

BIPOLAR ANALOG INTEGRATED CIRCUIT

μ PC1382C

TV SOUND IF PROCESSOR AND ATTENUATOR

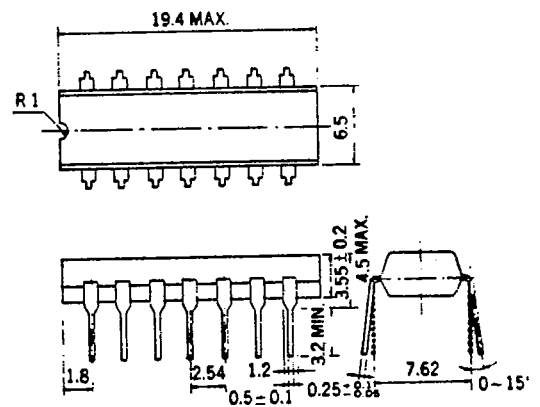
DISCRIPTION

μ PC1382C is a TV sound IC. It can be operated with no adjustment, using ceramic filters externally. It contains a DC controlled attenuator, which has wide effective area and gentle characteristic in the changing, so it is convenient especially for a remote controlled set.

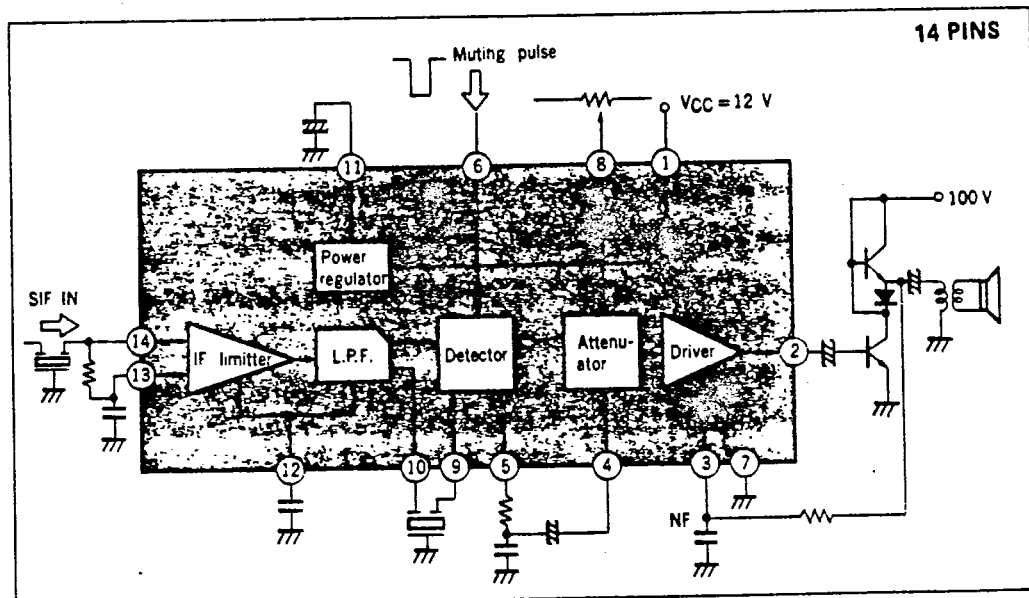
FEATURES

- Gentle changing DC controlled attenuator is convenient for remote controlled sets.
- Operation with ceramic filters makes TV sound circuit no adjustment completely.
- SRPP output circuit can be driven directly.
- Muting works quickly.
- Low distortion demodulation.

PACKAGE DIMENSIONS (Unit : mm)

