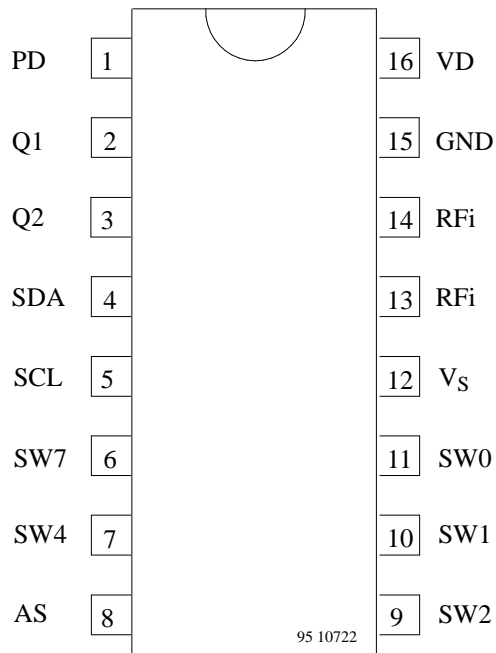




## Pin Configuration



Pin	Symbol	Function
1	PD	Charge pump output
2	Q1	Crystal
3	Q2	Crystal
4	SDA	Data in/output
5	SCL	Clock
6	SW7	Switching output open collector
7	SW4	Switching output open collector
8	AS	Address select
9	SW2	Switching output open collector
10	SW1	Switching output open collector
11	SW0	Switching output open collector
12	Vs	Supply voltage
13	RFi	RF input
14	RFi	RF input
15	GND	Ground
16	VD	Active filter output

## Ordering Information

Extended Type Number	Package	Remarks
U6206B-FPG3	SO16	Taped and reeled

## Absolute Maximum Ratings

All voltages are referred to GND (Pin 15).

Parameters			Symbol	Min.	Typ.	Max.	Unit
Supply voltage		Pin 12	Vs	-0.3		6	V
RF input voltage		Pins 13,14	RFi	-0.3		Vs	V
Bus input/output voltage		Pin 4	VSDA	-0.3		Vs	V
		Pin 5	VSCL	-0.3		Vs	V
SDA output current	Open collector	Pin 4	ISDA	-1		5	mA
Address select voltage		Pin 8	VAS	-0.3		Vs	V
Current switching outputs	Open collector	Pins 11,10 Pins 9,7,6	SW 0,1, 2,4,7	-1		15	mA
Junction temperature			Tj	-40		125	C
Storage temperature			Tstg	-40		125	C

## Operating Range

All voltages are referred to GND (Pin 15).

Parameters	Test Conditions / Pins	Symbol	Min.	Typ.	Max.	Unit
Supply voltage	Pin 12	Vs	4.5		5.5	V
Ambient temperature		T <sub>amb</sub>	0		70	C
Input frequency	PSC = 1 Pins 13,14	RFi	64		1300	MHz
Input frequency	PSC = 0 Pins 13,14	RFi	1		170	MHz
Progr. divider		SF	256		32767	

## Thermal Resistance

Parameters	Symbol	Value	Unit
SO16 small	RthJA	110	K/W

## Electrical Characteristics

Test Conditions (unless otherwise specified) : Vs = 5V, Tamb = 25 C.

