

To our customers,

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## Old Company Name in Catalogs and Other Documents

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

April 1<sup>st</sup>, 2010  
Renesas Electronics Corporation

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

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## Evaluation Board Information

# EC- $\mu$ PG2158T5K (EB Ver2) SPDT SW IC Evaluation Board

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- Evaluation Board Pattern Layout
- Circuit Description
- Insertion Loss Data (Including loss of the test fixture)
- Isolation Data
- Input Return Loss Data
- Output Return Loss Data
- 2 GHz P<sub>out</sub> vs. P<sub>in</sub> Data
- Input 3rd Order Distortion Intercept Point Data

<b>Caution</b>	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"> <li>• 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"> <li>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.</li> <li>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.</li> </ol> </li> <li>• Do not burn, destroy, cut, crush, or chemically dissolve the product.</li> <li>• Do not lick the product or in any way allow it to enter the mouth.</li> </ul>
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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.**

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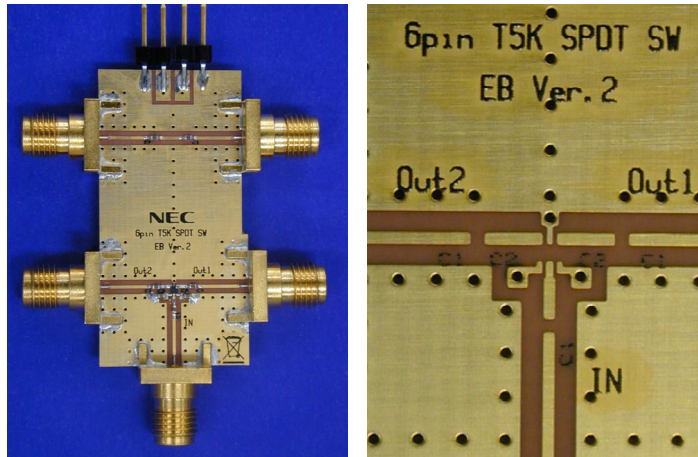
M8E 02.11-1

The mark <R> shows major revised points.

The revised points can be easily searched by copying an "<R>" in the PDF file and specifying it in the "Find what:" field.

<R>

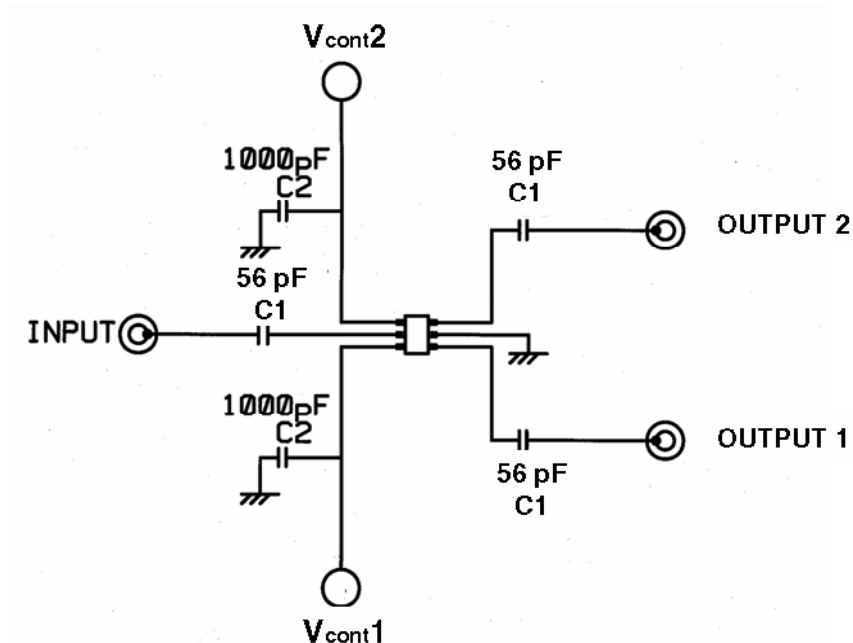
## Evaluation Board Pattern Layout



size 20 mm × 39.5 mm

material FR4 (ELC-4756UV/Sumitomo)  
t = 1.0 mm, four layer substrate,  $\epsilon_r = 4.6$