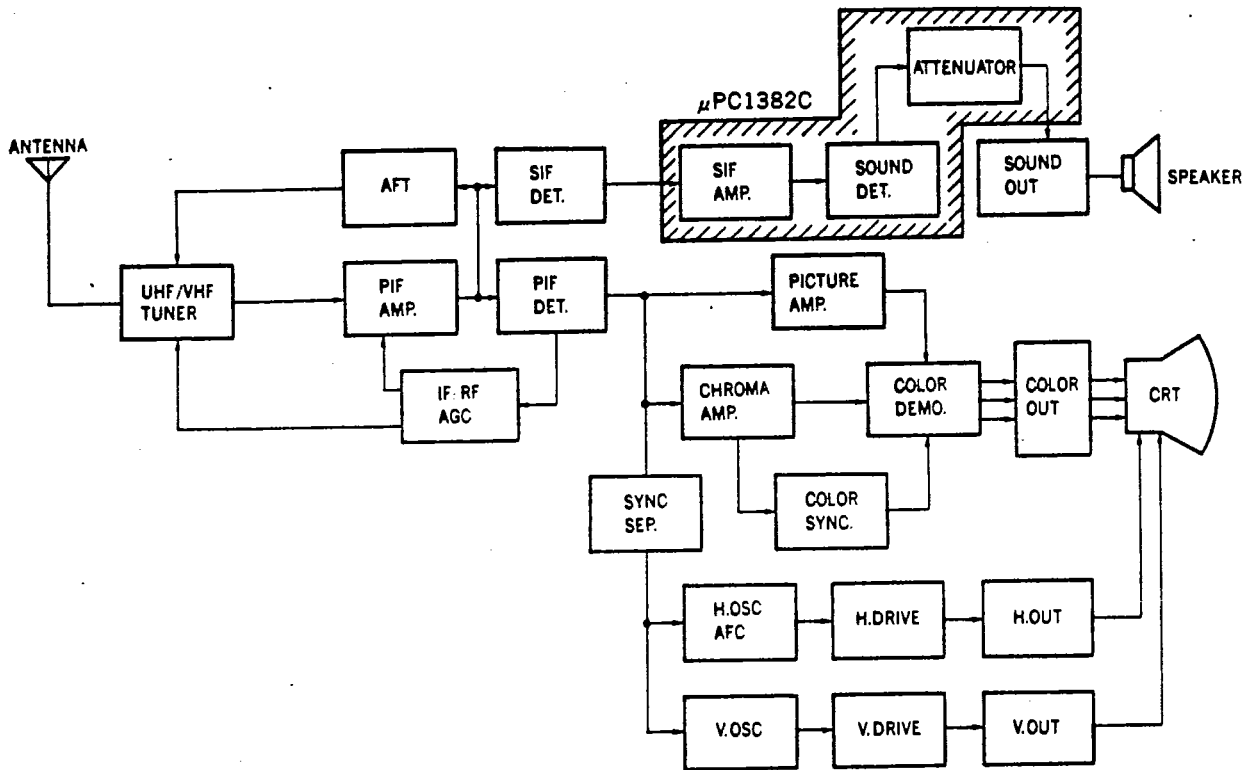


BLOCK DIAGRAM

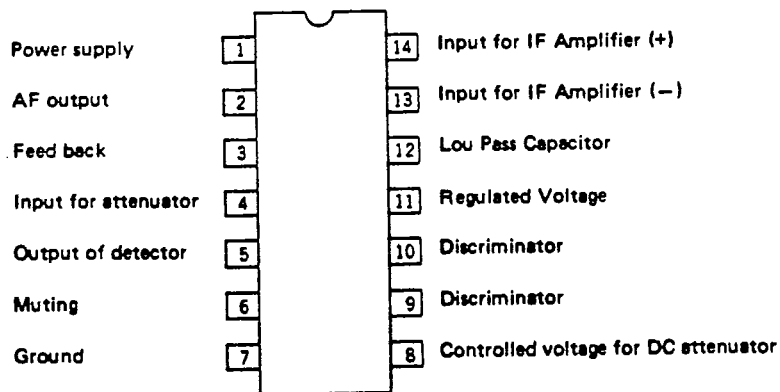


μPC1382C

TV BLOCK DIAGRAM



CONNECTION DIAGRAM (Top View)



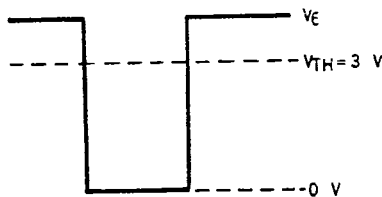
ABSOLUTE MAXIMUM RATINGS ($T_a=25^\circ\text{C}$)

