

1.1-GHz Prescaler for TV Tuners

Technology: Bipolar

Features

- Extrem low current consumption (typ. 17 mA)
- Output harmonics strongly reduced
- Scaling factor: 256
- High input sensitivity
- ECL output stage
- Electrostatic protection according to MIL-STD. 883

Case: 6-pin single-inline plastic

Absolute Maximum Ratings

Reference point Pin 1, unless otherwise specified

| Parameters | Symbol | Value | Unit |
|-------------------------------------|-----------|-------------|------|
| Supply voltage Pin 4 | V_S | 6 | V |
| Input voltage range Pins 5 and 6 | V_i | 0 to V_S | V |
| Junction temperature | T_j | 125 | °C |
| Ambient-temperature range | T_{amb} | -25 to +85 | °C |
| Storage-temperature range | T_{stg} | -40 to +125 | °C |

Thermal Resistance

| Parameters | Symbol | Maximum | Unit |
|------------------|------------|---------|------|
| Junction ambient | R_{thJA} | 100 | K/W |

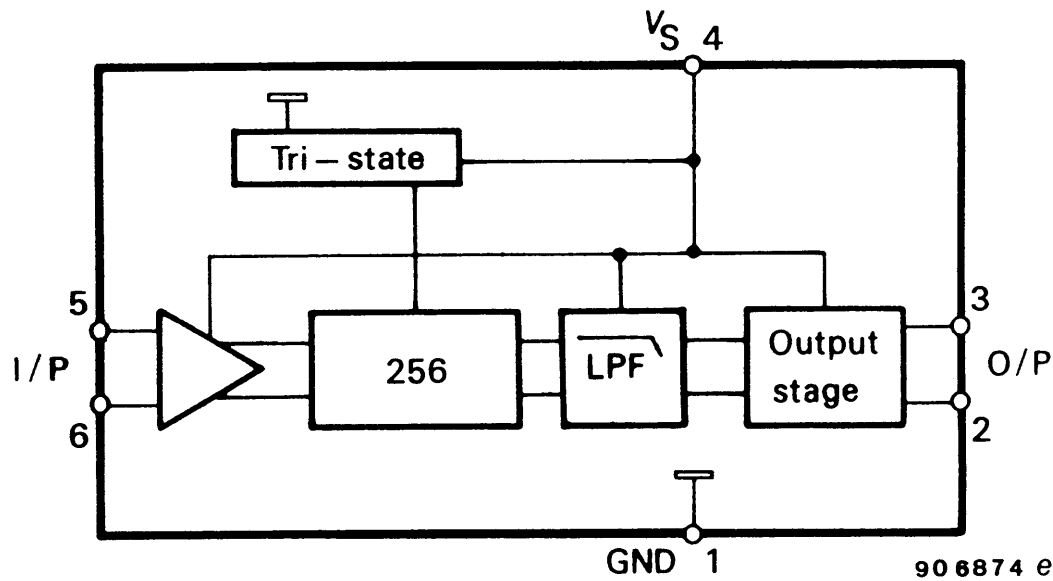


Figure 1. Block diagram

Pin Configuration

| Pin | Function |
|------|----------|
| 1 | Ground |
| 2, 3 | Output |

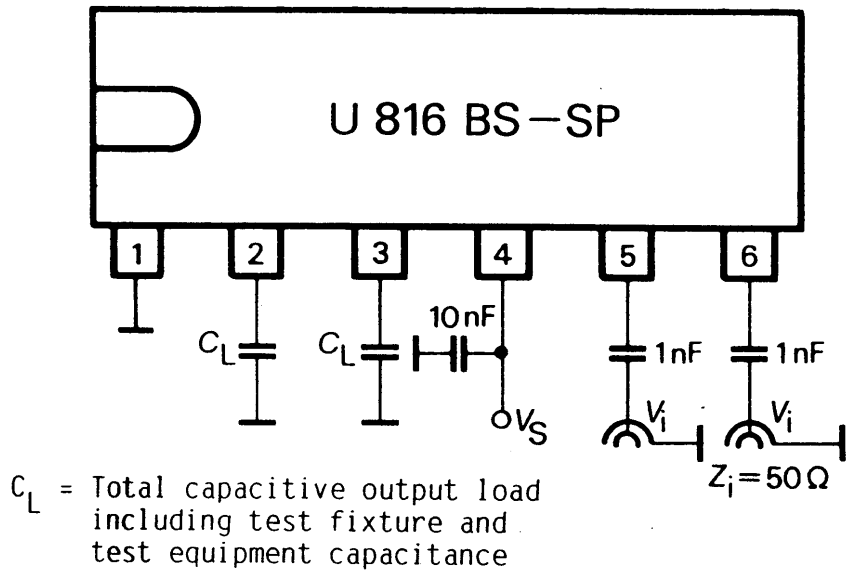
| Pin | Function |
|------|----------|
| 4 | V_S |
| 5, 6 | Input |

