

## PLL FM MULTIPLEXER STEREO DEMODULATOR

### DESCRIPTION

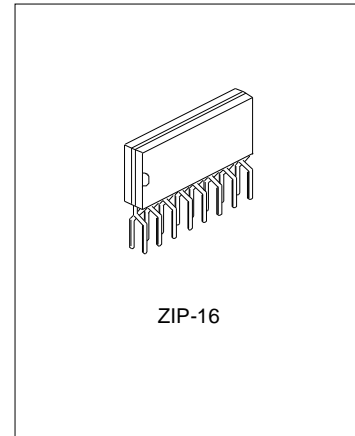
The SA3375 is a multiplex IC for FM car stereos. It integrates two functions: skip-noise prevention and pilot canceling.

### FEATURES

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

### APPLICATIONS

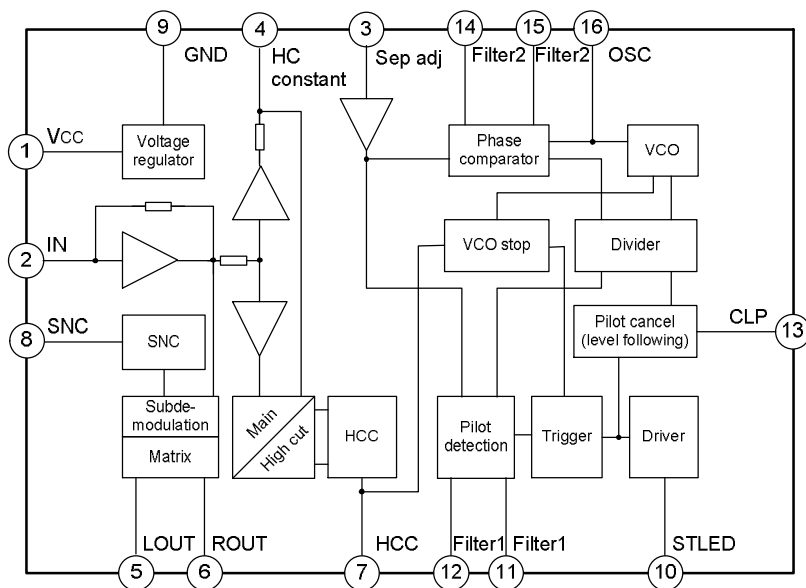
- \* FM stereo receivers



### ORDERING INFORMATION

Device	Package
SA3375	ZIP-16

### BLOCK DIAGRAM



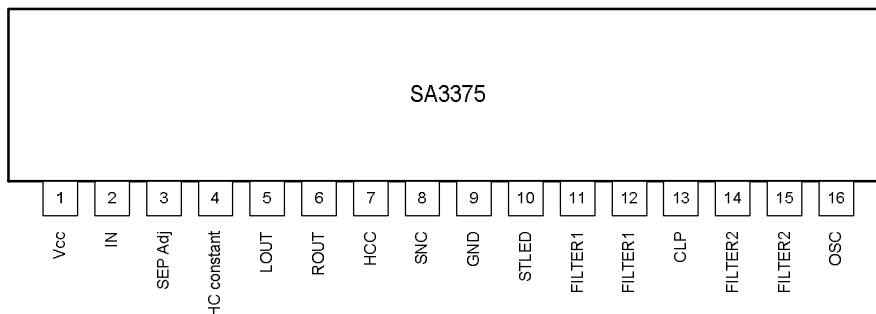
### ABSOLUTE MAXIMUM RATINGS (T<sub>amb</sub>=25°C)

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

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

Characteristics	Symbol	Test condition	Min.	Typ.	Max.	Unit
Recommended Supply Voltage	Vcc		6.5		14	V
Input Signal Voltage	Vi		200		300	mV
Quiescent Current	Icco		--	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	VL	L+R=90%, pilot=10%	60	85	120	mV
Hysteresis	Hy		--	3	6	dB
Capture Range	CR	Pilot=30mV	--	$\pm 3$	--	%
Output Signal Level	VO	Sub	150	215	300	mV
S/N Ratio	S/N	$R_g=20k\Omega$	68	74	--	dB
		$R_g=10\text{ k}\Omega$	70	78	--	dB
Input Resistance (pin3)	ri		--	20	--	k $\Omega$
SCA Rejection Ratio	SCArej		--	80	--	dB
Allowable Input Voltage	vi	THD=1%, $R_g=20k\Omega$	700	900	--	mV
		THD=1%, $R_g=10k\Omega$	--	450	--	mV
SNC Output Attenuation	Att SNC	V8=0.6V, L-R=90%, pilot=10%	-8.5	-3.0	-0.3	dB
SNC Output Voltage	VO sub	V8=0.1V, L-R=90%, pilot=10%	--	--	5	mV
HCC Output Attenuation	Att HCC (1)	V7=0.6V, L+R=90%, pilot=10%	-15.0	-9.0	-0.5	dB
	Att HCC (2)	V7=1V, L+R=90%, pilot=10%	-2.0	--	0	dB
Power Supply Ripple Rejection	Rr		--	35	--	dB
VCO Stopping Voltage	VCO 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	Connector 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.

