

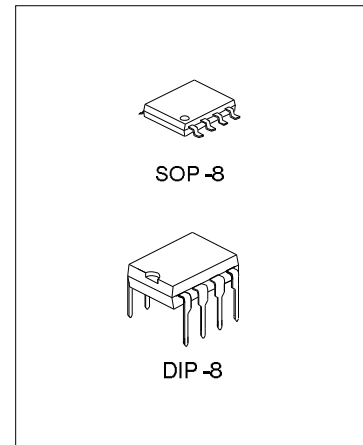
## 3D EFFECT AUDIO PROCESSOR

### DESCRIPTION

The SC5387 is a 3D Effect Audio Processor IC utilizing CMOS Technology. It features a specially designed HRTFs filter and space-enhanced circuit, thereby, guaranteeing excellent audio quality and performance. Least external components, excellent 3D effect audio output, built-in LED display driver add to the enhanced quality of SC5387. Pin assignment and application circuit are optimized for cost saving advantages and easy PCB layout.

### FEATURES

- \* CMOS Technology
- \* Low Total Harmonic Distortion and High S/N Ratio:  
THD+N<0.01%, S/N>95dB
- \* Built-in LED Display Driver
- \* Least External Components
- \* Wide Operating Voltage Range: 5 – 9 V
- \* 2-Channel Output



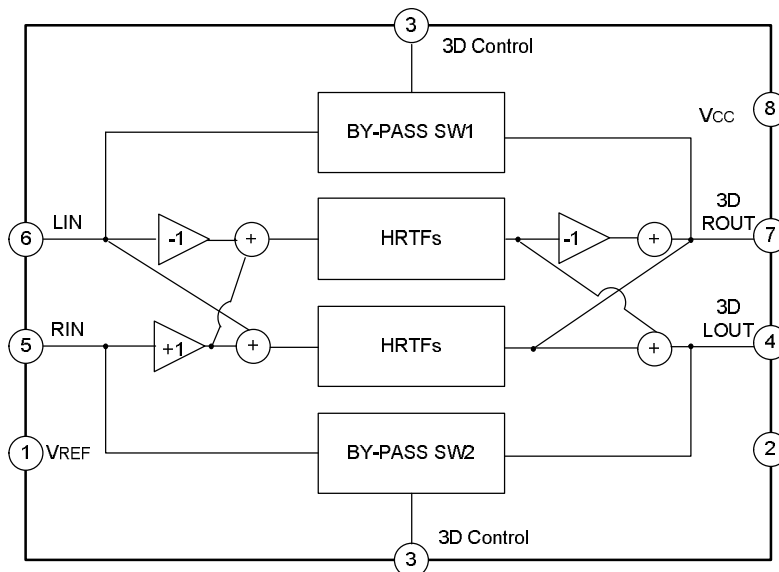
### ORDERING INFORMATION

Device	Package
SC5387	DIP-8--300-2.54
SC5387S	SOP-8-225-1.27

### APPLICATIONS

- \* Car Audio
- \* Mini compo
- \* Multimedia Audio Components
- \* Home Stereo

### BLOCK DIAGRAM



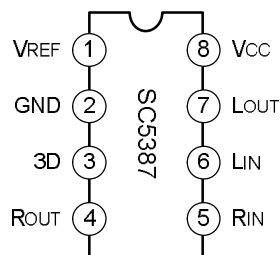
**ABSOLUTE MAXIMUM RATINGS**

Characteristics	Symbol	Ratings	Unit
Supply Voltage	VCC	12	V
Operating Temperature	T <sub>opr</sub>	-20 ~ 75	°C
Storage Temperature	T <sub>stg</sub>	-40 ~ 125	°C
Input Voltage	V <sub>i</sub>	-0.3 ~ V <sub>cc</sub> +0.3	V

**ELECTRICAL CHARACTERISTICS** (Unless otherwise specified, V<sub>CC</sub>=9V, V<sub>i</sub>=1V<sub>rms</sub>, f=1kHz)

Characteristics	Symbol	Test conditions	Min.	Typ.	Max.	Unit
Supply Voltage	VCC	--	5	9	10.0	V
Supply Current	I <sub>CC</sub>	VCC = 9V, V <sub>i</sub> = 0V, By-Pass mode	--	20	--	mA
Maximum Output Voltage	VOM	VCC = 9V	2.5	--	--	V <sub>rm</sub>
Output Noise	e <sub>NO</sub>	VCC = 9V, V <sub>i</sub> = 0V, BW = 20~20kHz A - Weighting	--	-90	--	dB
Total Harmonic Distortion	THD	VCC = 9V, V <sub>i</sub> = 0.2V <sub>rms</sub> , BW = 20~20kHz, By-Pass mode	--	--	0.05	%
Input Impedance	R <sub>IN</sub>	VCC = 9V	--	100	--	kΩ
Output Impedance	R <sub>OUT</sub>	VCC = 9V	--	40	80	Ω
High Level Input Voltage	V <sub>IH</sub>	VCC = 9V	--	--	0.7V <sub>CC</sub>	V
Low Level Input Voltage	V <sub>IL</sub>	VCC = 9V	0.3V <sub>CC</sub>	--	--	V
Maximum Input Voltage	V <sub>IMAX</sub>	VCC = 9V, By-Pass mode	--	--	2.0	V <sub>rms</sub>

**PIN CONFIGURATION**

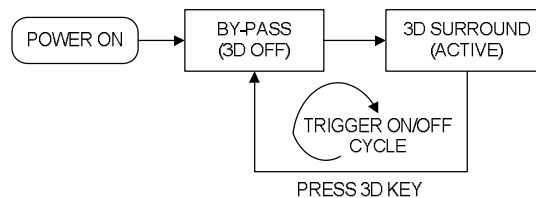


### PIN DESCRIPTION

Pin No	Symbol	Function
1	VREF	1/2 VCC, Connect a Capacitor to GND
2	GND	Ground Pin.
3	3D	3D Effect Control Pin.
4	ROUT	Right Channel Output Pin.
5	RIN	Right Channel Input Pin.
6	LIN	Left Channel Input Pin.
7	LOUT	Left Channel Output Pin.
8	VCC	Positive Power Supply

### FUNCTIONAL DESCRIPTION

The 3D effect of SC5387 is controlled by Pin No.3 (3D Pin) via a TACT Switch which is triggered when connected to VCC ("High"). Please refer to the diagram below.