## Circuit Description



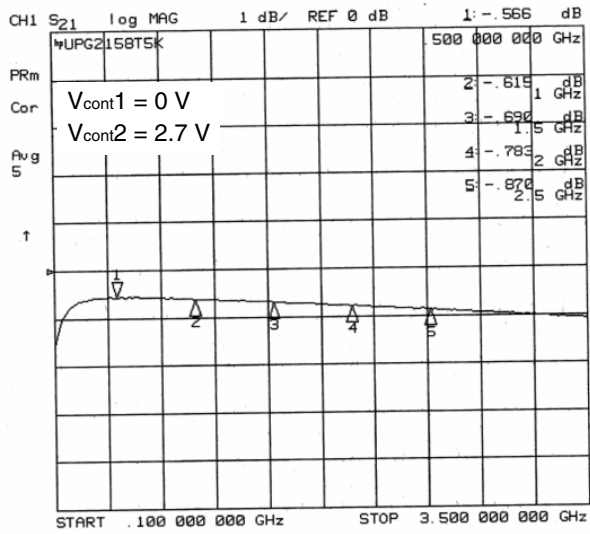
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Parts	Model No.	Value	Maker	Symbol
Chip Capacitance	GRM1552C1H560JZ01C	56 pF	Murata	C1
	GRM155B11H102KA01B	1 000 pF	Murata	C2
PC Terminal	A2-2PA-2.54DSA	—	Hirose	—
RF Connector	01K2266	—	WAKA	—
Substrate	ELC-4756UV	—	Sumitomo	—

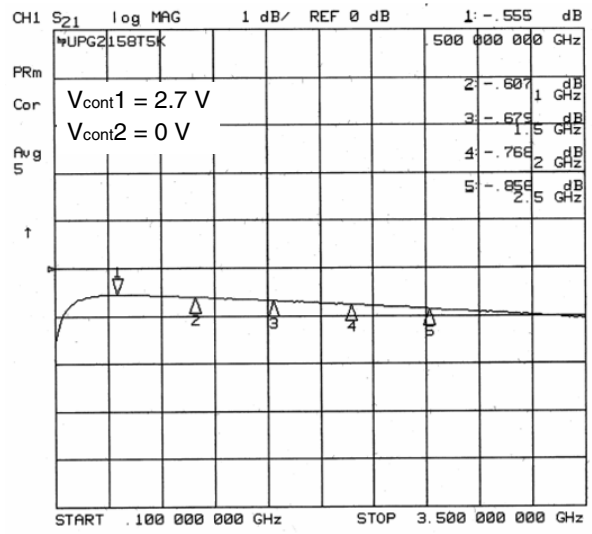
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## Insertion Loss (Including loss of the test fixture)