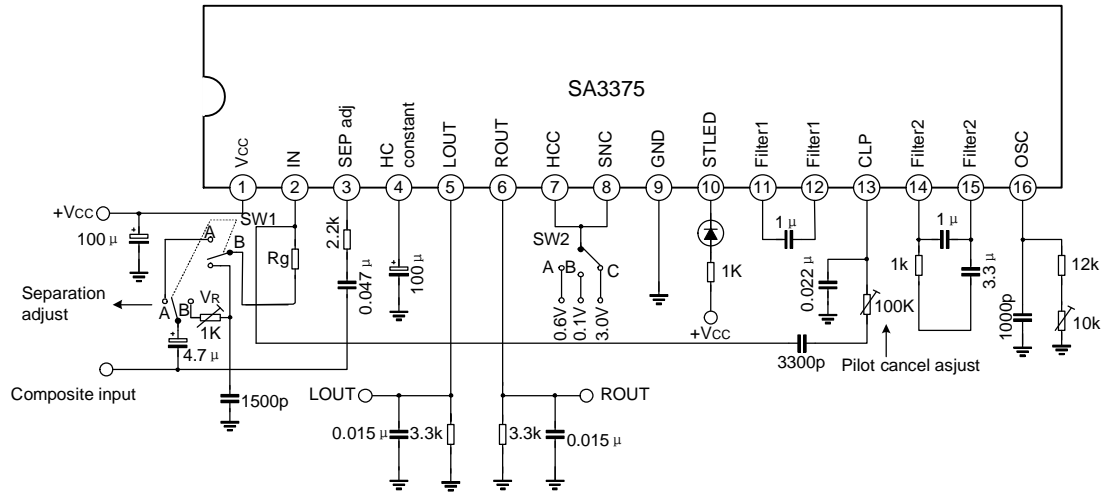
**3. Separation adjustments**

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.

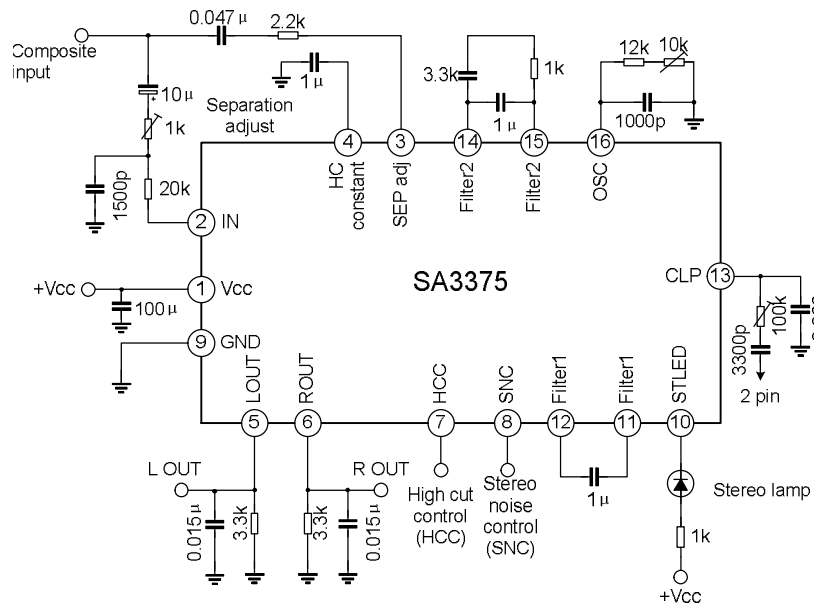
**4. VCO stopped**

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**



PACKAGE OUTLINE

ZIP-16

UNIT: mm

