

1.2 GHz Prescaler for PLL's in CATV and SAT TV Tuners

Technology: Bipolar

Features

- ECL output stage
- U 810 BS: ÷ 64
- U 811 BS: ÷ 128
- U 812 BS: ÷ 256
- High input sensitivity
- Low output impedance
- Low power consumption
- Electrostatic protection according to MIL-STD. 883

Case: TO 50 plastic

Absolute Maximum Ratings

Reference point Pin 2

Parameters	Symbol	Value	Unit
Supply voltage Pin 4	V_S	6	V
Input voltage range Pin 1	V_i	0 ... V_S	V
Junction temperature	T_j	125	°C
Storage temperature range	T_{stg}	-40 ... +125	°C
Ambient temperature range	T_{amb}	-25 ... +70	°C

Thermal Resistance

Parameters	Symbol	Maximum	Unit
Junction ambient 35 µm one sided Cu-coated epoxy PCB 40 x 35 mm, thickness 1.5 mm	R_{thJA}	130	K/W

Note

In order to avoid damage the IC must be handled as a MOS device.

The device is self oscillating without input signal

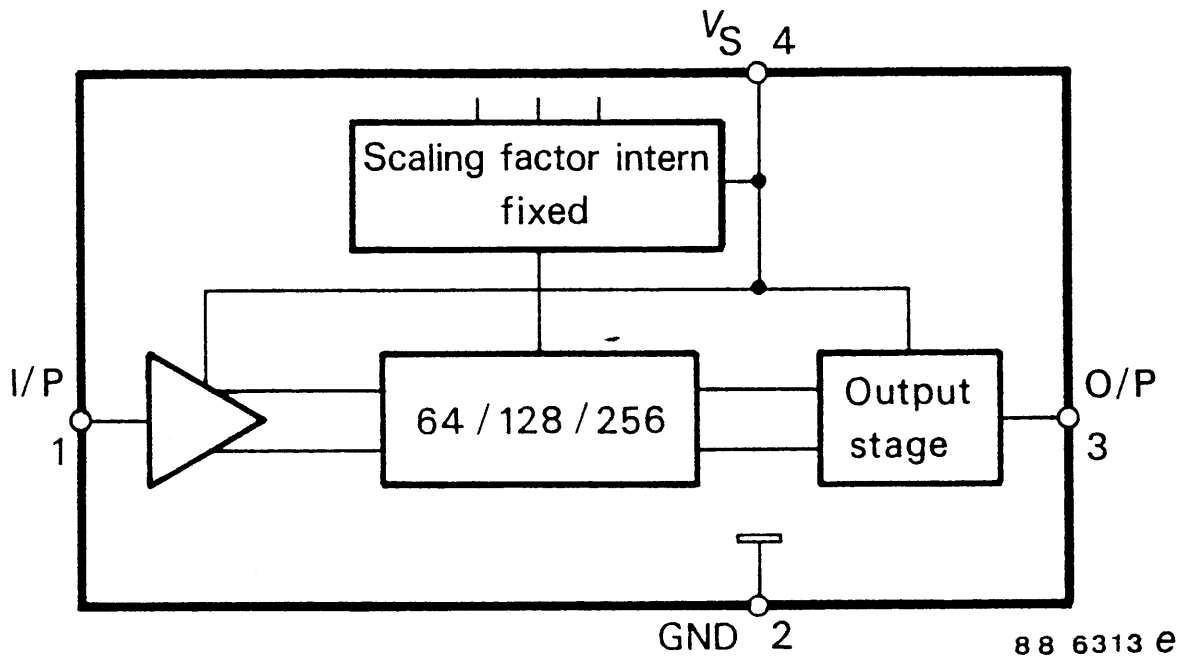