Parameters	Test Conditions / Pins	Symbol	Min.	Typ.	Max.	Unit
Supply current	SW 0,1,2,4,7 = 0 ; PSC =1 Pin 12	Is	32	42	52	mA
	SW 0,1,2,4,7 = 0 ; PSC =0 Pin 12	Is	22	28	35	mA
<b>Input sensitivity</b>						
f <sub>i</sub> = 80 – 1000 MHz	PSC = 1 Pin 13	Vi 1)			10	mV
f <sub>i</sub> = 1300 MHz	PSC = 1 Pin 13	Vi 1)			40	mV
f <sub>i</sub> = 10 – 170 MHz	PSC = 0 Pin 13	Vi 1)			10	mV
Maximum input signal	PSC = 0 / 1 Pin 13	V <sub>imax</sub> 1)	315			mV
<b>Open coll. sw. outputs Pins 11, 10, 9, 7, 6; SW 0,1,2,4,7</b>						
Reverse current	V <sub>H</sub> = 13.5 V	IRH			10	uA
Saturation voltage	I <sub>L</sub> = 10 mA	VSL 2)			0.5	V
Phase detector output		PD				
Charge pump current "H"	5I = 1, VPD = 2 V	IPDH		± 180		uA
Charge pump current "L"	5I = 0, VPD = 2 V	IPDL		± 50		uA
Charge pump leakage current	T0 = 1, VPD = 2 V	IPDTRI		± 5		nA
<b>Bus inputs (SDA,SCL)</b>						
Input voltage		Vi "H" Vi "L"	3		5.5 1.5	V V
Input current	V <sub>SCL</sub> "H" = Vs V <sub>SCL</sub> "L" = 0 V	Ii "H" Ii "L"	- 20		10	uA
Output voltage SDA (open collector)	I <sub>SDA</sub> "L" = 2 mA	V <sub>SDA</sub> "L"			0.4	V
<b>Address selection (AS)</b>						
Input current	V <sub>AS</sub> "H" = Vs Pin 8 V <sub>AS</sub> "L" = 0 V Pin 8	Ii <sub>AS</sub> "H" Ii <sub>AS</sub> "L"	- 100		10	uA



## Oscillator Frequency Calculation

$$f_{osc} = f_{ref} * SF * PSF$$

fosc: Locked oscillator frequency

fref: Reference frequency 4MHz /512 =  
7.8125 kHz

SF: Scaling factor of programmable 15-bit-  
divider

PSF: Scaling factor of prescaler

## Pulse Diagram

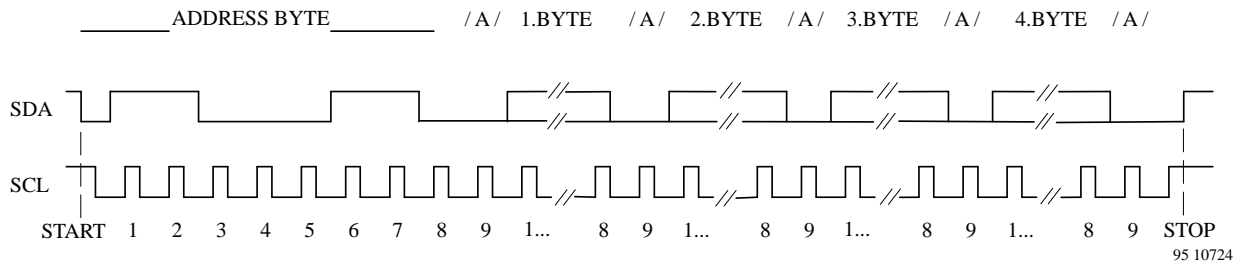


Figure 2.

### Data transfer examples

- START – ADR – PDB1 – PDB2 – CB1 – CB2 – STOP
- START – ADR – CB1 – CB2 – PDB1 – PDB2 – STOP
- START – ADR – PDB1 – PDB2 – CB1 – STOP
- START – ADR – CB1 – CB2 – PDB1 – STOP
- START – ADR – PDB1 – PDB2 – STOP
- START – ADR – CB1 – CB2 – STOP
- START – ADR – CB1 – STOP

### Description

- START= Start condition
- ADR= Address byte
- PDB1= Progr.divider byte 1
- PDB2= Progr. divider byte 2
- CB1= Control byte 1
- CB2= Control byte 2
- STOP= Stop condition

