



**FREQUENCY SYNTHESIZER FOR TV TUNER**

**Technology: Bipolar**

**Features:**

- o Integrated prescaler  $\div 8$  with preamplifier
- o Input frequency max. 1000 MHz
- o Tuning frequency steps 50 kHz
- o 15 Bit programable counter
- o Reference oscillator with 3.2 MHz crystal and  $\div 512$  counter
- o Phase detector (reference frequency 6.25 kHz)
- o 4 Programmable band switch driver (open collector)
- o Lock output
- o Microcomputer-controlled via 3-line bus

**Case:**

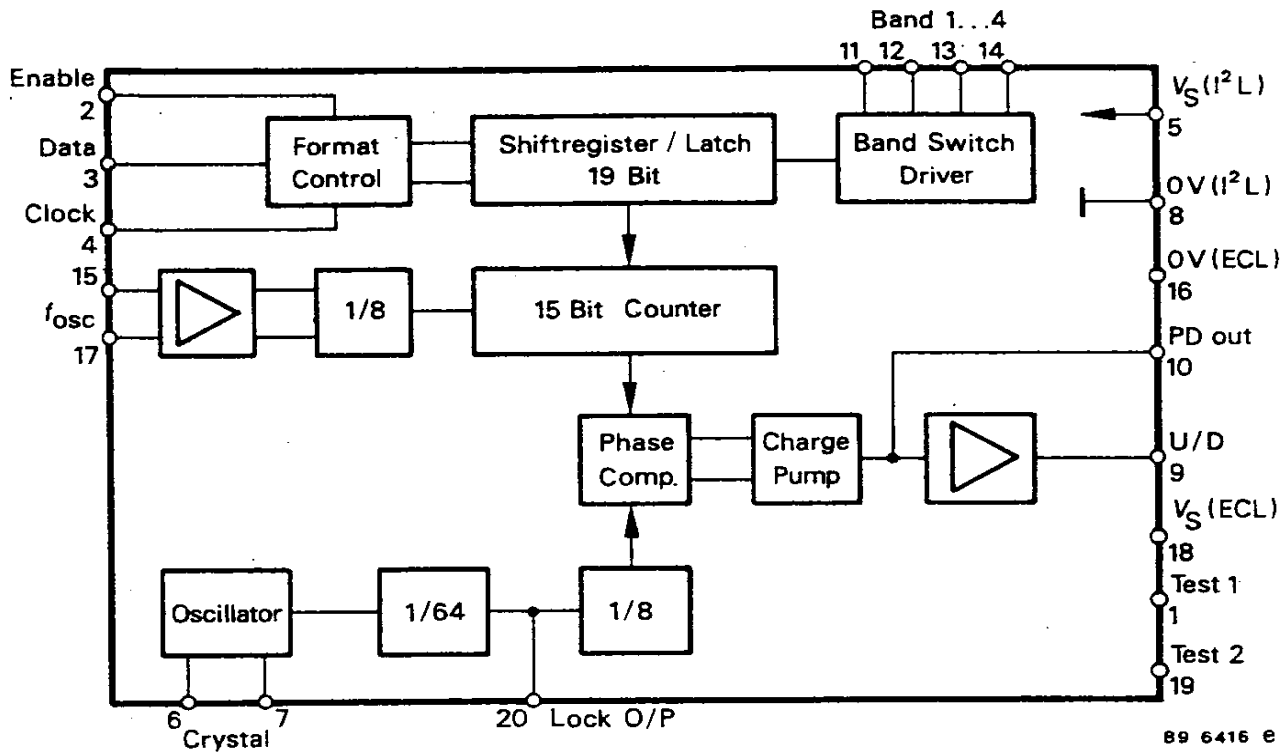
20 pin dual inline plastic

**Absolute maximum ratings**

Reference point pin 8, 16

Supply voltage	Pin 5,18	$V_S$	6	V
Input voltage range	Pin 15,17	$V_C$	0 ... $V_S$	V
Junction temperature		$T_j$	125	°C
Ambient temperature range		$T_{amb}$	-10 ... + 65	°C
Storage temperature range		$T_{stg}$	-40 ... + 125	°C

