

PLL FM MULTIPLEXER STEREO DEMODULATOR

DESCRIPTION

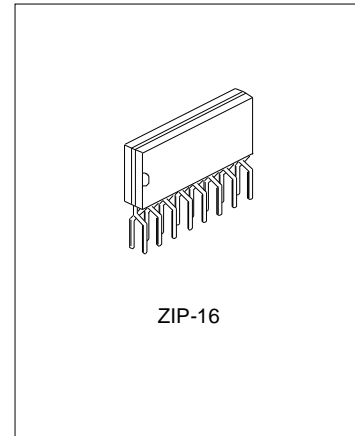
The SA3375 is a multiplex IC for FM car stereos. It integrates two functions: skip-noise prevention and pilot canceling.

FEATURES

- * Low distortion
- * Power supply ripple rejection
- * Wide operating voltage range

APPLICATIONS

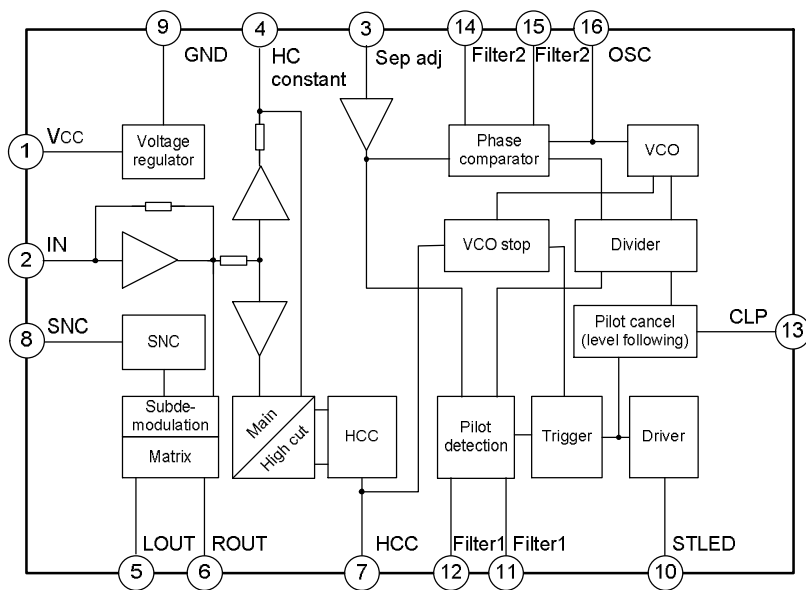
- * FM stereo receivers



ORDERING INFORMATION

Device	Package
SA3375	ZIP-16

BLOCK DIAGRAM



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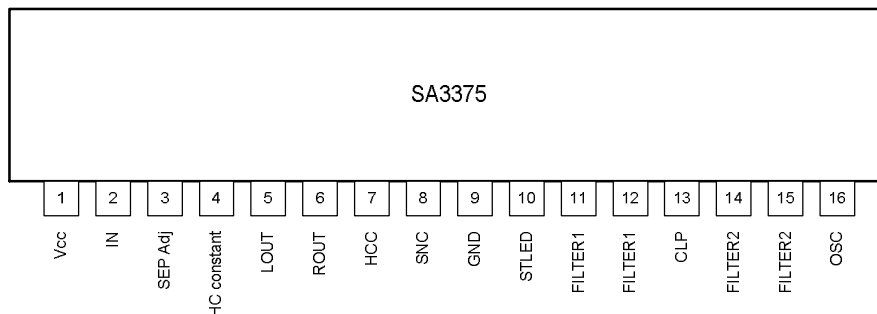
ABSOLUTE MAXIMUM RATINGS (T_{amb}=25°C)

Characteristics	Symbol	Ratings	Unit
Maximum Supply Voltage	V _{CCmax}	16	V
Lamp Driving Current	I _{Lmax}	40	mA
Allowable Power Dissipation	P _{dmax}	520	mW
Operating Temperature	T _{opr}	-20~+70	°C
Storage Temperature	T _{stg}	-40~+125	°C

ELECTRICAL CHARACTERISTICS (At $T_{amb}=25^{\circ}\text{C}$, $V_{CC}=10\text{V}$, $V_{IN}=300\text{mV}$, $f=1\text{kHz}$, $L+R=90\%$, $\text{pilot}=10\%$, $R_g=20\text{k}\Omega$, see specified test circuit.)