## Bus Timing

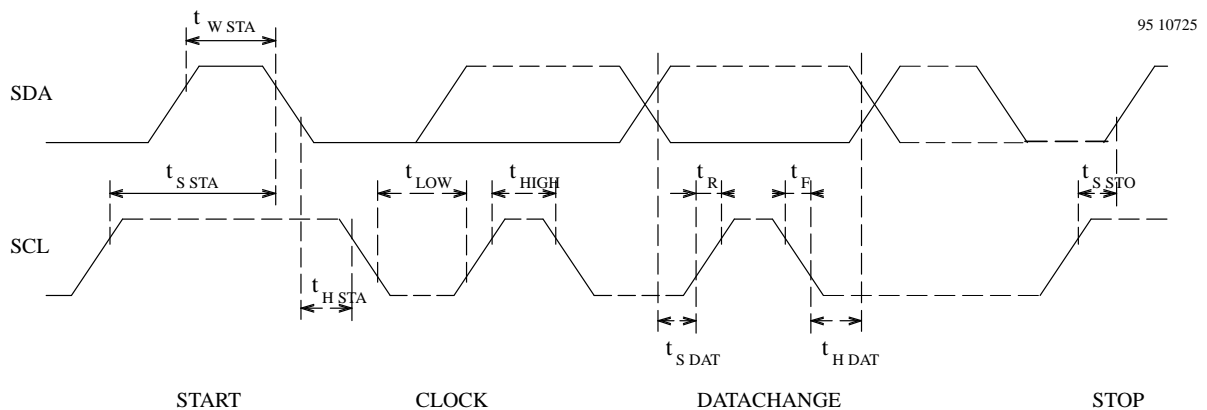


Figure 3.

- tS STA – Set – up time start
- tW STA – Waiting time start
- tH STA – Hold time start
- tLOW – "L" – Pulse width clock
- tHIGH – "H" – Pulse width clock

- tS DAT – Set – up time data
- tH DAT – Hold time data
- tS STO – Set – up time stop
- tR – Rise time
- tF – Fall time

## Typical Prescaler Input Sensitivity (PSC = 1) :

$V_i$  (mV RMS on 50 Ohm)

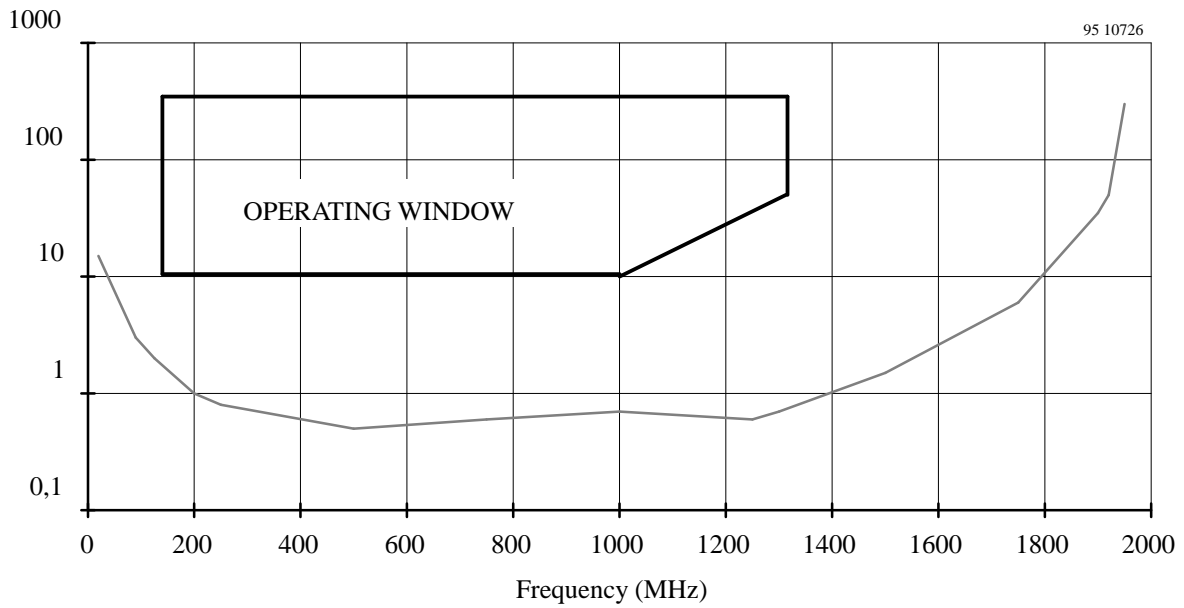


Figure 4.

