



# BIPOLAR ANALOG INTEGRATED CIRCUIT

## $\mu$ PC1486, $\mu$ PC1487C

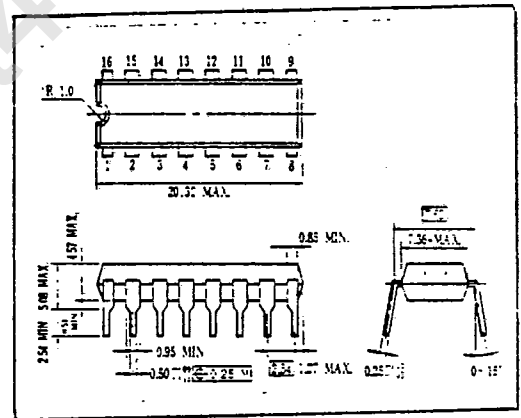
### DTS INTERFACE FOR TV

The  $\mu$ PC1486C or the  $\mu$ PC1487C is an interface IC for PLL frequency synthesizer digital tuning system of TV. This IC contains all circumferential function block of PLL system, So it can reduce many external components. This IC, with the  $\mu$ PD1709C (PLL & controller) and the  $\mu$ PB562AC (prescaler), constitutes a high performance PLL tuning system of TV. It's packed in 16 pins dual in-line package.

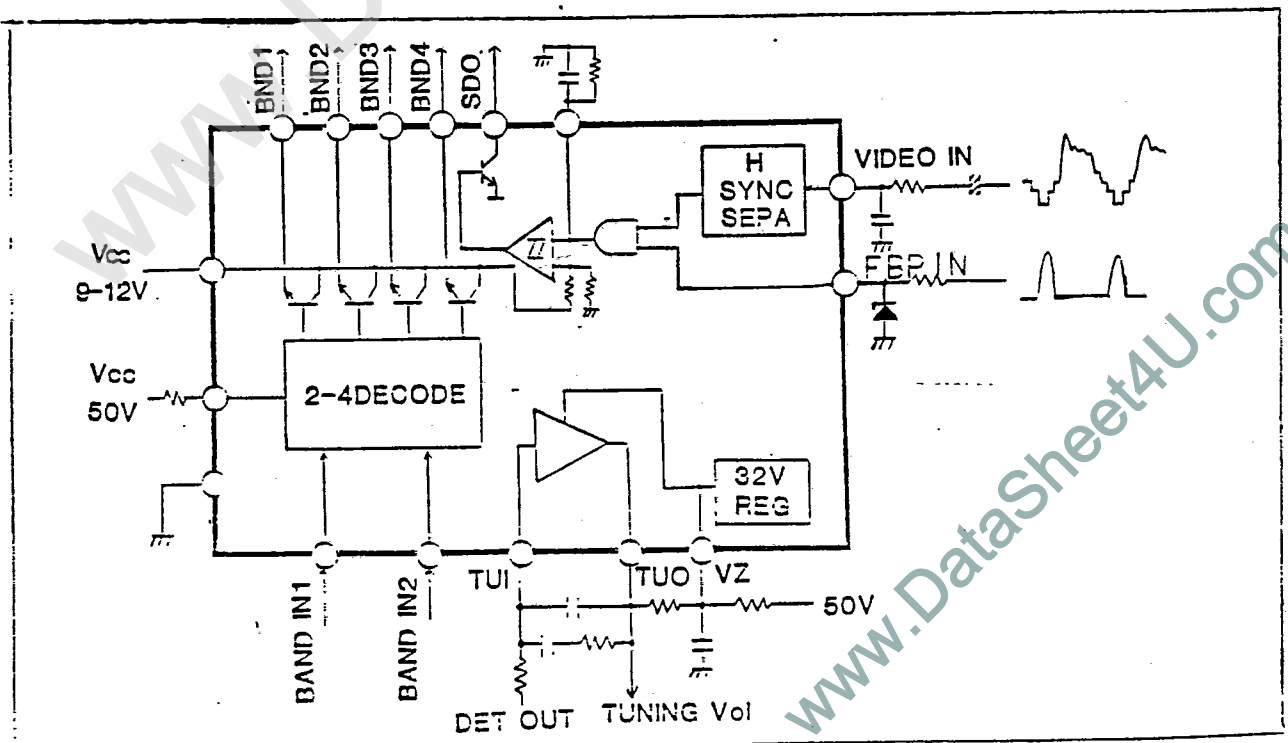
#### FEATURES

- It contains all circumferential function block of PLL system.
- Internal synch. separator for station detector.
- Band output : large supply current and low saturation voltage.  
 $I_{OH} = -40 \text{ mA}$  ;  $V_{Osat} = 0.3 \text{ V TYP.}$
- Compact package : 16 pins DIP.