Characteristics	Symbol	Test condition	Min.	Typ.	Max.	Unit
Recommended Supply Voltage	V_{CC}		6.5		14	V
Input Signal Voltage	V_i		200		300	mV
Quiescent Current	I_{CCO}		--	22	28	mA
Channel Separation	Sep	SW1: B	40	50	--	dB
Monaural Distortion Factor	Mono THD	mono=300mV	--	0.05	0.2	%
Stereo Distortion Factor	ST THD	main	--	0.05	0.2	%
Lamp Lighting Level	V_L	$L+R=90\%$, $\text{pilot}=10\%$	60	85	120	mV
Hysteresis	H_y		--	3	6	dB
Capture Range	CR	Pilot=30mV	--	± 3	--	%
Output Signal Level	V_O	Sub	150	215	300	mV
S/N Ratio	S/N	$R_g=20\text{k}\Omega$	68	74	--	dB
		$R_g=10\text{k}\Omega$	70	78	--	dB
Input Resistance (pin3)	r_i		--	20	--	$\text{k}\Omega$
SCA Rejection Ratio	SCA _{rej}		--	80	--	dB
Allowable Input Voltage	v_i	THD=1%, $R_g=20\text{k}\Omega$	700	900	--	mV
		THD=1%, $R_g=10\text{k}\Omega$	--	450	--	mV
SNC Output Attenuation	Att SNC	$V_8=0.6\text{V}$, $L-R=90\%$, $\text{pilot}=10\%$	-8.5	-3.0	-0.3	dB
SNC Output Voltage	$V_{O\ sub}$	$V_8=0.1\text{V}$, $L-R=90\%$, $\text{pilot}=10\%$	--	--	5	mV
HCC Output Attenuation	Att HCC (1)	$V_7=0.6\text{V}$, $L+R=90\%$, $\text{pilot}=10\%$	-15.0	-9.0	-0.5	dB
	Att HCC (2)	$V_7=1\text{V}$, $L+R=90\%$, $\text{pilot}=10\%$	-2.0	--	0	dB
Power Supply Ripple Rejection	R_r		--	35	--	dB
VCO Stopping Voltage	$V_{CO\ stop}$		--	7.3	--	V
Channel Balance	CH Ba		--	0.5	1.5	dB
Pilot Cancellation Factor	CLp		20	25	--	dB

PIN CONFIGURATIONS



PIN DESCRIPTIONS

Pin no.	Pin name	Description
1	VCC	Power supply.
2	IN	Composite input
3	SEP Adj	Connected to semi-fixed resistor
4	HC constant	Connecter to capacitor
5	LOUT	Out of L channel
6	ROUT	Out of R channel
7	HCC	High –cut control
8	SNC	Stereo noise control
9	GND	Ground
10	STLED	Stereo lamp
11, 12	FILTER1	Filter of pilot detector
13	CLP	Pilot cancel adjust
14, 15	FILTER2	Filter of phase comparator
16	OSC	VCO OSC

FUNCTION DESCRIPTION
1. SNC and HCC

The SA3375 has SNC (stereo noise control) and HCC (high-cut control) terminals for improving S/N ratios when operating in weak radio fields.

2. Pilot canceling circuit

Canceling signal is a sawtooth wave obtained by integrating a square wave that is proportionate in amplitude to pilot level with C and R.

