

To our customers,

Old Company Name in Catalogs and Other Documents

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Renesas Electronics website: <http://www.renesas.com>

April 1st, 2010
Renesas Electronics Corporation

Issued by: Renesas Electronics Corporation (<http://www.renesas.com>)

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Evaluation Board Information

NE34018

1.9 GHz LNA Evaluation Board (NF optimized)

- Evaluation Board Pattern Layout
- Circuit Description
- Linear Gain Data
- Isolation Data
- Input and Output Return Loss Data
- 1.9 GHz P_{in} vs. P_{out} Data

Caution	GaAs Products	<p>This product uses gallium arsenide (GaAs). GaAs vapor and powder are hazardous to human health if inhaled or ingested, so please observe the following points.</p> <ul style="list-style-type: none">• Follow related laws and ordinances when disposing of the product. If there are no applicable laws and/or ordinances, dispose of the product as recommended below.<ol style="list-style-type: none">1. Commission a disposal company able to (with a license to) collect, transport and dispose of materials that contain arsenic and other such industrial waste materials.2. Exclude the product from general industrial waste and household garbage, and ensure that the product is controlled (as industrial waste subject to special control) up until final disposal.• Do not burn, destroy, cut, crush, or chemically dissolve the product.• Do not lick the product or in any way allow it to enter the mouth.
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This document outlines general applications for this product. The application circuits and circuit constants provided in this document are simply examples and should not be used for mass production design. Be aware also that there is no intention to standardize the restrictions and characteristics of these application circuits.

The characteristics of high-frequency devices in particular vary depending on the external components and mounting pattern used.

Customers are requested to confirm all characteristics when designing a system based in part or wholly on the information in this document.

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"Special": Transportation equipment (automobiles, trains, ships, etc.), traffic control systems, anti-disaster systems, anti-crime systems, safety equipment and medical equipment (not specifically designed for life support)

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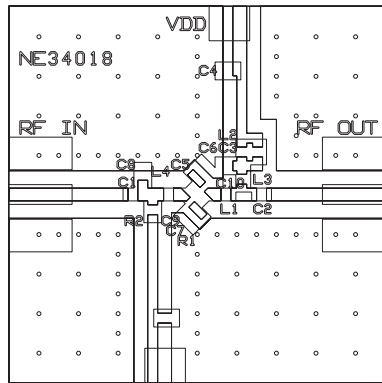
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M8E 00.4-0110