Electrical Characteristics

$V_S = 4.5$ to 5.5 V, $T_{amb} = 0$ to 70 °C, referred to test circuit, unless otherwise specified

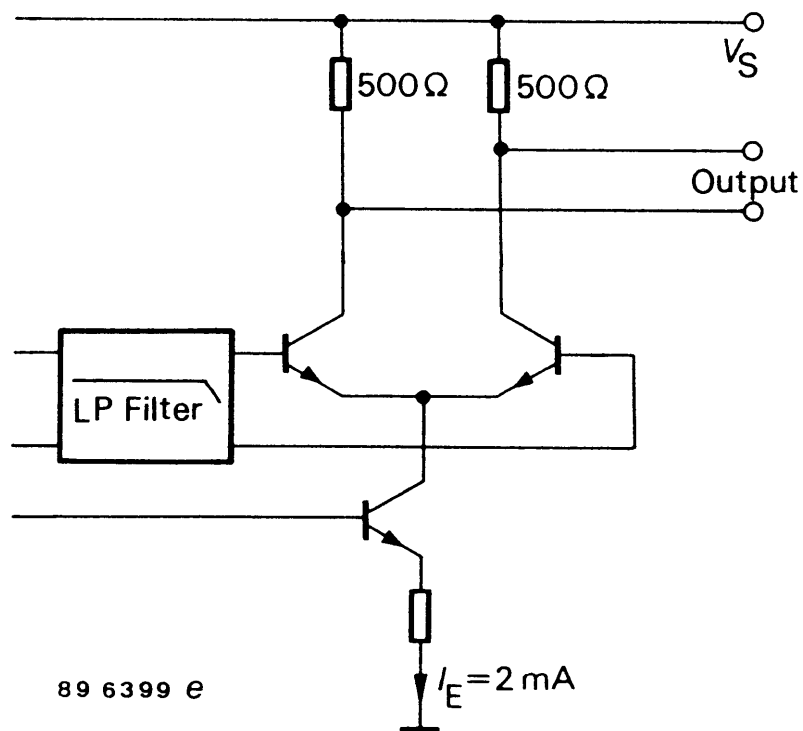
| Parameters | Test Conditions / Pin | Symbol | Min | Typ | Max | Unit |
|---------------------------------|--|------------|------|-----|-----|----------|
| Supply-voltage range | Pin 4 | V_S | 4.5 | | 5.5 | V |
| Supply current | $V_S = 5$ V Pin 4 | I_S | | 17 | 21 | mA |
| Input sensitivity ¹⁾ | $R_G = 50 \Omega$ | | | | | |
| | $f_i = 70$ to 1000 MHz Pin 5, 6 | v_i | | | 10 | mV |
| | $f_i = 1000$ to 1100 MHz Pin 5, 6 | v_i | | | 15 | mV |
| | $f_i = 1100$ to 1200 MHz Pin 5, 6 | v_i | | | 40 | mV |
| Large-signal compatibility | $R_G = 50 \Omega$ Pin 5, 6 | V_i | 300 | | | mV |
| Frequency range | | f_{imin} | | | 70 | MHz |
| | | f_{imax} | 1200 | | | MHz |
| Output stage | | | | | | |
| Balanced ECL output | $f_i \leq 1000$ MHz | | | | | |
| Voltage swing each output | $C_L = 13$ pF. SF = 1:256 Pin 2, 3 | V_O | 0.6 | | 1.2 | V_{pp} |
| Output impedance | Pin 2, 3 | Z_O | | 500 | | Ω |

