NEC
ELECTRON DEVICE

BIPOLAR ANALOG INTEGRATED CIRCUIT
μPC1486, μPC1487C

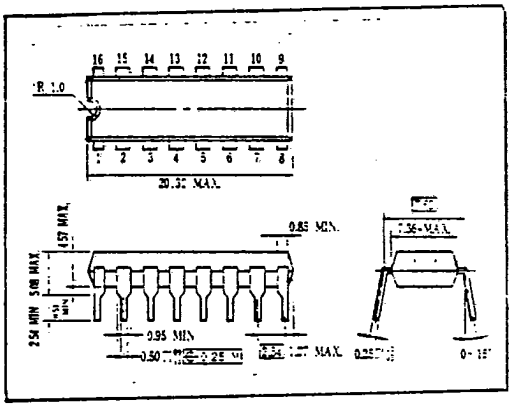
DTS INTERFACE FOR TV

The μPC1486C or the μPC1487C 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 compornents. This IC, with the μPD1709C (PLL & controller) and the μPB562AC(prescaler), constitutes a high performance PLL tuning system of TV. It's packed in 16 pins dual in-line package.

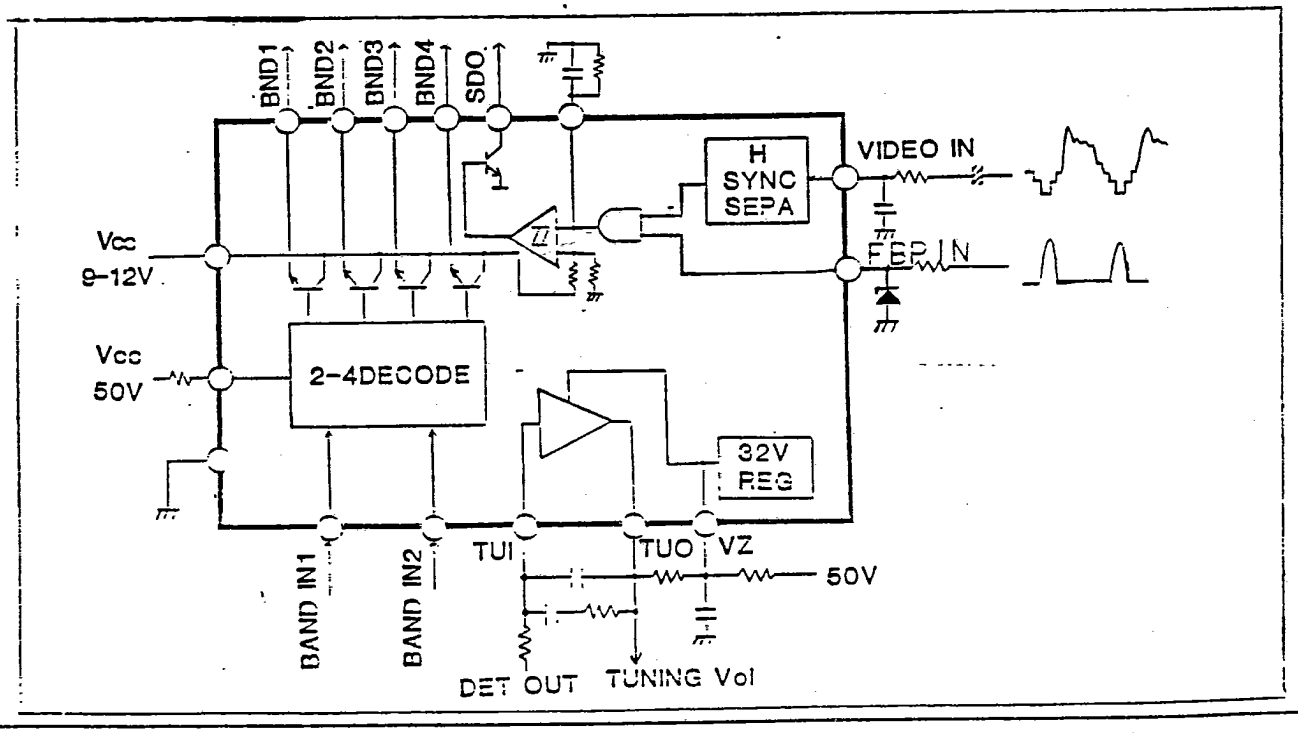
FEATURES

- 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 mA ; V_{Osat} = 0.3 V TYP.
- Compact package : 16 pins DIP.