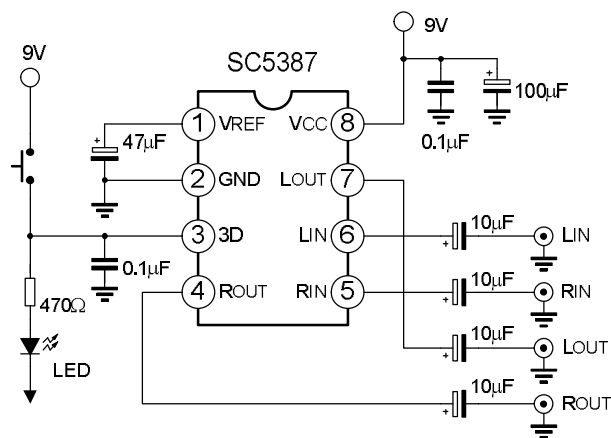


### LED Display Driver

SC5387 has a built-in LED driver which is used to display the 3D activity status. Please refer to the table below.

3D / Surround Effect OFF	3D / Surround Effect ON
LED Display OFF	LED Display ON

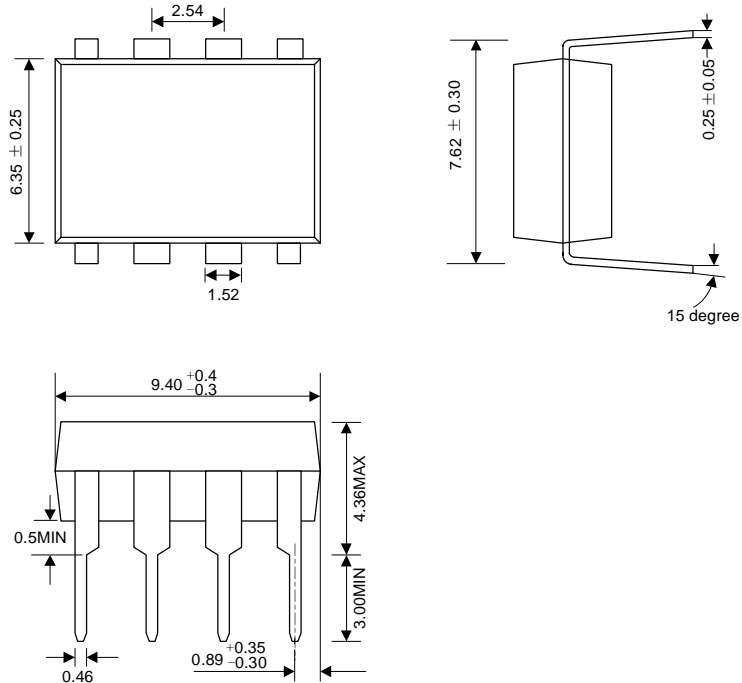
### APPLICATION CIRCUIT



PACKAGE OUTLINE

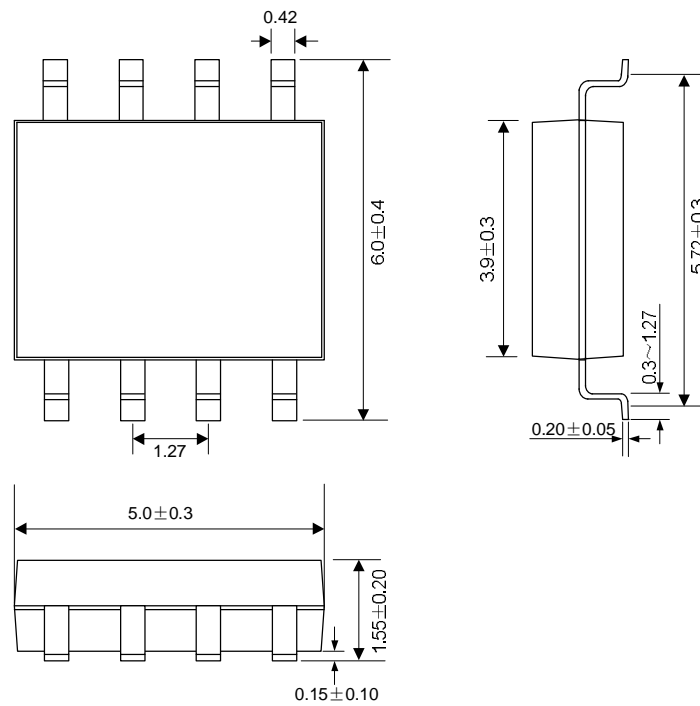
DIP-8-300-2.54

UNIT: mm



SOP-8-225-1.27

UNIT: mm





#### **HANDLING MOS DEVICES:**

Electrostatic charges can exist in many things. All of our MOS devices are internally protected against electrostatic discharge but they can be damaged if the following precautions are not taken:

- Persons at a work bench should be earthed via a wrist strap.
- Equipment cases should be earthed.
- All tools used during assembly, including soldering tools and solder baths, must be earthed.
- MOS devices should be packed for dispatch in antistatic/conductive containers.