## Typical Prescaler Input Sensitivity (PSC = 0) :

$V_i$  (mV RMS on 50 Ohm)

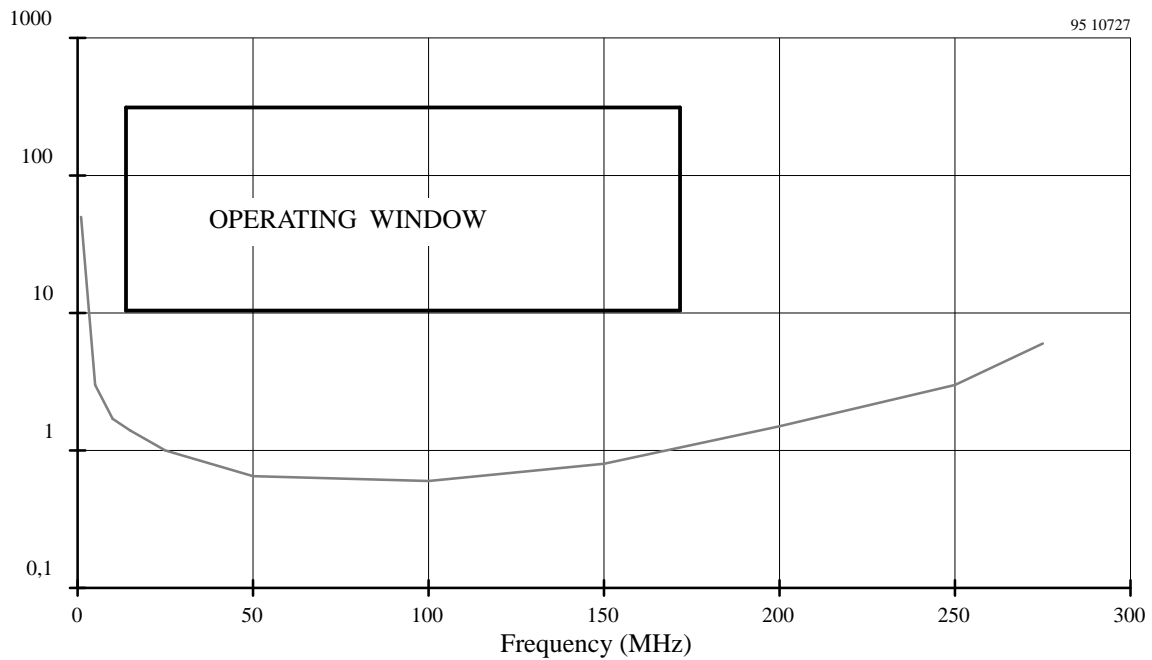


Figure 5.

