

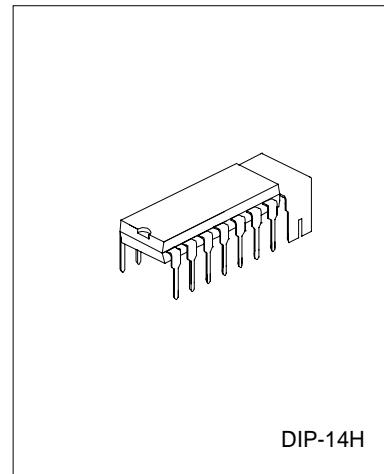
TV SOUND SYSTEM

DESCRIPTION

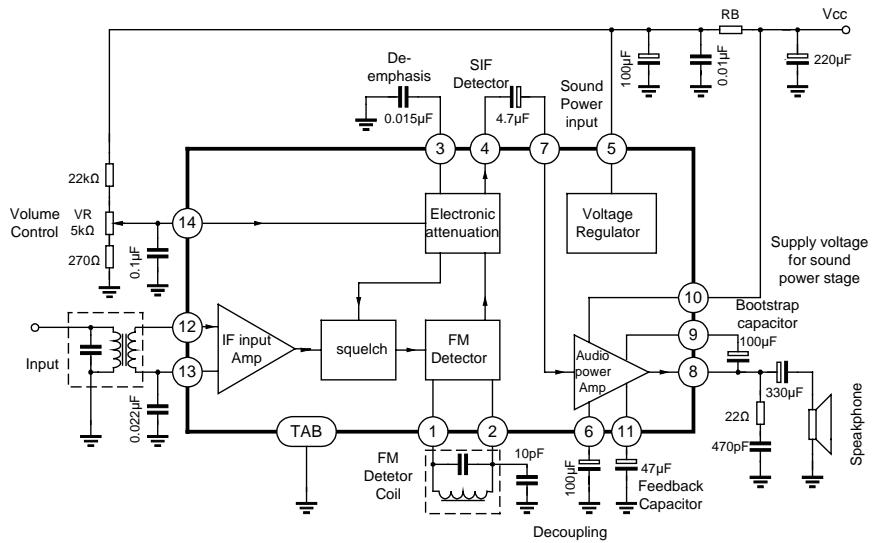
The UTC1353 is a monolithic integrated circuit designed for the SIF and audio section in television receivers. This IC has all functions including sound IF amplifier, FM detector, DC volume control circuit, audio output amplifier with 2.4Watts output power and voltage regulator.

FEATURES

- *Wide operating voltage (9V to 18V)
 - 2.4W, at V_{cc}=18V, R_L=8Ω (For 17" TV)
 - 1.2W, at V_{cc}=12V, R_L=8Ω (For 12" TV)
- *linear volume control
- *Low Harmonic distortion
- *Differential peak detector
- *Enough attenuation (typical, 80dB) by squelch circuit



TYPICAL APPLICATION CIRCUIT



ABSOLUTE MAXIMUM RATINGS(Ta=25°C)

Characteristic	Symbol	Value	Unit
Supply Voltage(pin10)	V10	20	V
Supply Current(pin10)	I10	1	A
Supply Current(pin5)	I5	100	mA
Input Signal voltage	Vi	3	V
Operating Temperature	Topr	-20 to +75	°C
Storage Temperature	Tstg	-40 to 150	°C
Power dissipation	Pd1	0.8 free air,Ta=75°C	W
Power dissipation	Pd2	1.4	W

ELECTRICAL CHARACTERISTICS

1.IF STAGE (Ta=25°C,Vcc=12V,V14>1.3V,RB=100Ω, fm=4.5MHz,fo=400Hz,f=±25kHz,Rg=50μΩ,unless otherwise specified)

