

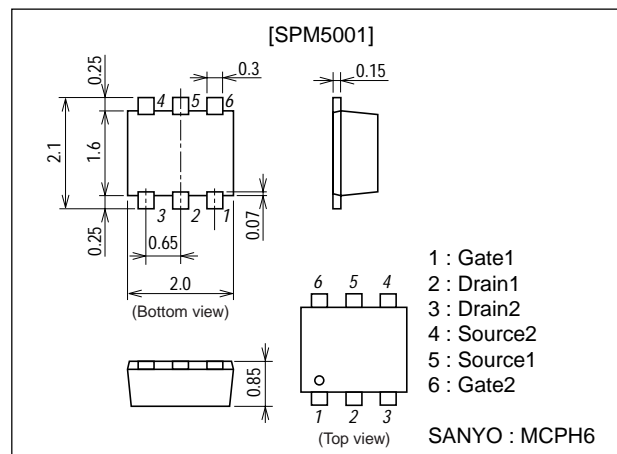
SANYO**RF Double Balanced Mixer****Features**

- Wide band double balanced mixer.
- Low distortion.
- The chip surface is covered with highly reliable protection film.
- Automatic surface mounting is available.
- MCPH6 package.

Package Dimensions

unit : mm

2211

**Specifications****Absolute Maximum Ratings** at Ta=25°C

| Parameter | Symbol | Conditions | Ratings | Unit |
|-----------------------------|------------------|------------|-------------|------|
| Drain-to-Source Voltage | V _{DS} | | 6 | V |
| Gate-to-Source Voltage | V _{GS} | | -4 | V |
| Drain Current | I _D | | 60 | mA |
| Allowable Power Dissipation | P _D | | 200 | mW |
| Junction Temperature | T _J | | 150 | °C |
| Storage Temperature | T _{stg} | | -55 to +150 | °C |

Electrical Characteristics at Ta=25°C

| Parameter | Symbol | Conditions | Ratings | | | Unit |
|---------------------------------|--------|---|---------|-----|-----|------|
| | | | min | typ | max | |
| Gate-to-Source Leakage Current | IG1S1O | V _{G1S1} =-5V | | | -10 | μA |
| | IG2S1O | V _{G2S1} =-5V | | | -10 | μA |
| | IG2S2O | V _{G2S2} =-5V | | | -10 | μA |
| | IG1S2O | V _{G1S2} =-5V | | | -10 | μA |
| Zero-Gate Voltage Drain Current | ID1S1S | V _{D1} =3V, V _{G1S1} =0, V _{G2} =-4V | 20 | 40 | 60 | mA |
| | ID2S1S | V _{D2} =3V, V _{G2S1} =0, V _{G1} =-4V | 20 | 40 | 60 | mA |
| | ID1S2S | V _{D1} =3V, V _{G2S2} =0, V _{G1} =-4V | 20 | 40 | 60 | mA |
| | ID2S2S | V _{D2} =3V, V _{G1S2} =0, V _{G2} =-4V | 20 | 40 | 60 | mA |

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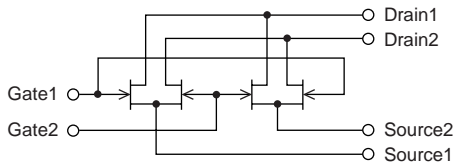
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SPM5001