<IN-OUT1 Insertion Loss>



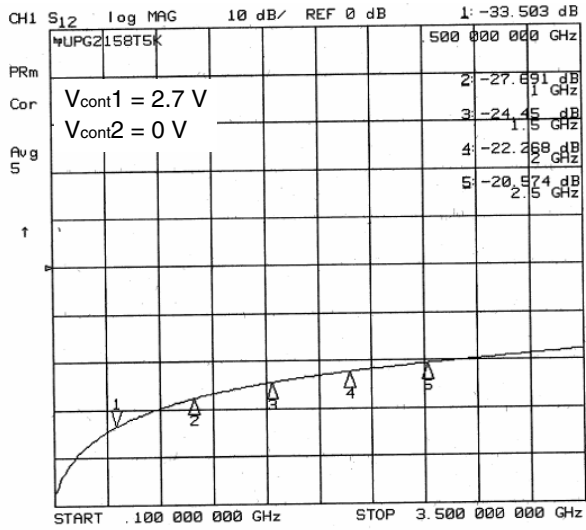
<IN-OUT2 Insertion Loss>



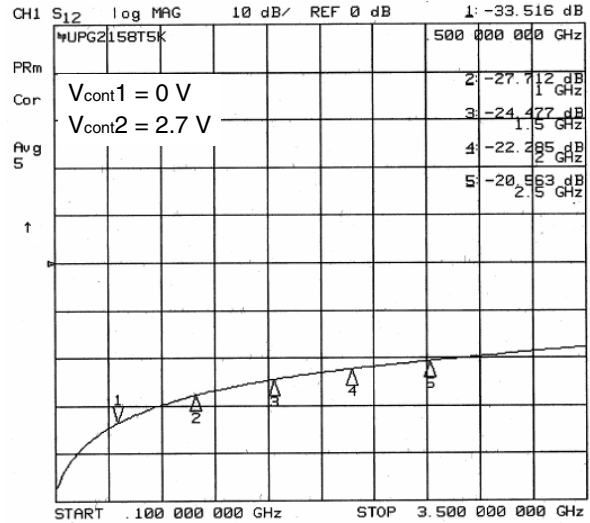
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# Isolation

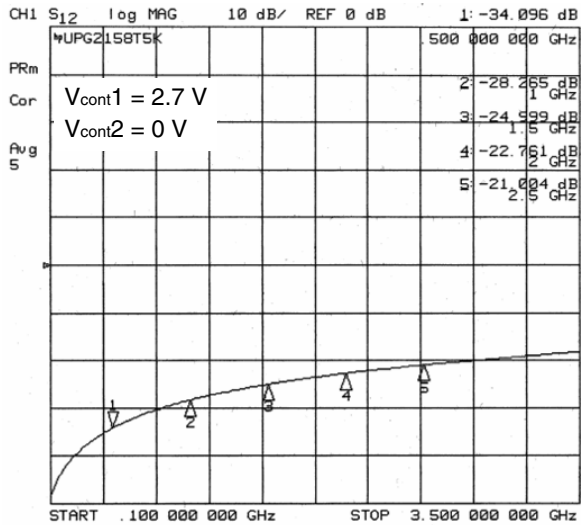
<IN-OUT1 Isolation>



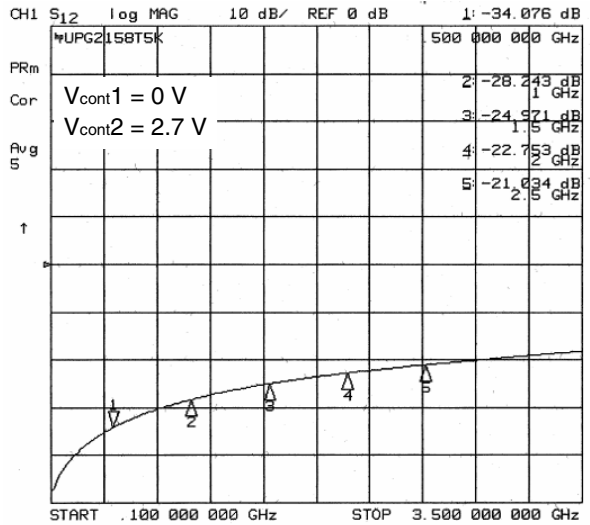
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<OUT2-OUT1 Isolation>