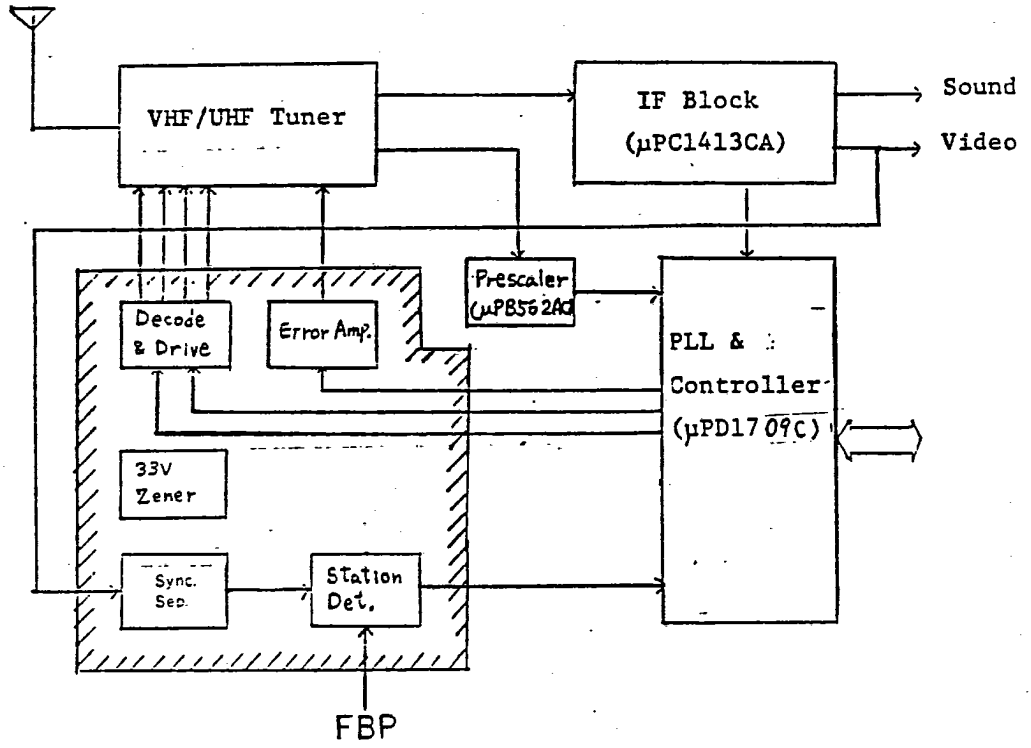
PACKAGE DIMENSIONS in millimeters



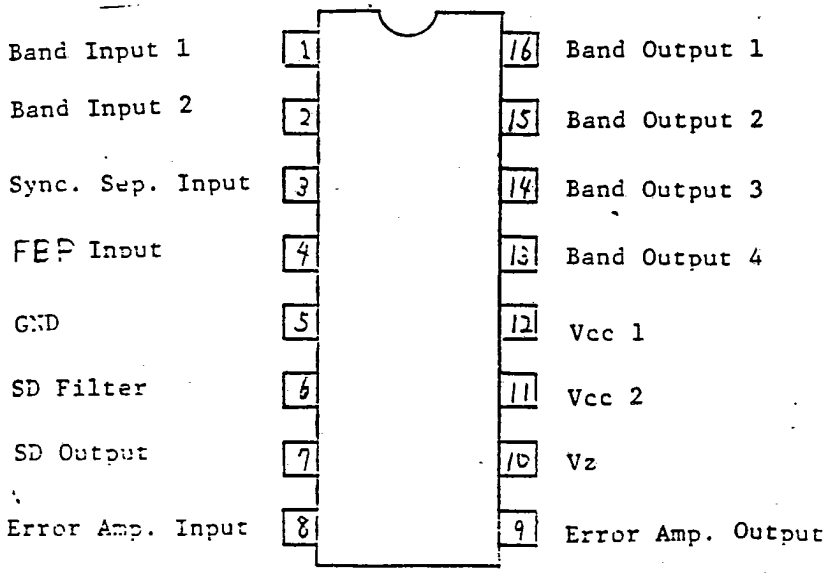
IC BLOCK DIAGRAM



BLOCK DIAGRAM



PIN CONNECTION (Top View)



ABSOLUTE MAXIMUM RATINGS (Ta=25±3°C)

RATINGS	SYNBOL	CONDITION	LIMIT	UNIT
Supply Voltage	Vcc		14.4	V
Band Output Current	I_{OH}		-60	mA
Band Output Supply Voltage	V_{OL}		-15	V
Vz Current	Iz		15	mA
SD Output Supply Voltage	V_{OH}		15	V
Band Input Voltage	V_T		0 ~ Vcc	V
Sync. Sep. Input Voltage	V_{CV}		0 ~ 5	Vp-p
Error Amp. Input Voltage	V_{AI}		0 ~ Vcc	V
Error Amp. Output Current	I_{AO}		-5	mA
FBP Input Voltage	V_{FBP}		V_{cc}	V_P
Power Dissipation	P_D	Ta=65°C	600	mW
Operating Temperature	Topt		-20 ~ +65	°C
Storage Temperature	Tstg		-40 ~ +150	°C

RECOMMENDED OPERATING CONDITION

CHARACTERISTIC	SYMBOL	RECOMMENDED VALUE	UNIT
Supply Voltage	Vcc	8.1 ~ 13.2	V
Band Input High Level Voltage	e_{BIH}	3.2 ~ 5.5	V_{DC}
Band Input Low Level Voltage	e_{BIL}	0 ~ 0.8	V_{DC}
Video Signal Input Voltage	e_{iV}	2	Vp-p
FBP Input Voltage	e_{FBP}	3.5 ~ Vcc	V_P

ELECTRICAL CHARACTERISTICS (Ta=25±3°C,Vcc=12V)