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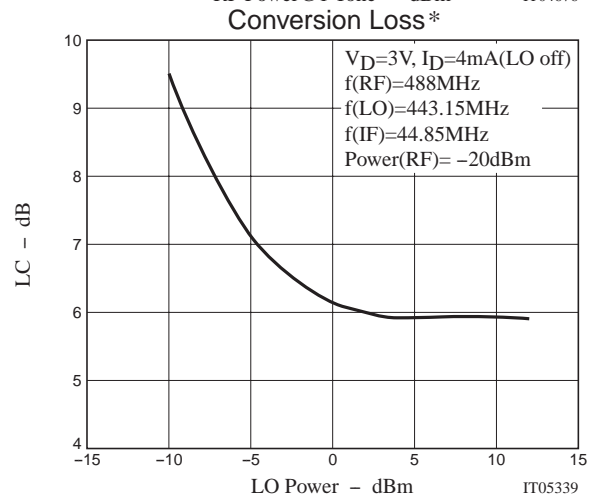
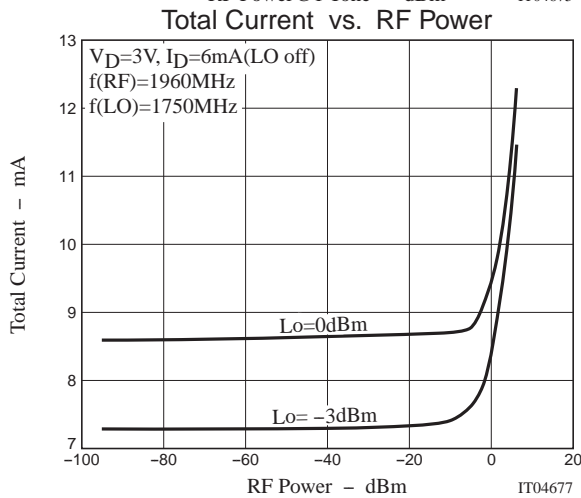
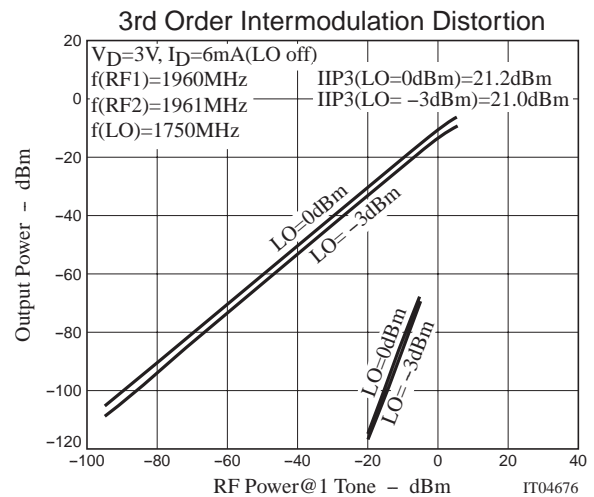
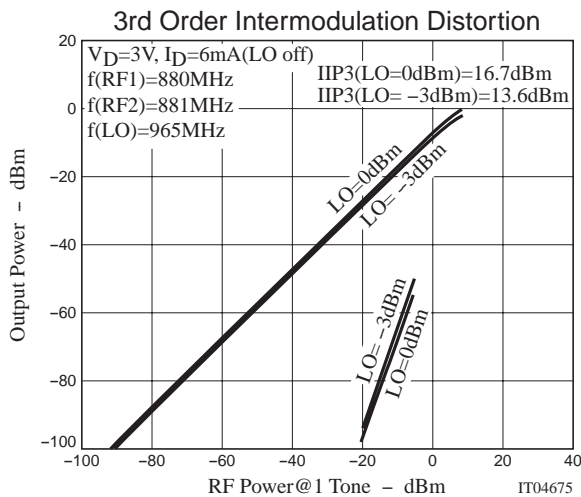
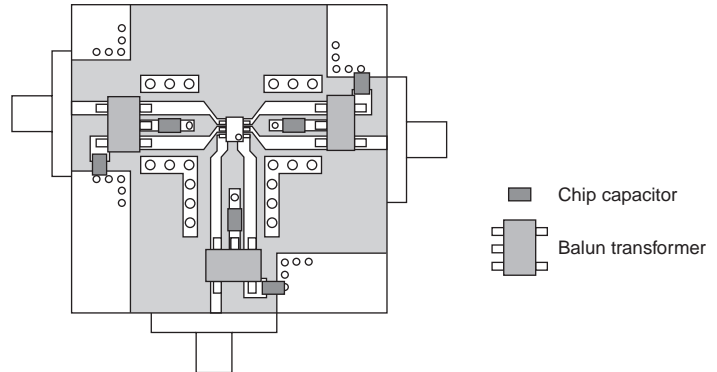
| Parameter | Symbol | Conditions | Ratings | | | Unit |
|-------------------------------|------------|------------------------|---------|------|------|------|
| | | | min | typ | max | |
| Gate-to-Source Cutoff Voltage | VG1S1(off) | $V_D=3V, I_D=100\mu A$ | -0.5 | -1.0 | -1.5 | V |
| | VG2S1(off) | $V_D=3V, I_D=100\mu A$ | -0.5 | -1.0 | -1.5 | V |
| | VG2S2(off) | $V_D=3V, I_D=100\mu A$ | -0.5 | -1.0 | -1.5 | V |
| | VG1S2(off) | $V_D=3V, I_D=100\mu A$ | -0.5 | -1.0 | -1.5 | V |