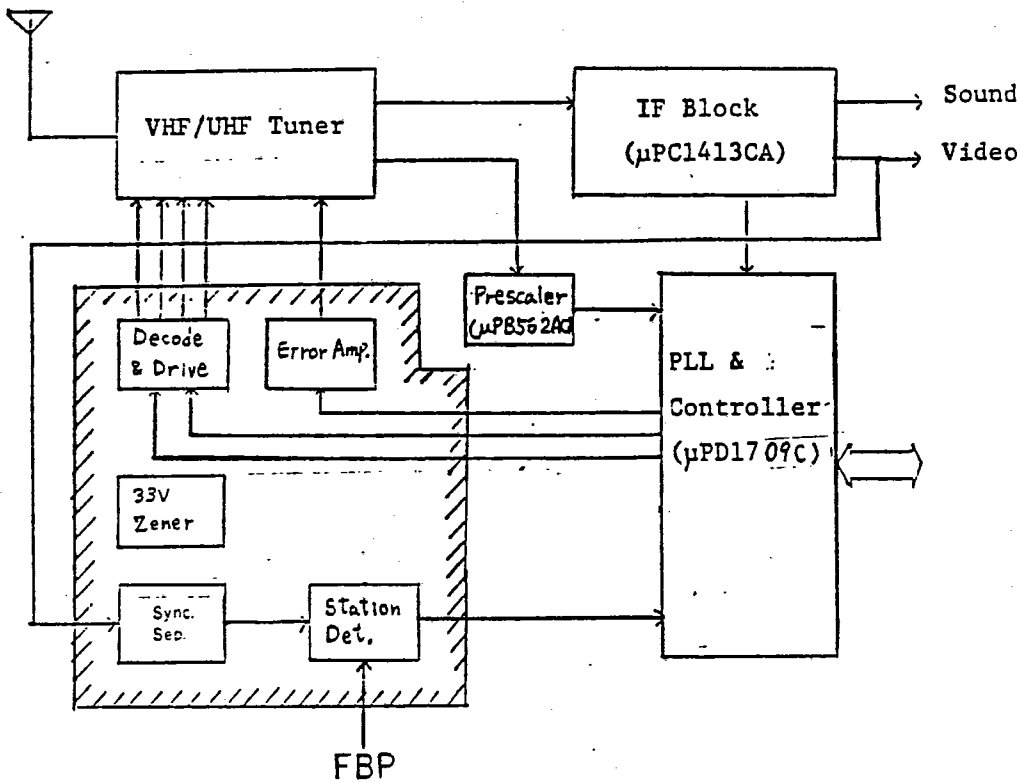
#### PACKAGE DIMENSIONS in millimeters



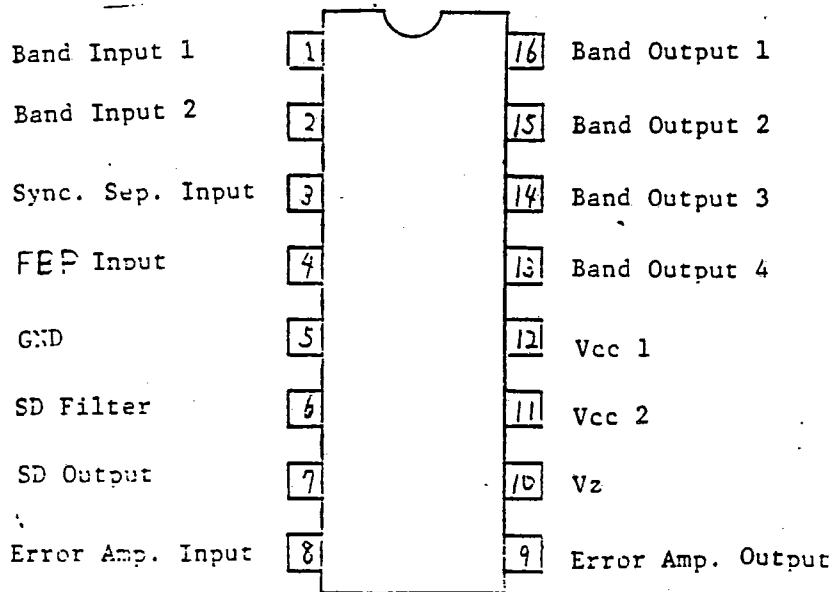
#### IC BLOCK DIAGRAM



**BLOCK DIAGRAM**



**PIN CONNECTION (Top View)**



ABSOLUTE MAXIMUM RATINGS ( $T_a=25\pm 3^\circ\text{C}$ )