¹⁾ RMS voltage calculated from the available power measured



90 68 75 e

Figure 2. Test circuit



89 6399 e

Figure 3. Output circuit (ECL output)

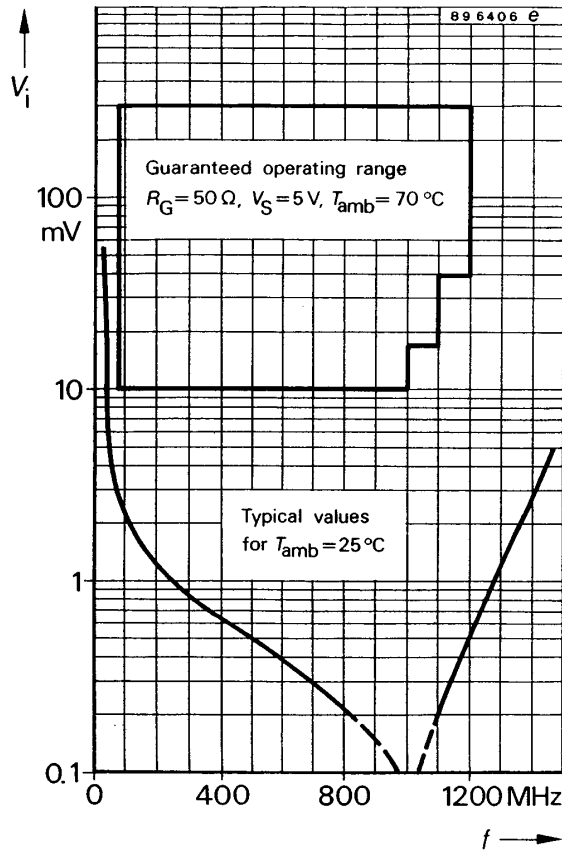
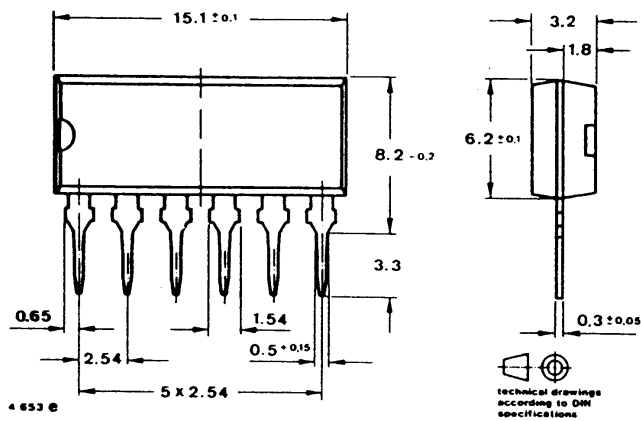


Figure 4. Input sensitivity

Dimensions in mm

Package: SIP6



Ozone Depleting Substances Policy Statement

It is the policy of **TEMIC TELEFUNKEN microelectronic GmbH** to

1. Meet all present and future national and international statutory requirements.
2. Regularly and continuously improve the performance of our products, processes, distribution and operating systems with respect to their impact on the health and safety of our employees and the public, as well as their impact on the environment.

It is particular concern to control or eliminate releases of those substances into the atmosphere which are known as ozone depleting substances (ODSs).

The Montreal Protocol (1987) and its London Amendments (1990) intend to severely restrict the use of ODSs and forbid their use within the next ten years. Various national and international initiatives are pressing for an earlier ban on these substances.

TEMIC TELEFUNKEN microelectronic GmbH semiconductor division has been able to use its policy of continuous improvements to eliminate the use of ODSs listed in the following documents.

1. Annex A, B and list of transitional substances of the Montreal Protocol and the London Amendments respectively
2. Class I and II ozone depleting substances in the Clean Air Act Amendments of 1990 by the Environmental Protection Agency (EPA) in the USA
3. Council Decision 88/540/EEC and 91/690/EEC Annex A, B and C (transitional substances) respectively.

TEMIC can certify that our semiconductors are not manufactured with ozone depleting substances and do not contain such substances.

We reserve the right to make changes to improve technical design and may do so without further notice.

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