Power supply voltage	V_{CC}	0	15	V
Pin 13, 14 voltage	V_{13}, V_{14}	0	5	V
Pin 2 output current	I_2	0	20	mA
Power dissipation	P_d	350 ($T_a=75^\circ\text{C}$)		mW
Operating temperature	T_{opt}	-20 to +75		$^\circ\text{C}$
Storage temperature	T_{stg}	-40 to +125		$^\circ\text{C}$

ELECTRICAL CHARACTERISTICS ($V_{CC}=12\text{ V}$, $T_a=25\pm 3^\circ\text{C}$) • Mark $f=4.5\text{ MHz}$, $\Delta f=\pm 25\text{ kHz}$, $f_M=400\text{ Hz}$, AMMOD=30%

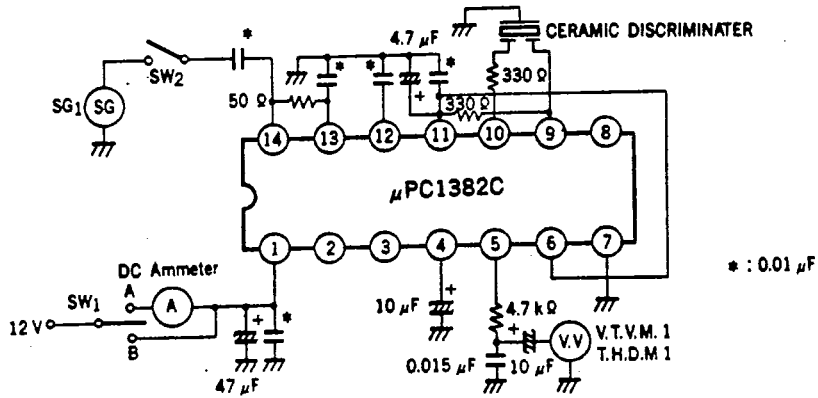
CHARACTERISTIC	SYMBOL	MIN.	TYP.	MAX.	UNIT	CKT	CONDITION
Total supply current	I_{CC}	15	20	25	mA	1	$V_{CC}=12\text{ V}$ Zero carrier
IF limiting voltage	$V_{i(lim)}$	-	200	400	$\mu\text{Vr.m.s.}$	1	* -3 dB point
Detector output voltage	$V_{O AF}$	450	600	750	mVr.m.s.	1	* $V_i=10\text{ mVr.m.s.}$
Detector output distortion	T.H.D.DET	-	0.4	1.0	%	1	* $V_i=10\text{ mVr.m.s.}$
AM rejection	AMR	-44	-55	-	dB	1	* $V_i\geq 3\text{ mVr.m.s.}$
DC VR maximum attenuation	ATT_{VR}	70	80	-	dB	2	$f_{in}=400\text{ Hz}$, $V_i=600\text{ mVr.m.s.}$
DC VR distortion	T.H.D.VR	-	0.4	1.0	%	2	$f_{in}=400\text{ Hz}$, $V_i=600\text{ mVr.m.s.}$, $V_g\geq 5\text{ V}$
AF voltage gain	G_{VAF}	11.5	15.0	-	dB	2	$f_{in}=400\text{ Hz}$, $V_i=100\text{ mVr.m.s.}$, $R_g=1\text{ k}\Omega$
IF input resistance	R_{in}		1.5		$\text{k}\Omega$	3	
IF input capacitance	C_{in}		2.0		pF	3	
Pin 4 input resistance	R_{in4}		20		$\text{k}\Omega$	3	
Pin 4 input capacitance	C_{in4}		2.8		pF	3	

