

1.3-GHz Prescaler for CATV Tuners

Technology: Bipolar

Features

- TTL output
- ESD protected
- Low current consumption
- High input sensitivity
- Slope steepness of the output level adjustable at Pin 6
- Case: 8-pin dual-inline plastic

Block Diagram

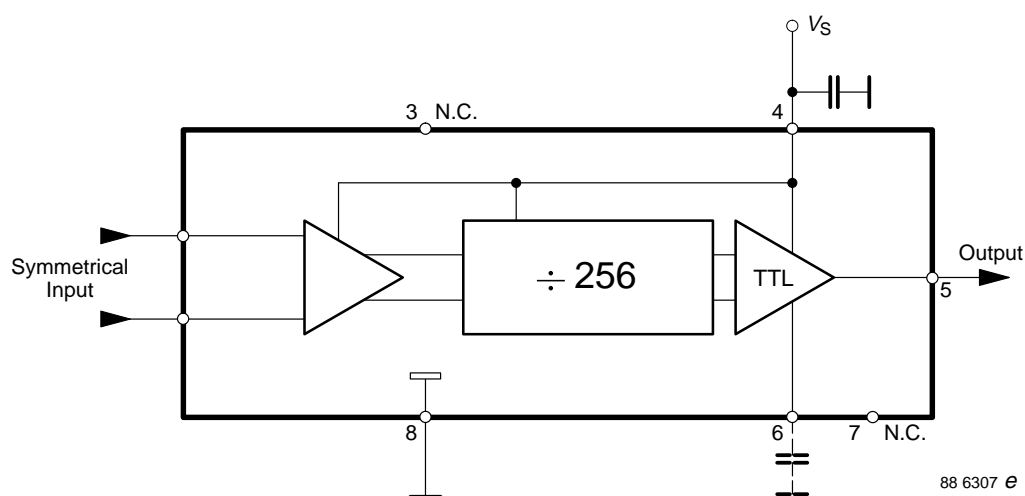


Figure 1. Block diagram

Ordering Information

Extended Type Number	Package	Remarks
U847BST	DIP8	

Absolute Maximum Ratings

Parameters	Symbol	Value	Unit
Supply voltage	Pin 4 V_S	6	V
Input-voltage range	Pins 1 and 2 V_i	0 to V_S	V
Junction temperature	T_j	125	°C
Storage-temperature range	T_{stg}	-40 to +125	°C
Ambient-temperature range	T_{amb}	-25 to +70	°C

Thermal Resistance

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

Pin Connection

Pin	Function
1, 2	Input
4	Supply voltage (V_S)
5	Output

Pin	Function
6	Open or capacitor-to-ground
8	Ground
3, 7	Not connected

Note:

In order to avoid damage, the prescaler must be handled as a MOS device.
The device is self-oscillating without input signal.

Electrical Characteristics

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

Parameters	Test Conditions / Pin	Symbol	Min.	Typ.	Max.	Unit
Supply current	$V_S = 5$ V Pin 4	I_S		35	48	mA
Input sensitivity ¹⁾	$R_G = 50 \Omega$, $f_i = 70$ MHz Pins 1 and 2	V_i		6	10	mV
	$f_i = 150$ to 1000 MHz	V_i		1	5	mV
	$f_i = 1300$ MHz	V_i		4	20	mV
Large-signal compatibility ¹⁾	$R_G = 50 \Omega$ Pins 1 and 2	V_i	300			mV
Frequency range		f_{imin}			70	MHz
		f_{imax}	1300			MHz
TTL output	Pin 5					
High level	$I_{OH} = 0.2$ mA	V_{OH}	3.3			V
Low level	$I_{OL} = -2$ mA	V_{OL}			0.4	V

¹⁾ RMS voltage calculated from the available power measured

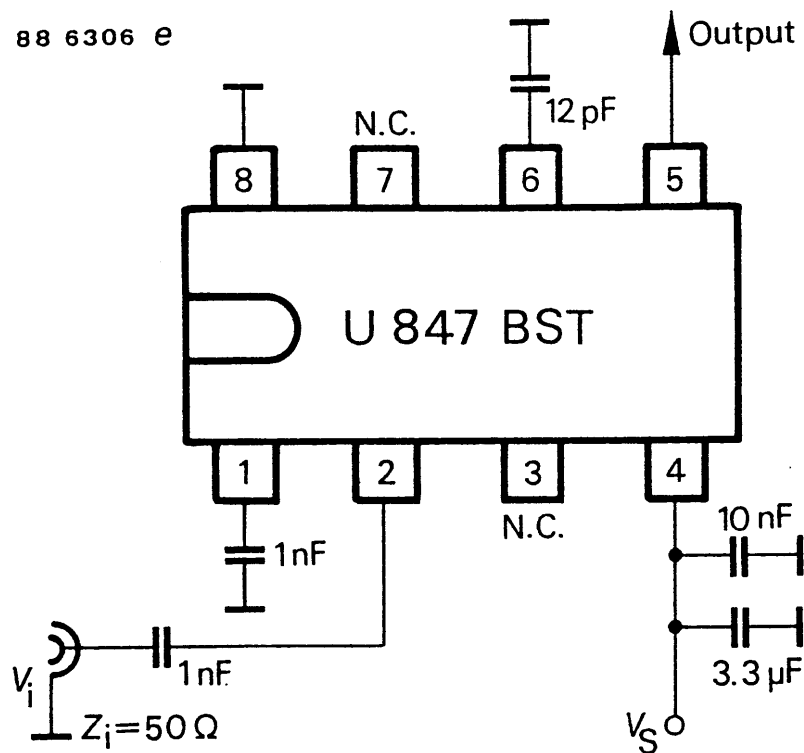


Figure 2. Test circuit

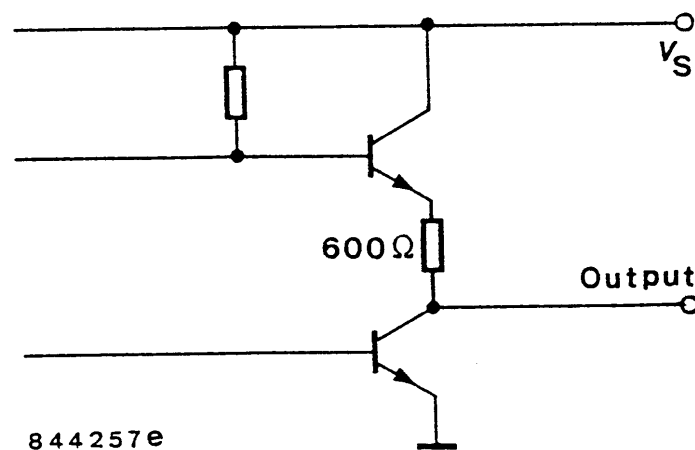


Figure 3. TTL output circuit

Package DIP8

9.8
9.5

1.64
1.44

4.8 max

0.5 min

3.3

0.58
0.48

2.54

7.62

8

5

7.77
7.47

6.4 max

0.36 max

9.8
8.2

technical drawings
according to DIN
specifications

13021

Ozone Depleting Substances Policy Statement

It is the policy of **TEMIC Semiconductor 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 Semiconductor GmbH 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 Semiconductor GmbH 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.

Parameters can vary in different applications. All operating parameters must be validated for each customer application by the customer. Should the buyer use TEMIC Semiconductors products for any unintended or unauthorized application, the buyer shall indemnify TEMIC Semiconductors against all claims, costs, damages, and expenses, arising out of, directly or indirectly, any claim of personal damage, injury or death associated with such unintended or unauthorized use.

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