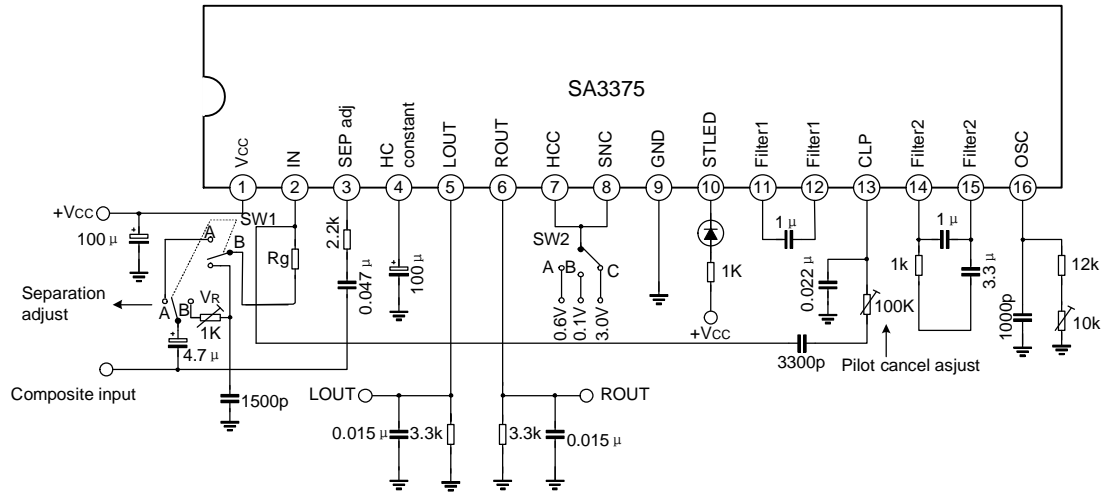
3. Separation adjustments

The SA3375 by itself exhibits separation only in a 25 to 30 dB range. If a phase correction circuit is provided in the SA3375 input circuit, it can exhibit intrinsic separation characteristics, typically 50 dB.

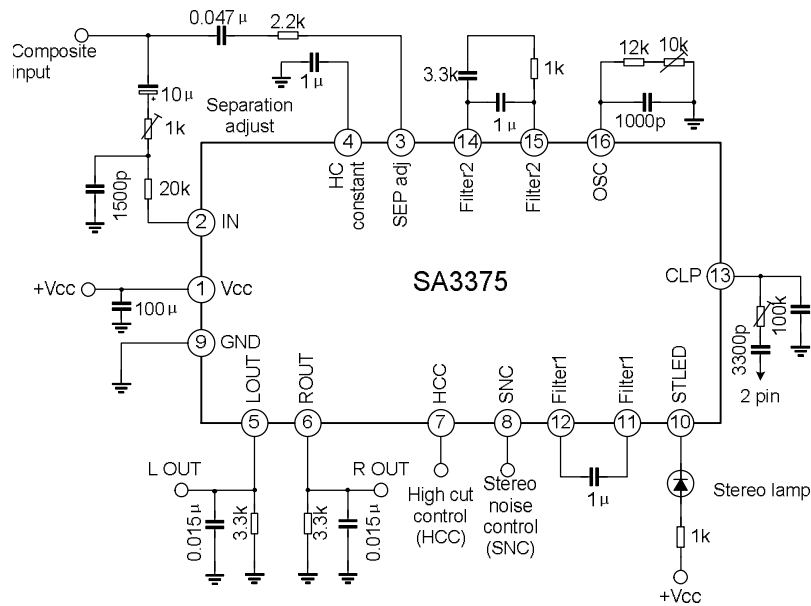
4. VCO stopped

When applying a voltage not less than 7 V to the HCC terminal (pin 7) , VCO will be stopped and SA3375 will work in monaural mode.

TEST CIRCUIT



TYPICAL APPLICATION CIRCUIT



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PACKAGE OUTLINE