Evaluation Board Pattern Layout

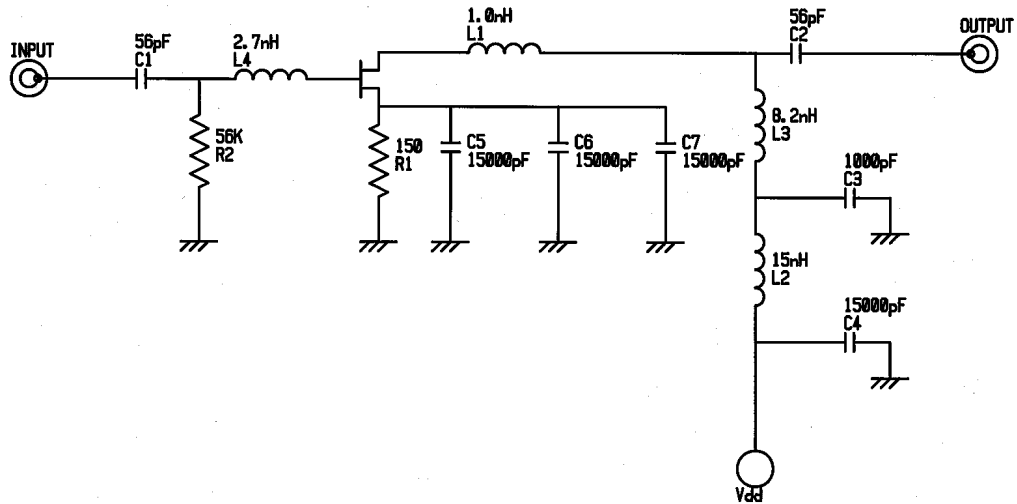


scale 1 : 1

size 38 mm × 38 mm

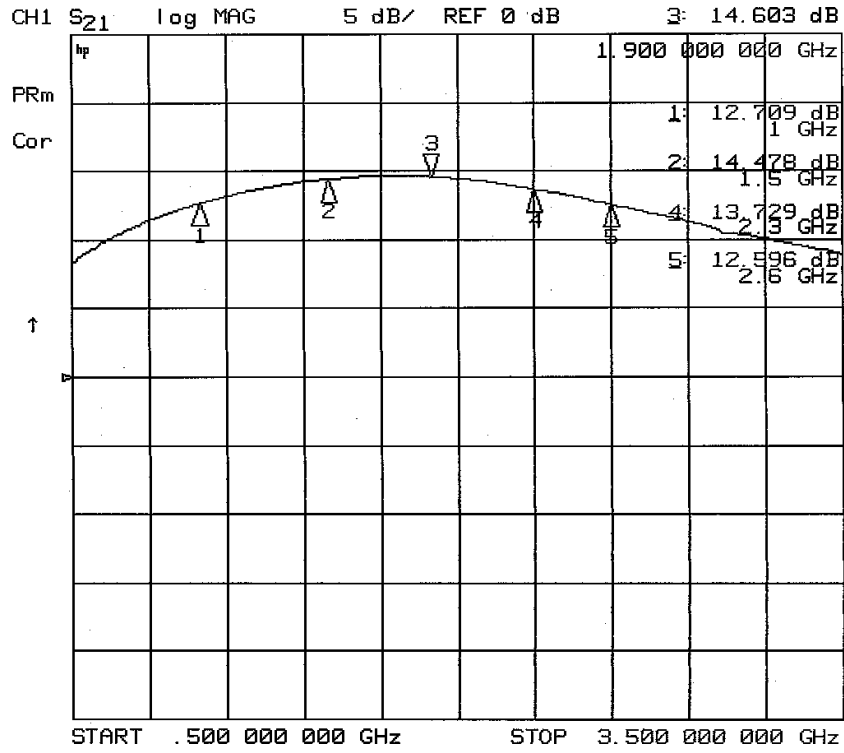
material FR4 (ELC4756/Sumitomo)
h = 0.8 mm, $\epsilon_r = 4.6$

