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 l, 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

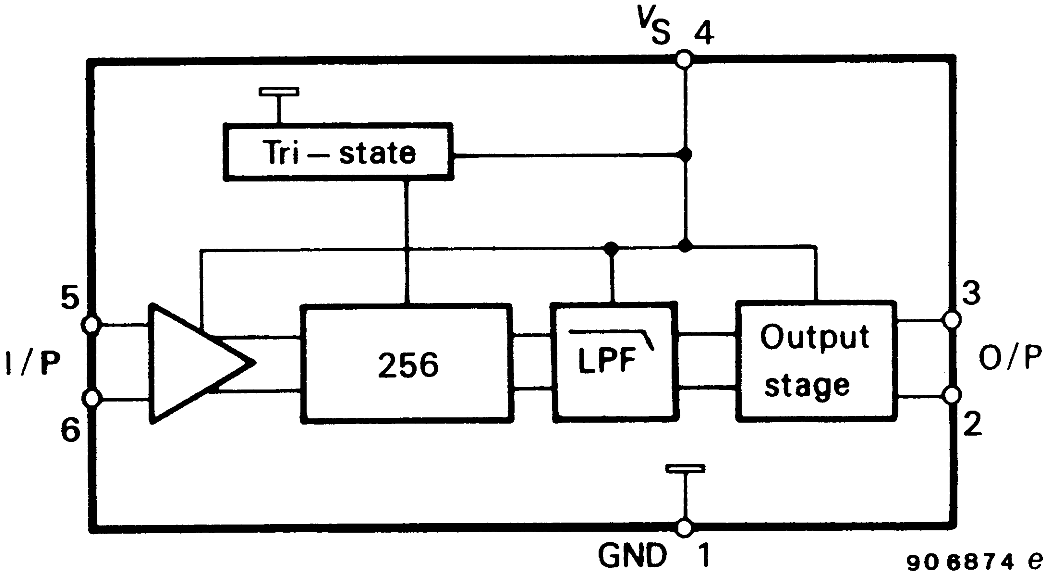


Figure 1. Block diagram

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 Ω					
	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 Ω Pin 5, 6	V_i	300			mV
Frequency range		f_{imin}			70	MHz
		f_{imax}	1200			MHz
Output stage						
Balanced ECL output	f_i ≤ 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