<OUT2-OUT1 Isolation>

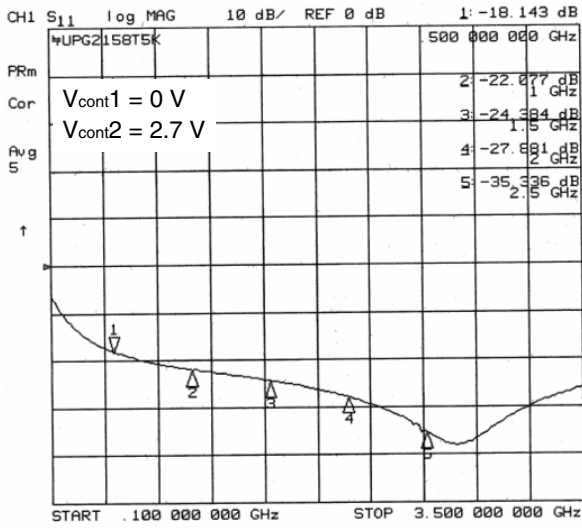




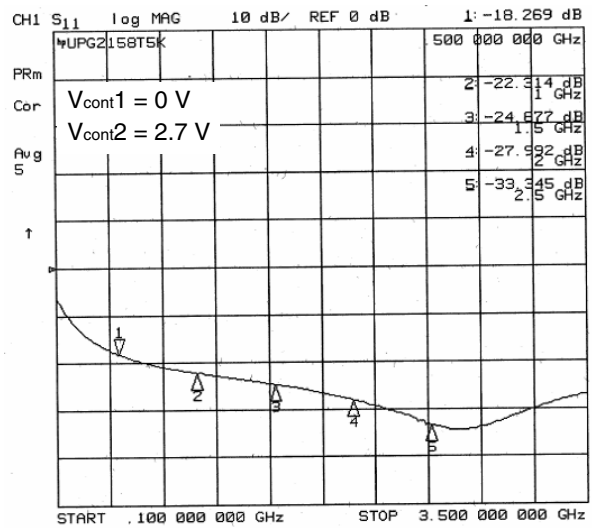
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## Input Return Loss

<IN-OUT1 Input Return Loss>



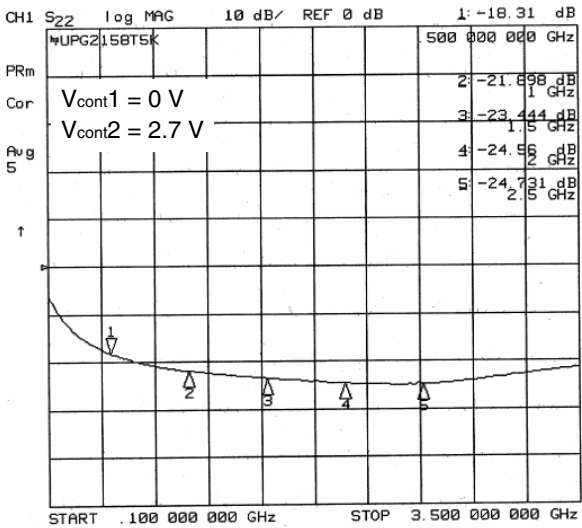
<IN-OUT2 Input Return Loss>



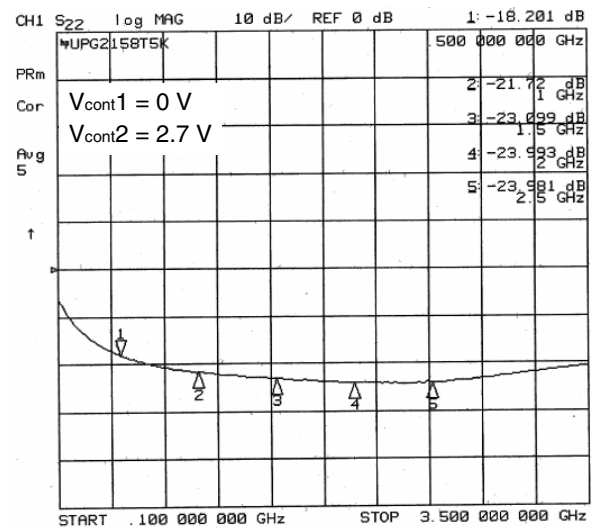
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## Output Return Loss

