1.3 GHz bi-directional I²C-bus controlled synthesizer TSA5515T

GENERAL DESCRIPTION

The TSA5515T is a single chip PLL frequency synthesizer designed for TV tuning systems. Control data is entered via the I²C-bus; five serial bytes are required to address the device, select the oscillator frequency, programme the three output ports and set the charge-pump current. A flag is set when the loop is “in-lock”. Another flag is set when a power dip occurs on the supply line. These flags are read out of the TSA5515T on SDA line (one status byte) during a READ operation. The device has 4 programmable addresses, programmed by applying a specific voltage on the AS pin. The phase comparator operates at 7.8125 kHz when a 4 MHz crystal is used.

FEATURES

- Complete 1.3 GHz single-chip system
- Low power 5 V, 35 mA
- I²C-bus programming
- In-lock flag
- Varicap drive disable
- Low radiation
- Address selection for Picture-In-Picture (PIP), DBS tuner, etc.
- 3 bus-controlled output ports
- Power-down flag
- Available in SOT108A package

APPLICATIONS

- TV tuners
- VCR tuners

QUICK REFERENCE DATA

SYMBOL	PARAMETER	MIN.	TYP.	MAX.	UNIT
V_{CC}	supply voltage	–	5	–	V
I_{CC}	supply current	–	35	–	mA
Δf	frequency range	64	–	1300	MHz
$V_{I\ (RMS)}$	input voltage level (RMS value)				
	80 MHz to 150 MHz	12	–	300	mV
	150 MHz to 1 GHz	9	–	300	mV
	1 GHz to 1.3 GHz	40	–	300	mV
f_{XTAL}	crystal oscillator	3.2	4	4.48	MHz
I_O	open-collector output current				
	P7	–	–	5	mA
	P1, P2	–	–	20	mA
T_{amb}	operating ambient temperature range	–10	–	80	°C
T_{stg}	storage temperature range	–40	–	125	°C
$R_{th\ j\text{-}a}$	thermal resistance	–	110	–	K/W

ORDERING INFORMATION

EXTENDED TYPE NUMBER	PACKAGE			
	PINS	PIN POSITION	MATERIAL	CODE
TSA5515T	14	SO	plastic	SOT108A(1)

Note

1. SOT108-1; 1996 December 3.