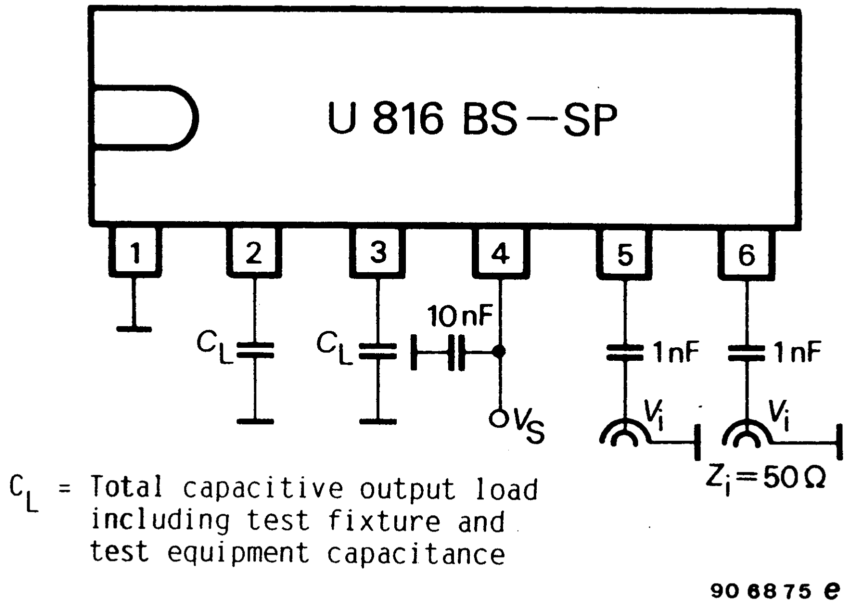


Figure 2. Test circuit

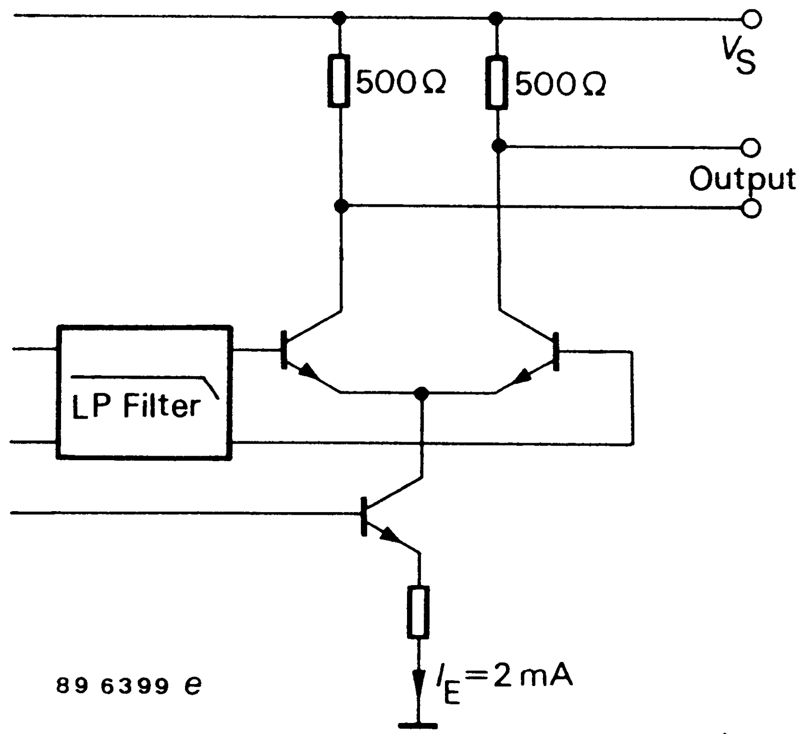


Figure 3. Output circuit (ECL output)

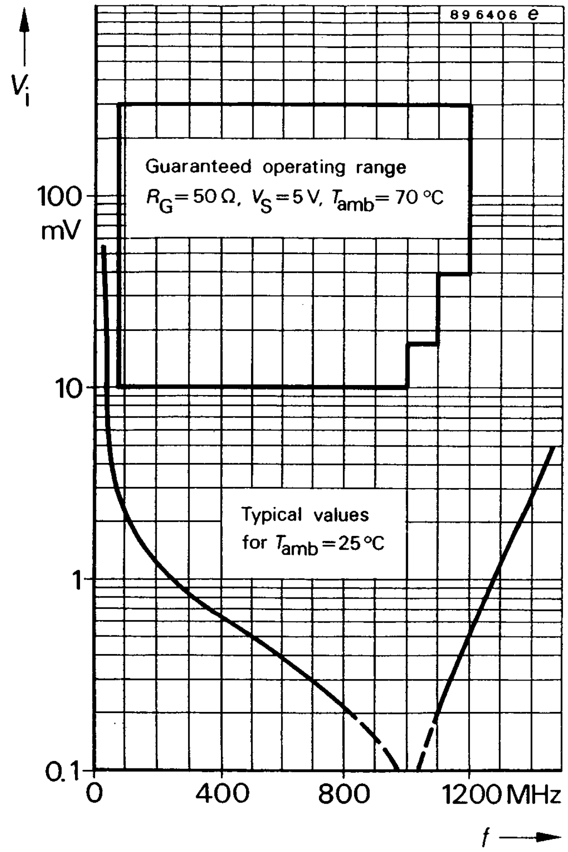
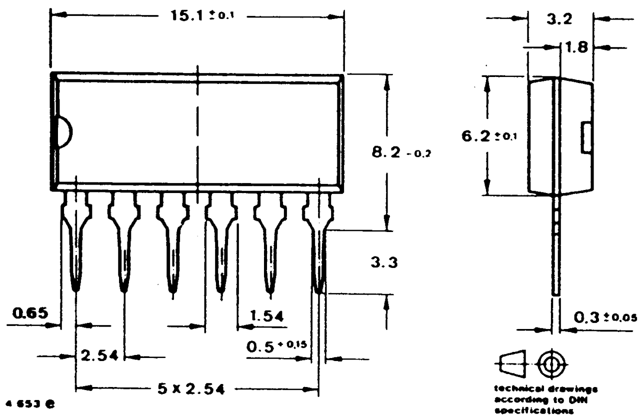


Figure 4. Input sensitivity

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.

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