Circuit Description

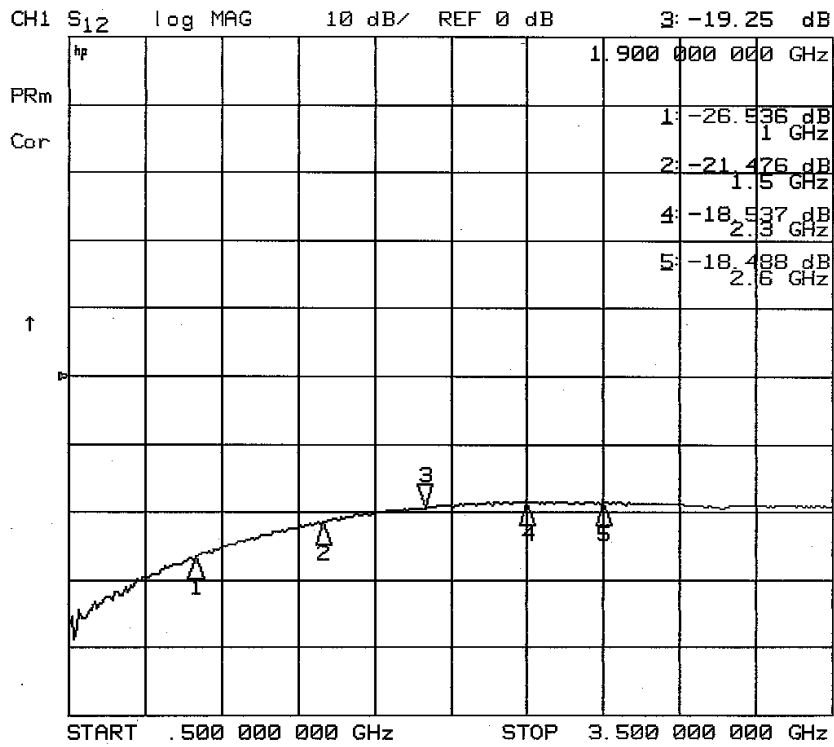


Parts	Model No.	Value	Maker	Symbol
Chip Inductance	TFL0816-1N0	1.0 nH	SSM	L1
	TFL0816-15N	15 nH	SSM	L2
	TFL0816-8N2	8.2 nH	SSM	L3
	LL1608-FH2N7	2.7 nH	TOKO	L4
Chip Resistance	RR0816R-151-D	151	SSM	R1
	RR0816R-563-D	56 K	SSM	R2
Chip Capacitance	GRM39CH560J50PB	56 pF	Murata	C1, C2
	GRM39CH102K50PB	1000 pF	Murata	C3
	GRM36B153K50PB	15000 pF	Murata	C4, C5, C6, C7
PC Terminal	A2-2PA-2.54DSA	—	Hirose	—
RF Connector	142-0721-821	—	Jhonson	—
Substrate	FR4 (t = 0.8 mm)	—	Sumitomo	—