# U 6358 B



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Block diagram

## Pin configuration

Pin	Function	Pin	Function
1	Test 1	11	Band 1
2	Enable	12	Band 2
3	Data	13	Band 3
4	Clock	14	Band 4
5	Supply voltage ( $I^2L$ )	15	Oscillator input
6	Crystal	16	Ground (ECL)
7	Crystal	17	Oscillator input
8	Ground ( $I^2L$ )	18	Supply voltage (ECL)
9	Tuning voltage	19	Test 2
10	Charge pump output	20	Lock output

## Electrical characteristics

$V_S = 5\text{ V}$ ,  $T_{\text{amb}} = 25\text{ °C}$ , reference point pin 8,16  
unless otherwise specified

				Min.	Typ.	Max.	
Supply voltage	ECL	Pin 18	$V_{S1}$	4.5	5	5.5	V
	$I^2L$	Pin 5	$V_{S2}$	4.5	5	5.5	V
Supply current	ECL	Pin 18	$I_{S1}$		45		mA
	$I^2L$	Pin 5	$I_{S2}$		20		mA
Input sensitivity		Pin 15	$V_i$		10		mV
Large signal compatibility		Pin 15	$V_i$	300			mV
Progr. scaling factor			T	1024		32767	
Maximum voltage band switch outputs		Pin 11,12,13,14	$V_{\text{max}}$	12			V
Input level Data, Clock, Enable Test 1,2			$V_{IH}$ $V_{IL}$	3.0		0.8	V V
Output level (Test mode) Data, Clock			$V_{OH}$ $V_{OL}$	3.8		0.5	V V

## Calculation of the oscillator frequency:

$$f_{\text{osc}} = f_{\text{ref}} \cdot 8 \cdot T$$

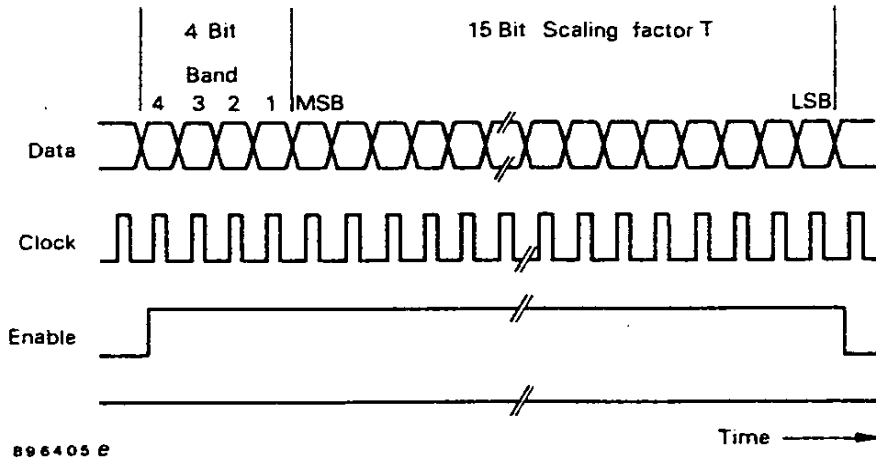
$f_{\text{osc}}$  : Locked oscillator frequency