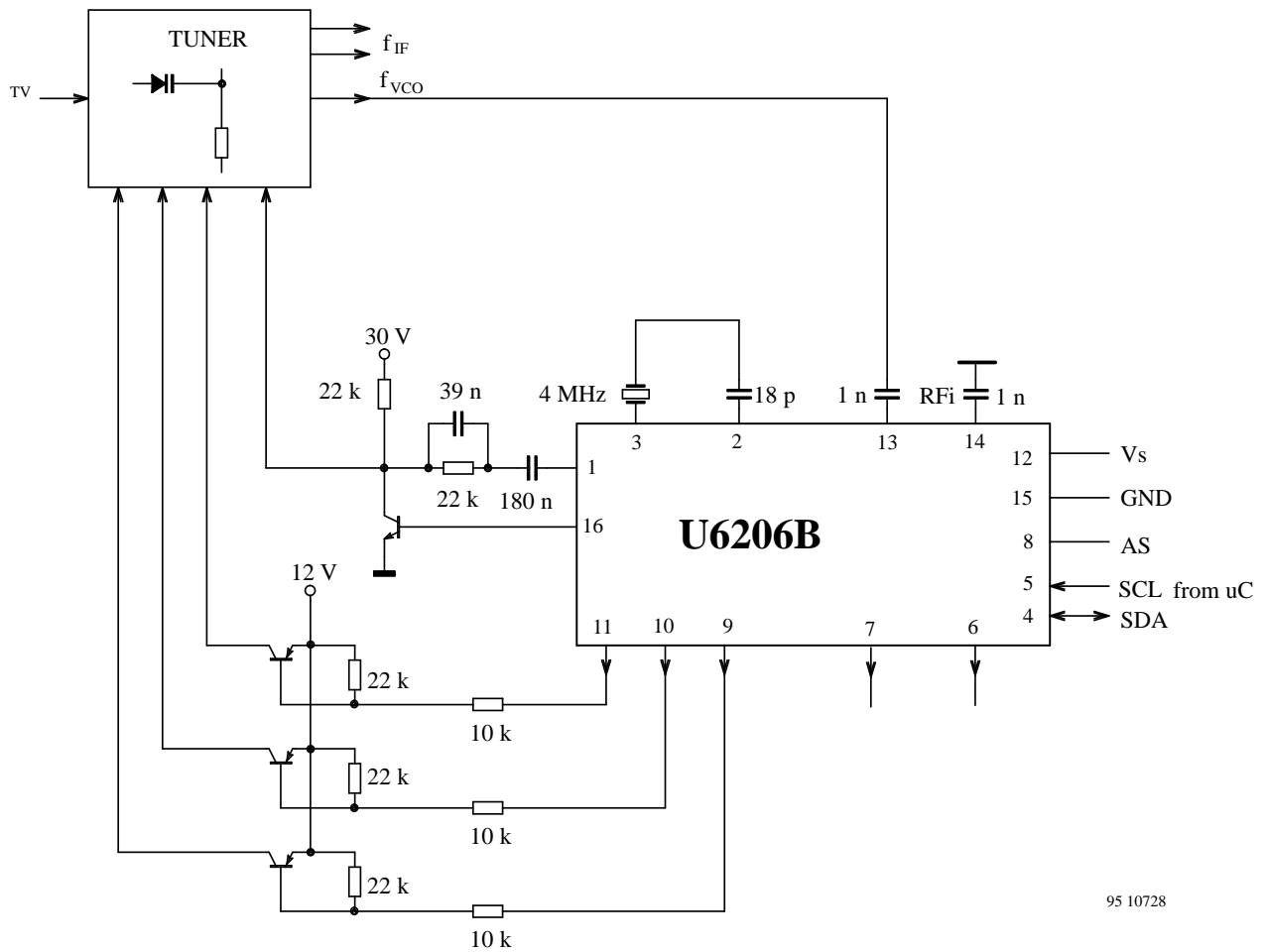
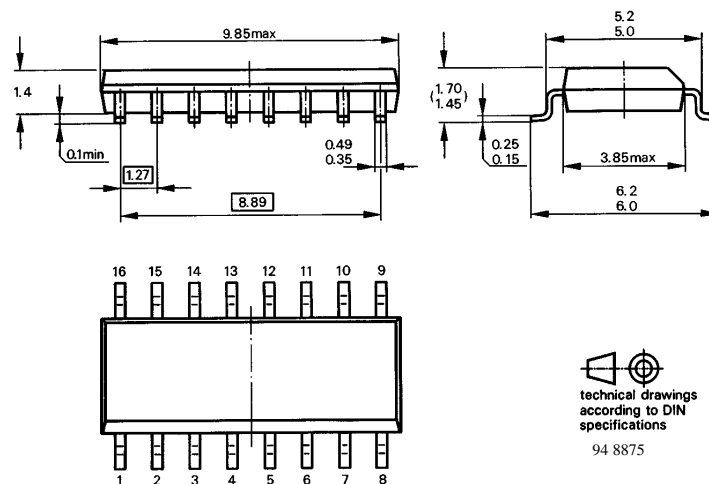


Figure 6.

## Dimensions in mm

Package: SO16



## 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.**

Parameters can vary in different applications. All operating parameters must be validated for each customer application by the customer. Should the buyer use TEMIC products for any unintended or unauthorized application, the buyer shall indemnify TEMIC 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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