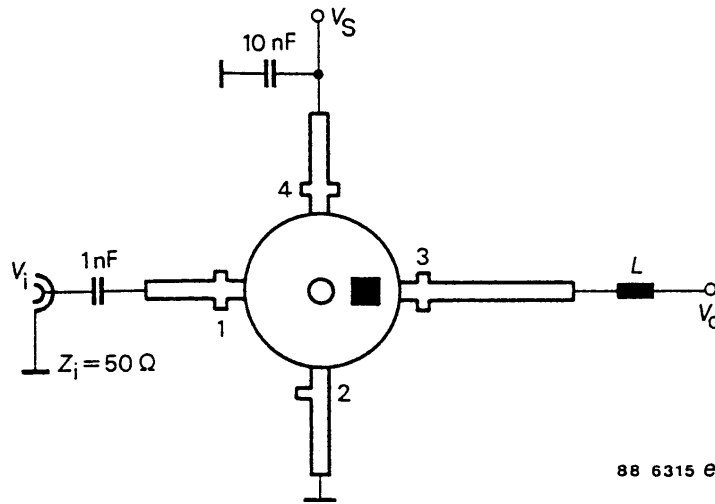
Figure 1 Block diagram

Electrical Characteristics

$V_S = 4.5 \dots 5.5 \text{ V}$, $T_{\text{amb}} = 0 \dots +70 \text{ }^\circ\text{C}$, unless otherwise specified

Parameters 200	Test Conditions / Pin	Symbol	Min	Typ	Max	Unit
Supply current	$V_S = 5 \text{ V}$ Pin 4	I_S		40	48	mA
Input sensitivity ¹⁾	$f_i = 70 \dots 1200 \text{ MHz}$, $R_G = 50 \text{ } \Omega$ Pin 1	V_i			20	mV
Large signal compatibility	$R_G = 50 \text{ } \Omega$ Pin 1	V_i	250			mV
Frequency range		$f_{i\text{min}}$ $f_{i\text{max}}$	1200		70	MHz MHz
Output stage						
ECL output voltage swing	$R_L = 10 \text{ K} / 13 \text{ pF}$ Pin 3	V_O	0.8			V_{PP}
Output impedance		Z_O		500		Ω

¹⁾ RMS-voltage calculated from the measured available power



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$L = 150 \text{ nH}$ (6 turns CuL 0.45 mm \varnothing on 4 mm \varnothing)