Characteristic	Symbol	Test Condition	Min	Typ.	Max	Unit
Pin 5 Voltage	V5A		7.5	8.0	8.5	V
Pin 5 Voltage	V5B	Vcc=18V,Rb=330Ω	7.5	8.0	8.5	V
Pin 10 Current	I10A	Vi=0	14	19	24	mA
Pin10 Current	I10B	Vcc=18V,Rb=330Ω,Vi=0	16	28	35	mA
IF limiting voltage	V _{LIM}	VOAF(Vi=10mVrms),-3dB		200	400	μVrms
Detector Output Voltage	VOAF	Vi=10mVrms	300	360		mVrms
Detector Distortion	THD1	Vi=10mVrms		0.7		%
Deviation of Pull-in Range vs AM Rejection	AMR	AM mod=30%,fm=400Hz, Vi=10mVrms	-40	-50		dB
Maximum Attenuation	VATT	Vi=10mVrms	-60	-80		dB

2.SOUND POWER STAGE (Ta=25°C,Vcc=12V,RL=8Ω, f=400Hz,Rg=600Ω,unless otherwise specified)

Characteristic	Symbol	Test Condition	Min	Typ.	Max	Unit
Sound stage voltage gain	GVAF	Vi=20mVrms	33	37	41	dB
Sound Output Power	POA	THD=10%	0.9	1.2		W
Sound Output Power	POB	Vcc=18%,RB=330Ω,THD=10%	2.0	2.4		W
Sound output distortion	THD2A	Po=0.5W		0.6	2.0	%
Sound output distortion	THD2B	Vcc=18%,RB=330Ω,Po=0.5W	16	0.5	2.0	%
Overall Sound Output distortion (IF + Sound Power Stage)	THD3	Po=0.5W,Vi=10mVrms		1.5	4.0	%

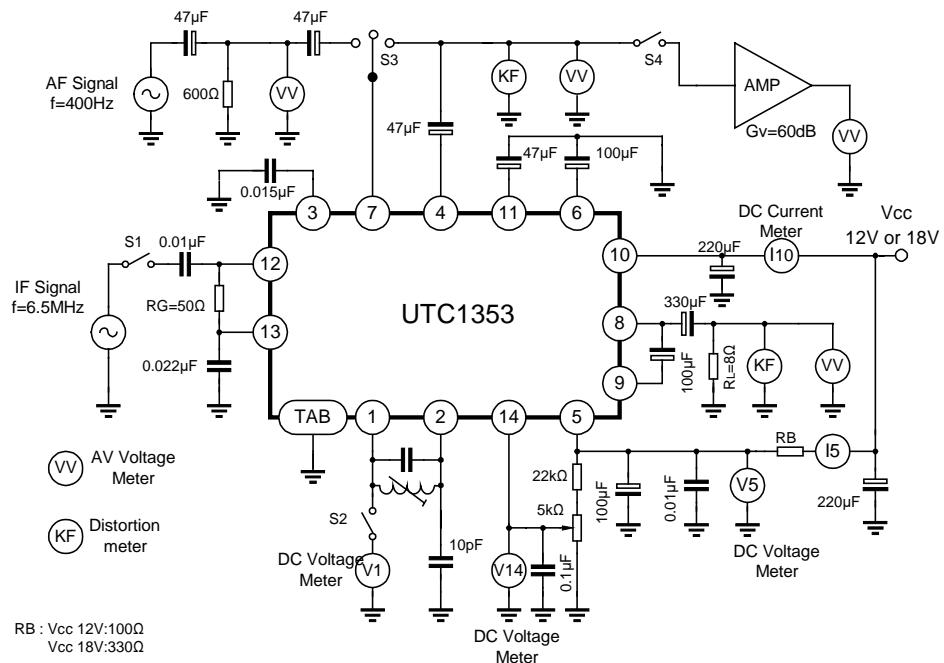
3.TYPICAL DATA

Characteristic	Symbol	Test Condition	Min	Typ.	Max	Unit
Pin 10 Current	I10A	THD2A=10%		205		mA
Pin10 Current	I10B	THD2B=10%		275		mA
Sound Output Power	POA	THD=3%		1.1		W
Sound Output Power	POB	Vcc=18%,RB=330Ω,THD=3%		2.0		W
Sound Stage Band width	Fs	-3dB	50		50k	Hz

UTC1353

LNEAR INTEGRATED CIRCUIT

TEST CIRCUIT



TYPICAL PERFORMANCE CHARACTERISTICS