MUTING CHARACTERISTIC

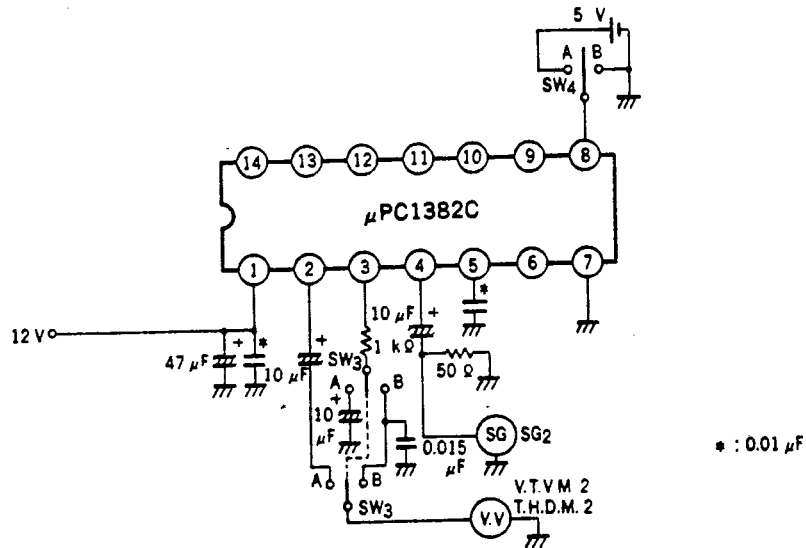


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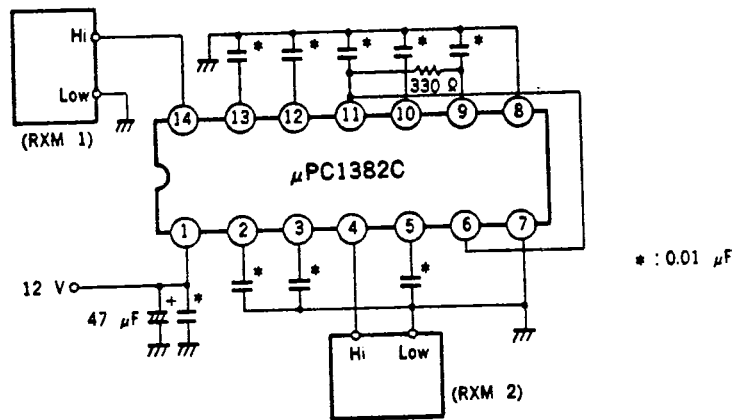
TEST CIRCUIT 1



TEST CIRCUIT 2



TEST CIRCUIT 3



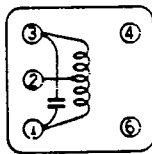
SWITCH TABLE

ITEM	CKT	SG	CONDITION	SW ₁	SW ₂	SW ₃	SW ₄	VV ₁	VV ₂	T.H.D. M1	T.H.D. M2	RX M1
I _{CC}	1	-	V _{CC} =12 V Zero carrier	A	OFF	-	-	○	-	-	-	-
V _{i(lim)}	1	SG ₁	* -3dB point	B	ON	-	-	○	-	-	-	-
V _{OAF}	1	SG ₁	* U _i =10 mVr.m.s.	B	ON	-	-	-	-	○	-	-
T.H.D.DET	1	SG ₁	* U _i =10 mVr.m.s.	B	ON	-	-	-	-	-	-	-
AMR	1	SG ₁	* U _i ≥ 3mVr.m.s.	B	ON	-	-	○	-	-	-	-
ATTVR	2	SG ₂	f _M =400 Hz, U _i =600 mVr.m.s.	-	-	B	A→B	-	○	-	-	-
T.H.D.VR	2	SG ₂	f _M =400 Hz, U _i =600 mVr.m.s.	-	-	B	A	-	-	-	○	-
G _{VAF}	2	SG ₂	f _{in} =400 Hz, U _i =100 mVr.m.s.	-	-	A	A	-	○	-	-	-
R _{in}	3	-		-	-	-	-	-	-	-	-	1
C _{in}	3	-		-	-	-	-	-	-	-	-	1
R _{in4}	3	-		-	-	-	-	-	-	-	-	2
C _{in4}	3	-		-	-	-	-	-	-	-	-	2