<IN-OUT1 Output Return Loss>

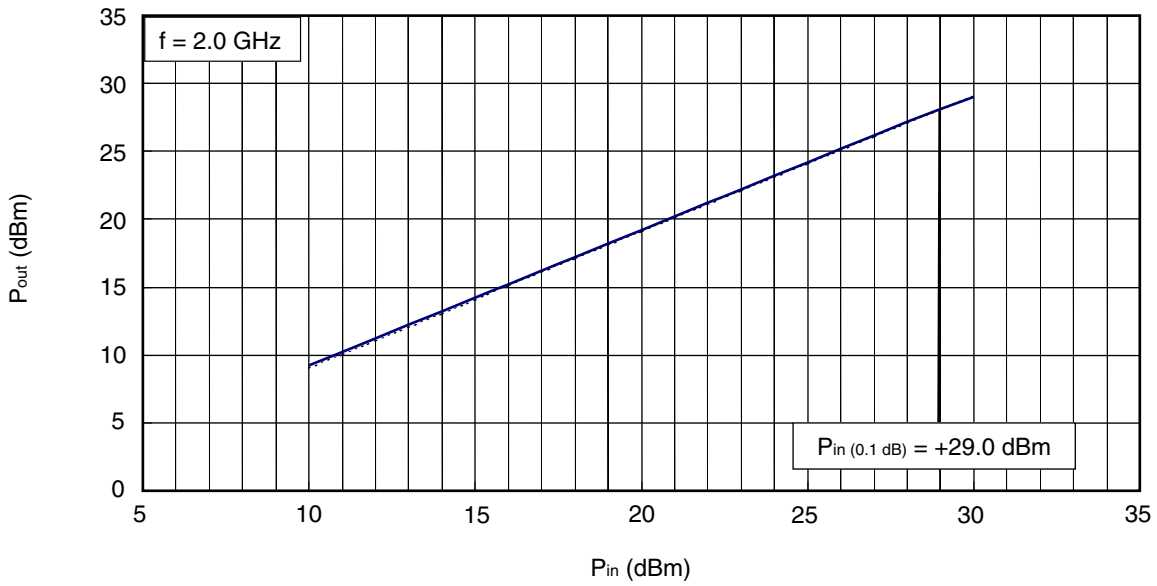


<IN-OUT2 Output Return Loss>



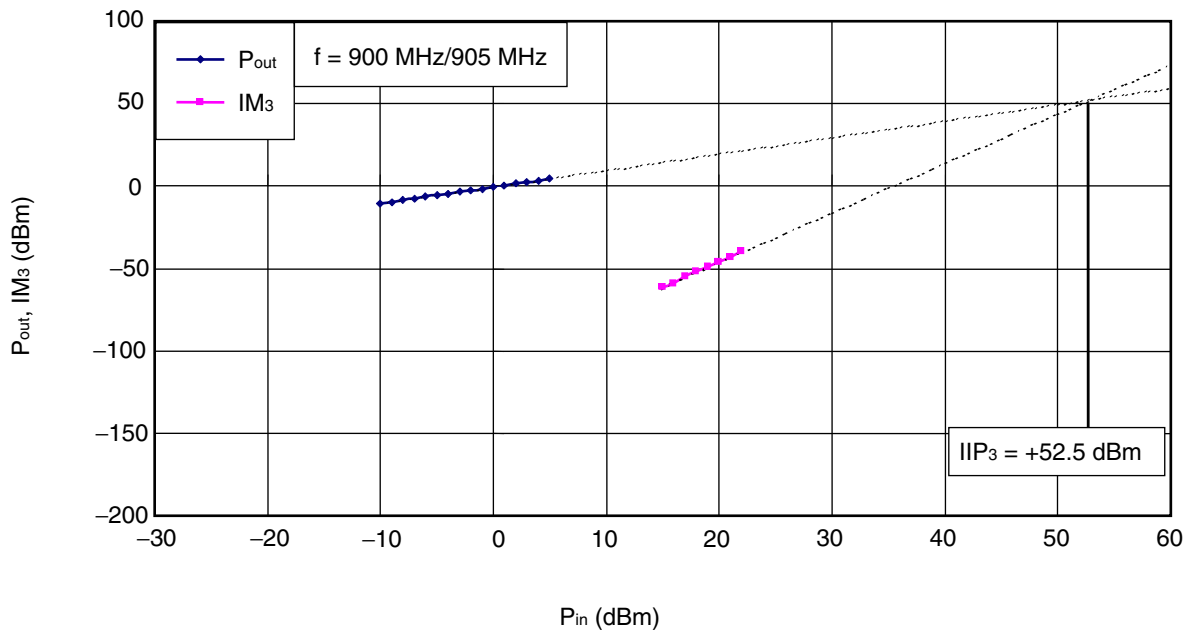
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### 2 GHz P<sub>out</sub> vs. P<sub>in</sub>



<R>

### Input 3rd Order Distortion Intercept Point



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