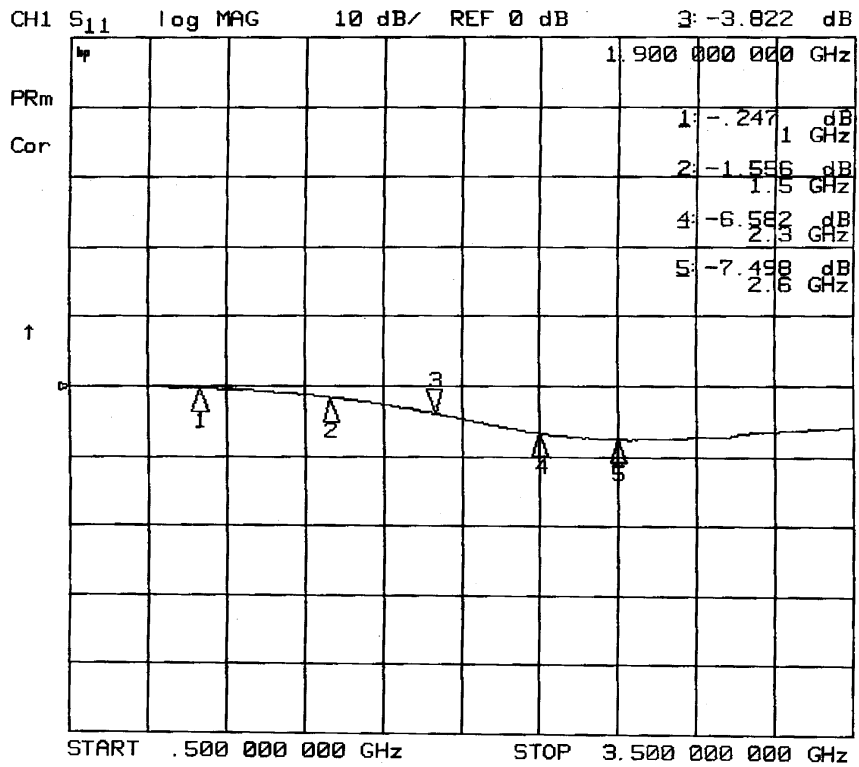
Linear Gain



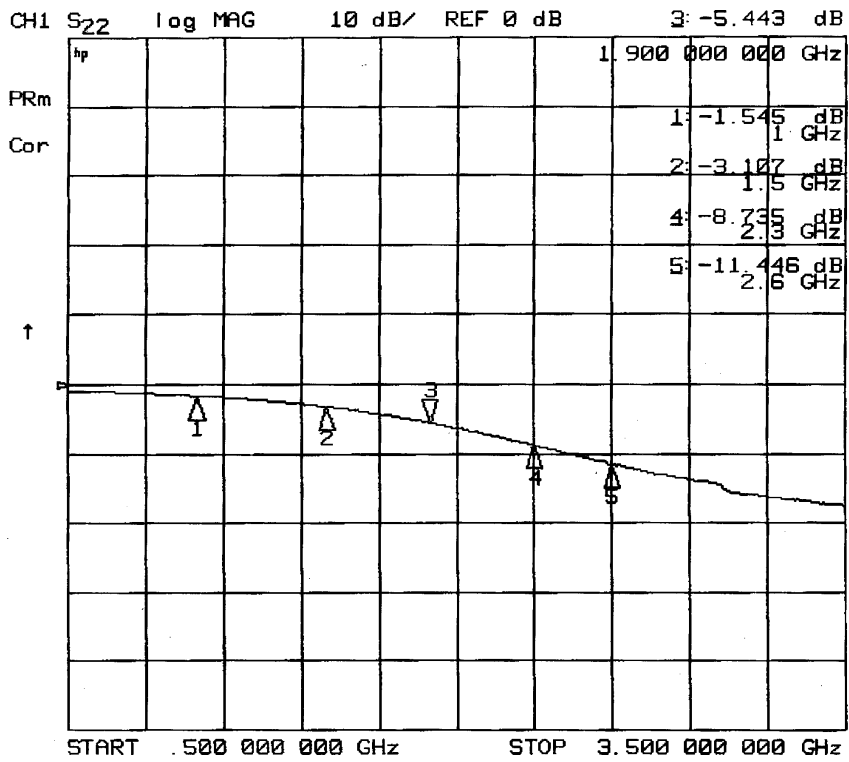
Isolation



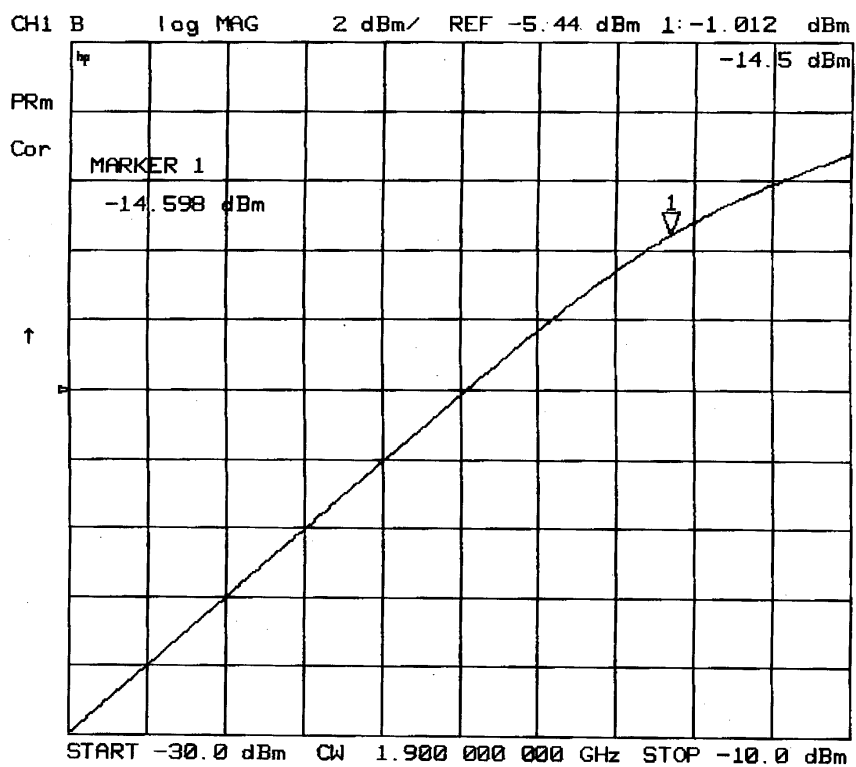
Input Return Loss



Output Return Loss



1.9 GHz Pin vs. Pout



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