RATINGS	SYMBOL	CONDITION	LIMIT	UNIT
Supply Voltage	$V_{CC}$		14.4	V
Band Output Current	$I_{OH}$		-60	mA
Band Output Supply Voltage	$V_{OL}$		-15	V
Vz Current	$I_z$		15	mA
SD Output Supply Voltage	$V_{OH}$		15	V
Band Input Voltage	$V_T$		0 ~ $V_{CC}$	V
Sync. Sep. Input Voltage	$V_{CV}$		0 ~ 5	V <sub>p-p</sub>
Error Amp. Input Voltage	$V_{AT}$		0 ~ $V_{CC}$	V
Error Amp. Output Current	$I_{AO}$		-5	mA
FBP Input Voltage	$V_{FBP}$		$V_{CC}$	V <sub>p</sub>
Power Dissipation	$P_D$	$T_a=65^\circ\text{C}$	600	mW
Operating Temperature	$T_{opt}$		-20 ~ +65	$^\circ\text{C}$
Storage Temperature	$T_{stg}$		-40 ~ +150	$^\circ\text{C}$

## RECOMMENDED OPERATING CONDITION

CHARACTERISTIC	SYMBOL	RECOMMENDED VALUE	UNIT
Supply Voltage	$V_{CC}$	8.1 ~ 13.2	V
Band Input High Level Voltage	$e_{BIH}$	3.2 ~ 5.5	V <sub>DC</sub>
Band Input Low Level Voltage	$e_{BIL}$	0 ~ 0.8	V <sub>DC</sub>
Video Signal Input Voltage	$e_{iV}$	2	V <sub>p-p</sub>
FBP Input Voltage	$e_{FBP}$	3.5 ~ $V_{CC}$	V <sub>p</sub>

ELECTRICAL CHARACTERISTICS ( $T_a=25\pm 3^\circ\text{C}$ ,  $V_{cc}=12\text{V}$ )

CHARACTERISTIC	SYMBOL	TEST CONDITION	MIN.	TYP.	MAX.	UNIT
Supply Current	$I_{cc}$	Error Amp. Output: High Band Output: $V_{cc}$	2.0	6.0	12.0	mA
Band Input Threshold Voltage	$V_{TH}$		1.0	2.0	3.0	$V_{DC}$
Band Output Saturation Voltage	$V_{Osat}$	$I_{OH} = -40\text{mA}$	-	0.3	0.7	V
Band Output Leak Current	$I_{OL}$	$V_{OL} = -15\text{V}$	-	-	-50	$\mu\text{A}$
Zener Stabilized Voltage	$V_z$	$I_z = 5\text{mA}$	31	33	35	V
Stabilized Voltage Temperature Drift	$\Delta V_z / \Delta T$	$T_a = -20 \sim +65^\circ\text{C}$ , $I_z = 5\text{mA}$	-5	0	+5	$\text{mV}/^\circ\text{C}$
Dynamic Resistance	$r_z$	$I_z = 5\text{mA}$	-	10	25	$\Omega$
Error Amp. Input Bias Current	$I_{BIAS}$		-	-	200	nA
Error Amp. Minimum Output Voltage	$V_{AOI}$		-	0.2	0.5	V

CHARACTERISTIC	SYMBOL	TEST CONDITION	MIN.	TYP.	MAX.	UNIT
Error Amp. Maximum Output Voltage	$V_{AOH}$		$V_z-1.5$	$V_z-0.6$	-	V
Error Amp. Reference Voltage	$V_{Aref}$		1.5	2.0	2.5	V
Comperator Reference Voltage	$V_{cref1}$	No signal → Signal	6.5	7.0	7.5	V
Comperator Reference Voltage	$V_{cref2}$	Signal → No signal	4.5	5.0	5.5	V
SD Output Low Level Voltage	$V_{OL}$	$I_{OL}=1mA$	-	0.2	0.5	V
SD Output Leak Current	$I_{OH}$	$V_{OH}=13.2V$	-	-	5	$\mu A$

## BAND OUTPUT PATTERN

Pattern A ( $\mu$ PC1486C)

B.I.1	B.I.2	B.O.1	B.O.2	B.O.3	B.O.4
L	L	H	Z	Z	Z
H	L	Z	H	Z	Z
L	H	Z	Z	H	Z
H	H	Z	Z	Z	H

Pattern B ( $\mu$ PC1487C)

B.I.1	B.I.2	B.O.1	B.O.2	B.O.3	B.O.4
L	L	Z	Z	H	Z
H	L	H	Z	H	Z
L	H	H	H	H	Z
H	H	H	Z	Z	H

Z : High Impedance

APPLICATION CIRCUIT