* f=4.5 MHz, Δf=±25 kHz, f_M=400 Hz, AMMOD=30 %

CERAMIC DISCRIMINATOR MURATA CDA4.5MC 20

SPECIFICATION OF DETECTION COIL



Frequency
No loading Q
Turn

Internal C
Wire

TOKO TKAC-27071BY

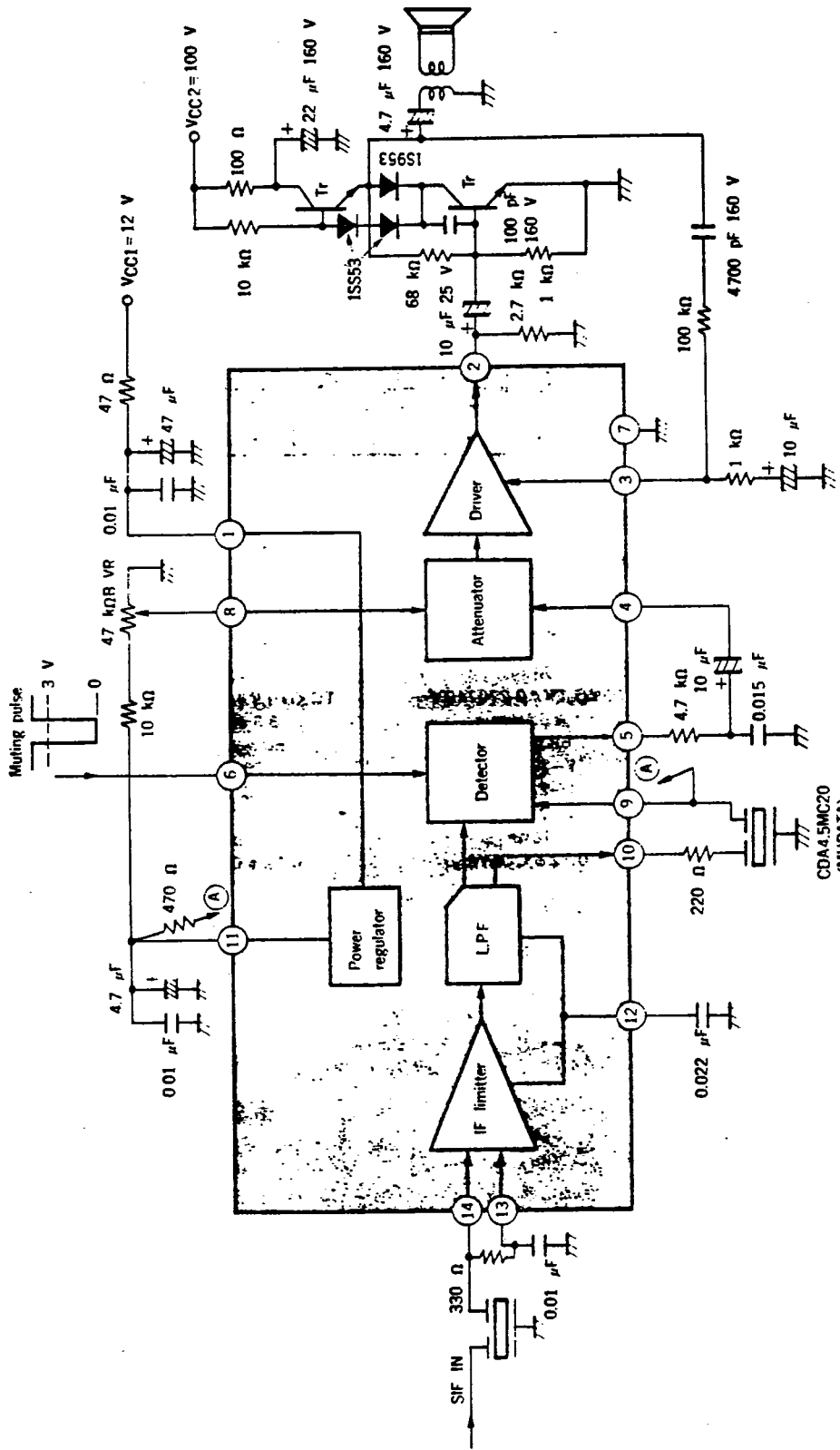
4.5 MHz
68 ± 20 %
1-3 31% T
1-2 15% T
2-3 16 T
82 pF
0.12 φ OUEW

TOKO TKAC-26984Y

5.5 MHz
60 ± 20 %
26 T
13 T
13 T
82 pF
0.12 φ OUEW

μPC1382C

μPC 1382C APPLICATION CIRCUIT



OUTPUT POWER TRANSISTOR

3.5 W	Tr: 2SD401
2.0 W	Tr: 2SC2371
1.0 W	Tr: 2SC1941

Example using IFT