Equivalent Circuit



[Reference Data]

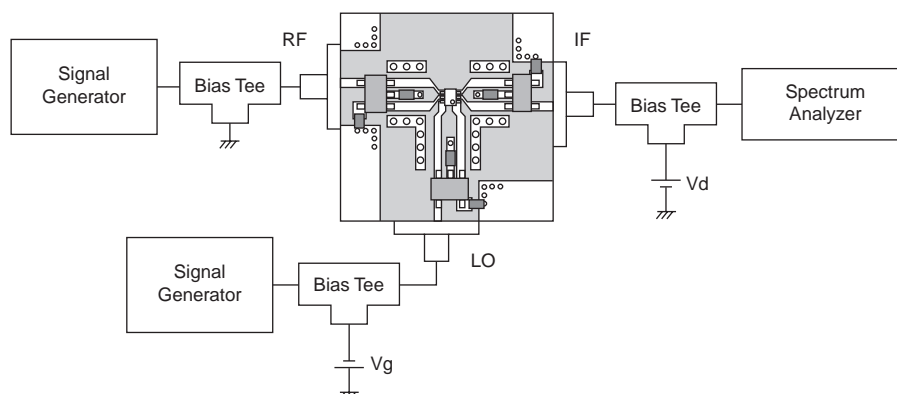
Mixer Characteristics Measured by the Evaluation Board for SPM5001



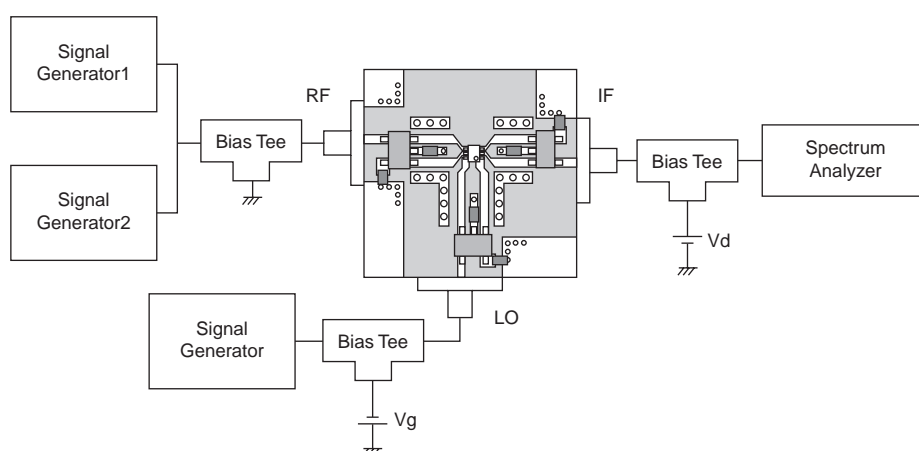
* This Conversion Loss characteristic includes the loss of the test board and the Balun Transformer.

Measurement System

- IF output power vs. RF input power



- IM3, IM2 vs. RF input power



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