Figure 2 Test circuit

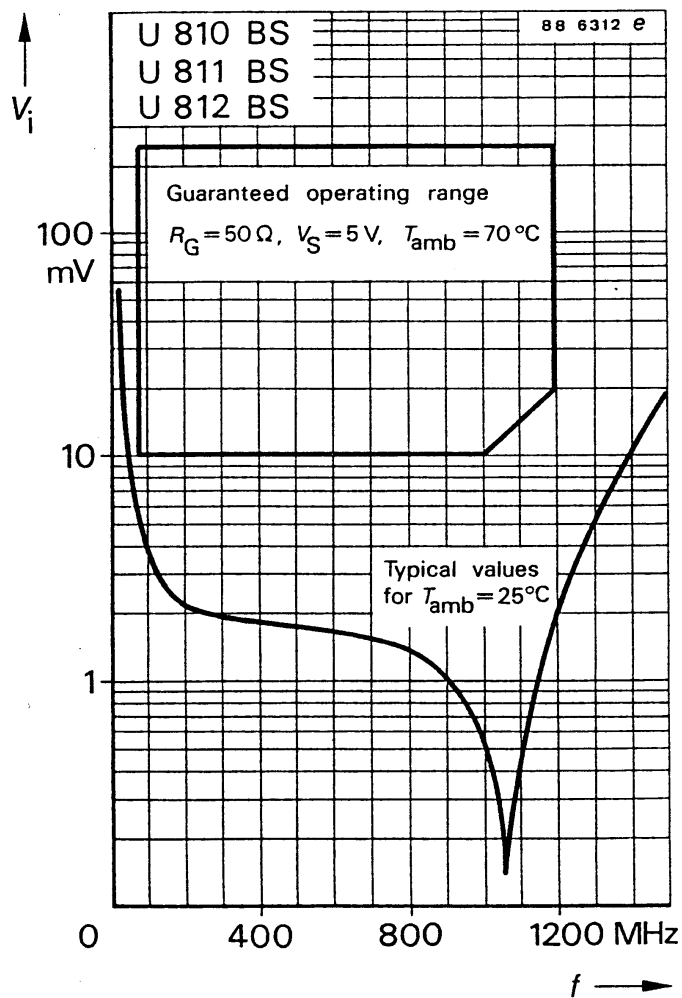


Figure 3 Input sensitivity

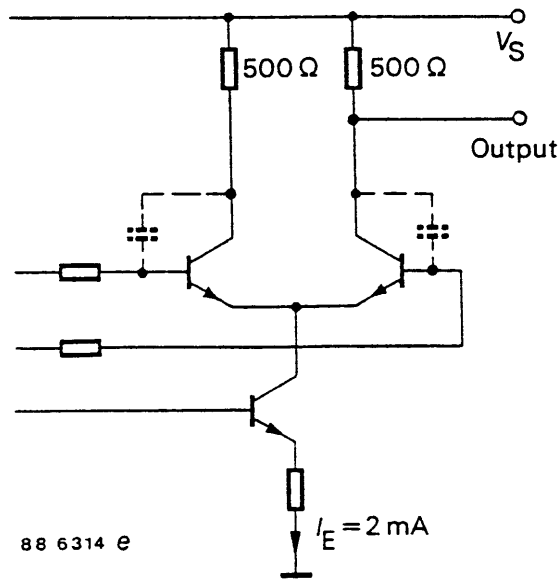
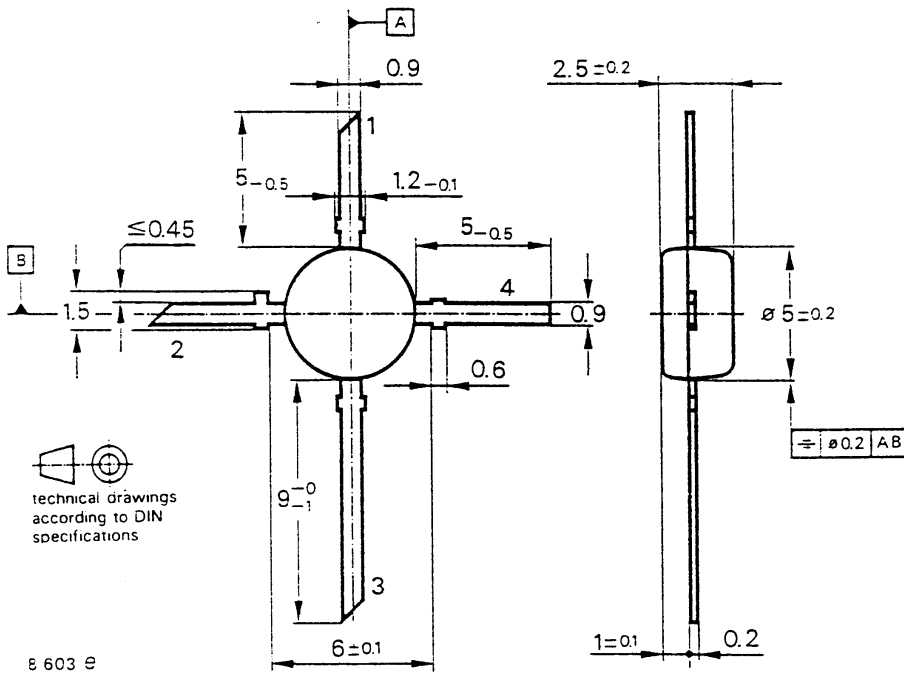


Figure 4 ECL output circuit

Dimensions in mm



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 and
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.

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

The Montreal Protocol (1987) and its London Amendments (1990) will soon 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 any 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 and
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 and do not contain ozone depleting substances.

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