



## Supreme Sound Opamp V5i Datasheet

The Supreme Sound Opamp (SS Opamp) is a specialized, single-purpose opamp for high quality analogue audio amplification.

Unlike the general-purpose IC opamp designs, which focus on high open loop gain, Burson aimed to achieve low open-loop distortion, low noise, low drift and low offset. The Supreme Sound Opamp also exhibited a wider bandwidth and wide power supply range. These qualities are essential in high quality analog audio amplification.

The input stage features a pair of field-effect transistors. The main amplification section employed a current mirror configuration instead of the conventional voltage amplification. By keeping the current limiting resistor to a minimum value we minimized RC parameter of the circuitry, and hence achieved a wider frequency response.

The SS Opamp suitable for a wide range of audio applications.

		Measurement		
Absolute Maximum Ratings		Min	Tpy	Max
Supply Voltage		$\pm 5 \text{ V} / 10\text{VDC}$		$\pm 16\text{V} / 32\text{VDC}$
Operating Ambient Temperature		$- 25^\circ \text{ C}$		$60^\circ \text{ C}$
Storage temperature range		$- 65^\circ \text{ C}$		$85^\circ \text{ C}$
DC Characteristics	Conditions	Testing Temperature $25^\circ \text{ C}$ Supply Voltage $\pm 12\text{V}$		
Quiescent Current (mA)			Single 5mA Dual 10mA	
Input offset voltage (mV)	$R_s = 0$	0.05mV	3mV	
Input offset current ( $\mu\text{A}$ )		0.02 $\mu\text{A}$	2 $\mu\text{A}$	3 $\mu\text{A}$
Input BIAS current ( $\mu\text{A}$ )		1.2 $\mu\text{A}$	3 $\mu\text{A}$	4 $\mu\text{A}$
Common-Mode Rejection Ratio			100dB	
Power Supply Rejection Ratio			90dB	
AC Characteristics	Conditions	Testing Temperature $25^\circ \text{ C}$ Supply Voltage $\pm 15\text{V}$		
Open-loop gain (dB)			70dB	
Open-loop bandwidth (dB)	$R_L = 600\Omega$		45Khz	
Gain Bandwidth Product (MHz)	@ 100KHZ		50 MHz	
Slew Rate ( $\text{V}/\mu\text{S}$ )	$f = 10\text{kHz}; R_S = 2\text{K}\Omega$	$45\text{V}/\mu\text{S}$		$50\text{V}/\mu\text{S}$
Input Resistant (KOhm)			45M $\Omega$	
Crosstalk distortion (dB) (Dual Opamp)	$f = 1\text{kHz}; R_S = 600\Omega$		>95dB	
Total Harmonic Distortion (%) 1Khz @ 2V output	1Khz @ 2V output; $R_L = 600\Omega$		0.005%	
Output Impedance (Ohm)	$A_V = 30\text{dB}$ Closed-loop $f = 10\text{kHz}, R_L = 600\Omega$		0.5 $\Omega$	