$f_{\text{ref}}$  : Reference frequency 3.2 MHz/512 = 6.25 kHz

T : Programable scaling factor

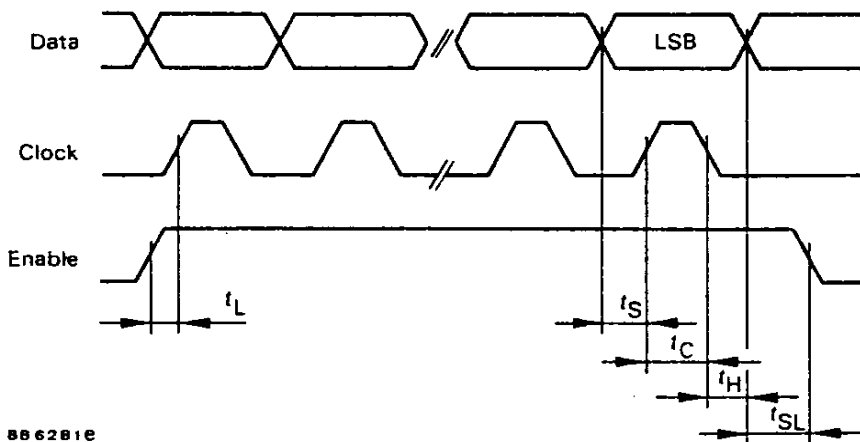
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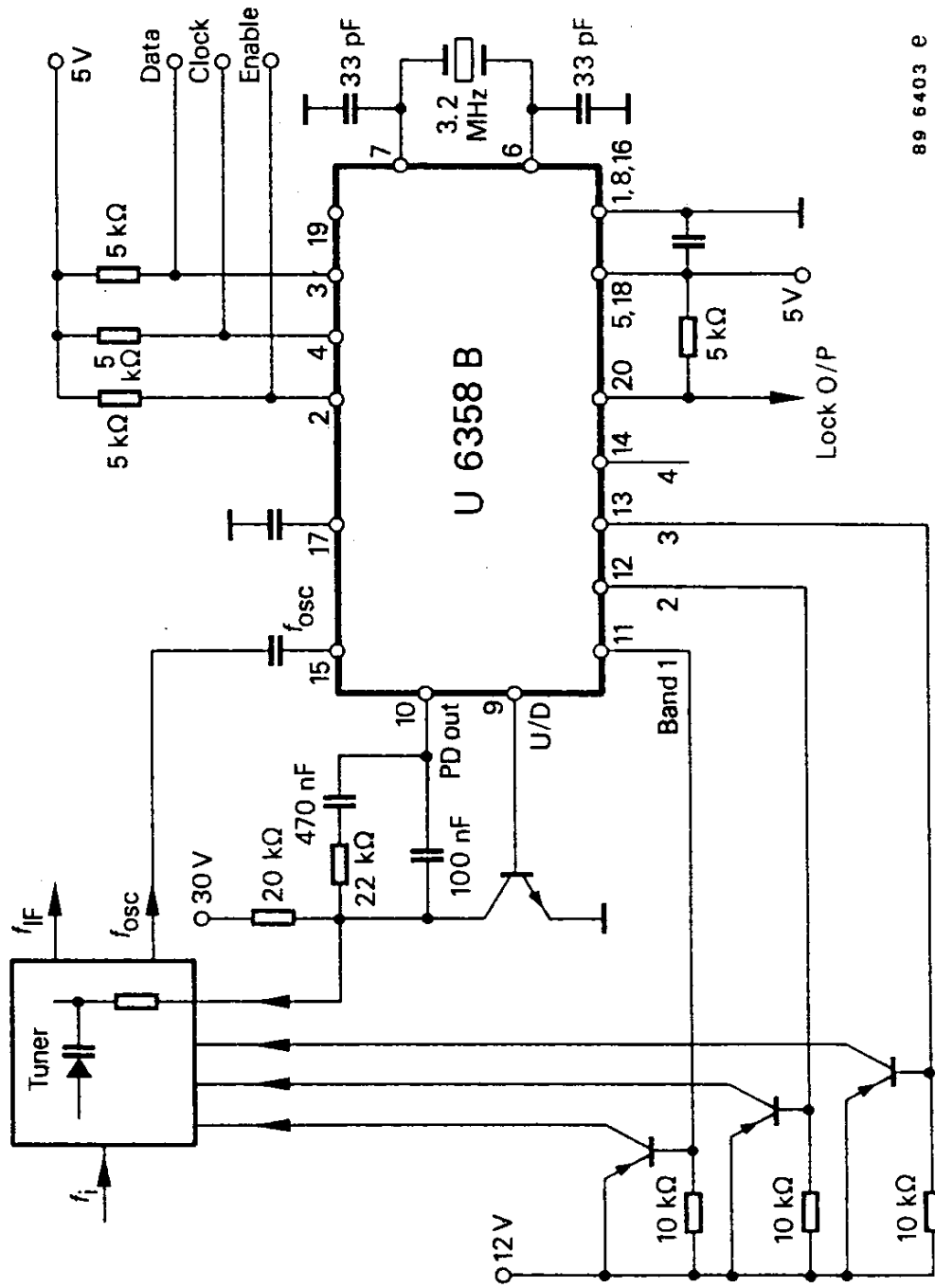
## Bus data format



## Bus timing

		Min.	Typ.	Max.
Set up time	$t_s$	2		$\mu\text{s}$
Enable hold time	$t_{SL}$	2		$\mu\text{s}$
Clock "H"-pulse width	$t_C$	2		$\mu\text{s}$
Enable set up time	$t_L$	10		$\mu\text{s}$
Data hold time	$t_H$	2		$\mu\text{s}$





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Application circuit

