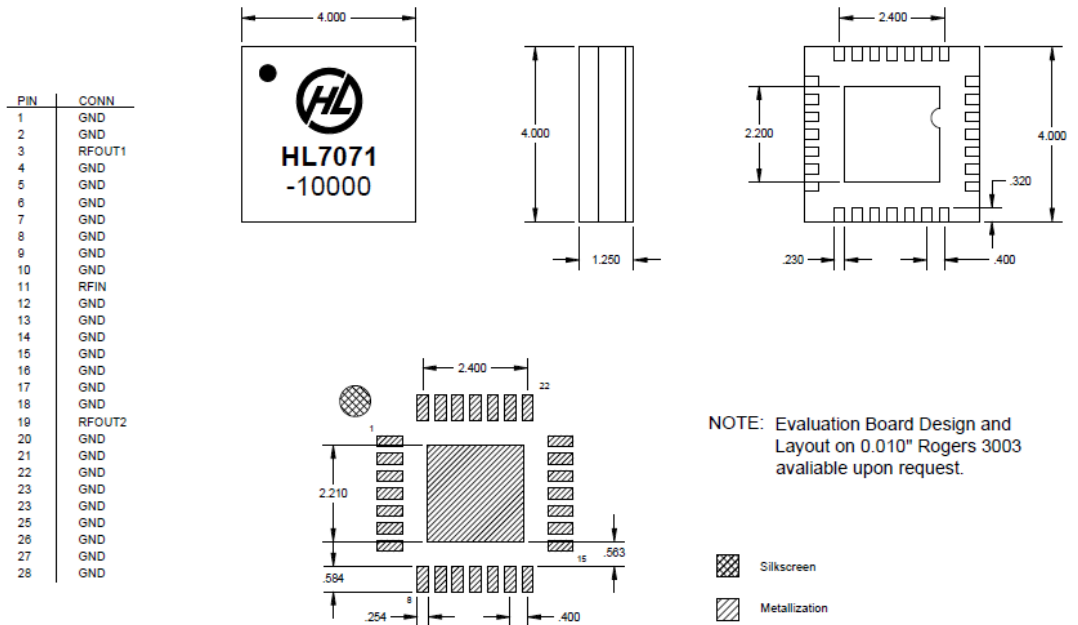


Figure 5: HL7071 Mechanical Drawing

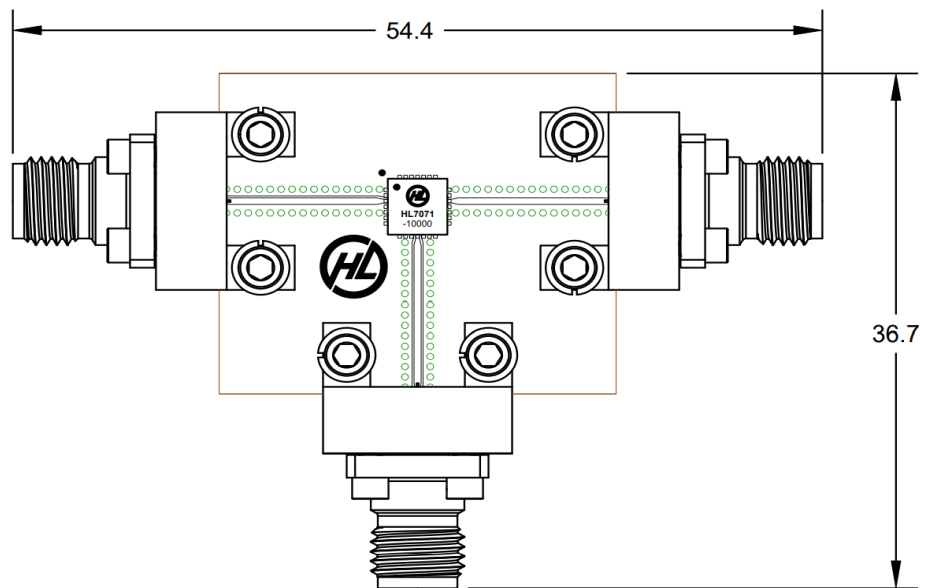


Figure 6: HL7071 Evaluation Board Dimensions