CHARACTERISTIC	SYMBOL	TEST CONDITION	MIN.	TYP.	MAX.	UNIT
Supply Current	Icc	Error Amp. Output:High Band Output:Vcc	2.0	6.0	12.0	mA
Band Input Thresh-old Voltage	V_{TTH}		1.0	2.0	3.0	V_{DC}
Band Output Sat-uration Voltage	V_{Osat}	I_{OH}=-40mA	-	0.3	0.7	V
Band Output Leak Current	I_{OL}	V_{OL}=-15V	-	-	-50	μA
Zener Stabilized Voltage	Vz	Iz=5mA	31	33	35	V
Stabilized Volt-age Temperature Drift	$\Delta Vz/\Delta T$	Ta=-20~+65°C, Iz=5mA	-5	0	+5	mV/°C
Dynamic Resist-ance	r_z	Iz=5mA	-	10	25	Ω
Error Amp. Input Bias Current	I_{BIAS}		-	-	200	nA
Error Amp. Mini-mum Output Voltage	V_{AOL}		-	0.2	0.5	V

CHARACTERISTIC	SYMBOL	TEST CONDITION	MIN.	TYP.	MAX.	UNIT
Error Amp. Maximum Output Voltage	V_{AOH}		Vz-1.5	Vz-0.6	-	V
Error Amp. Reference Voltage	V_{Aref}		1.5	2.0	2.5	V
Comperator Reference Voltage	Vcref1	No signal → Signal	6.5	7.0	7.5	V
Comperator Reference Voltage	Vcref2	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	μA

BAND OUTPUT PATTERN

Pattern A (μPC1486C)

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 (μPC1487C)

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