CubicMOS

Dual High Output Power Operational Amplifier CM9318

Features

. High Signal to Noise Ratio
. High Slew
. Low Distortion
. Large Output Voltage Swing
. Wide Temperature Range
. Low Power Consumption
. Excellent Power Supply Ripple Rejection

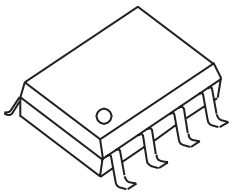
Applications

.Portable Digital Audio

General Description

The CM9318 integrated circuit is a high gain, high output current, high output voltage swing dual operation amplifier. The device is fabricated in a CMOS process and has been primarily developed for portable digital audio applications.

Package Outline



CM9318

Ordering Information

Tape & Reel package. One Reel 2,500 pcs.

Tube package. One Tube 100 pcs.

Absolute Maximum Ratings

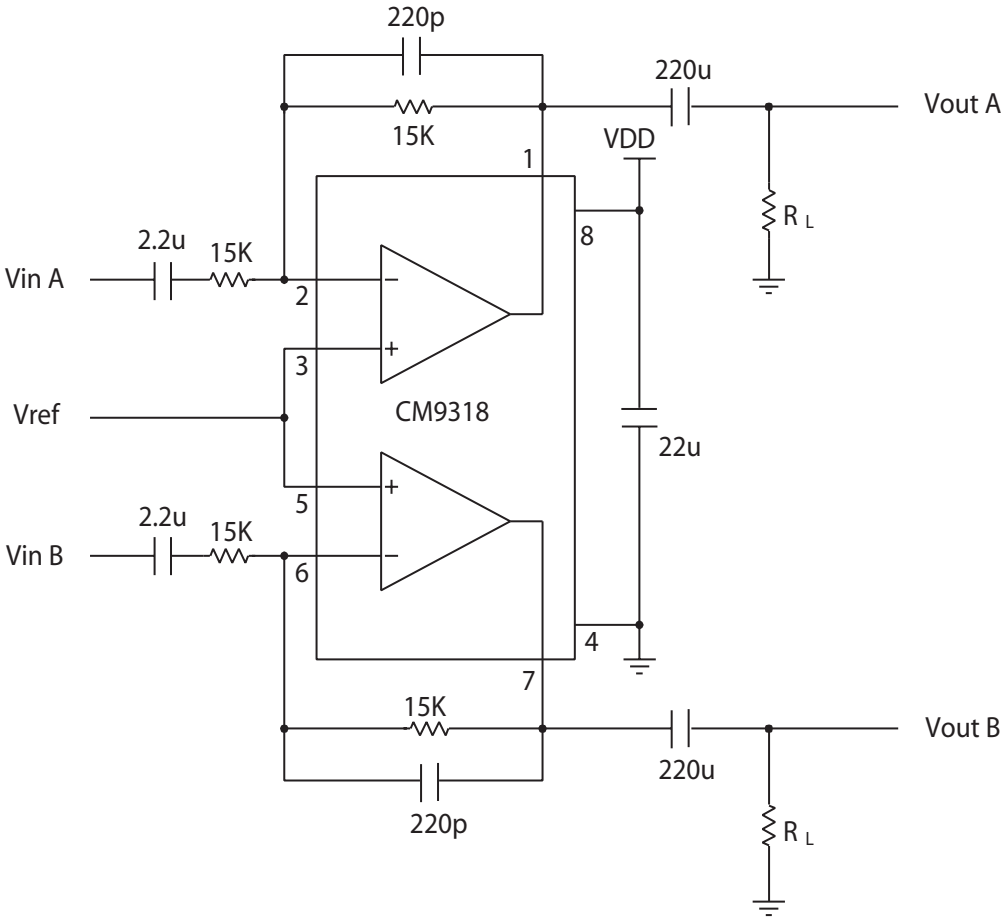
Symbol	Parameter	Rating	Unit
V_{DD}	Supply Voltage	9	V
T_A	Operating Ambient Temperature range	-20 to 85	°C
T_J	Maximum Junction Temperature	150	°C
T_{STG}	Storage Temperature Range	-65 to +150	°C
T_S	Soldering Temperature,10 seconds	300	°C

Electrical Characteristics

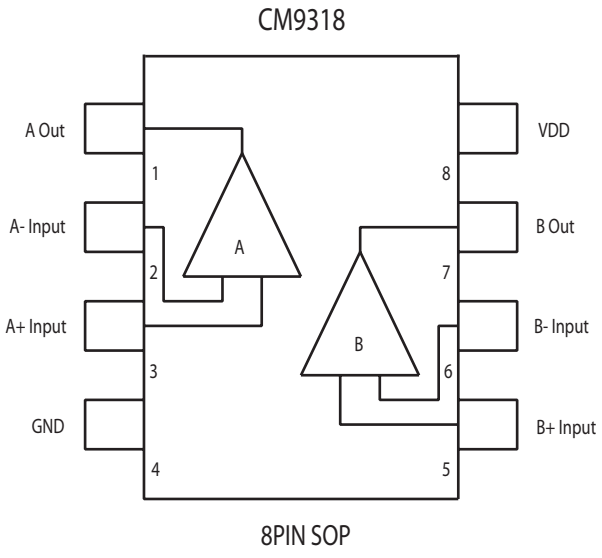
V_{DD}=5V, V_{SS}=0V, T_A=25°C, f_i=1kHz, R_L=32W (unless otherwise noted)

Symbol	Parameter	Test Conditions	Min.	Typ.	Max.	Unit
Supply						
V_{DD}	Supply Voltage					
	Single		2.0	5.0	7.0	V
RR	Ripple rejection ratio			90		dB
I_{DD}	Supply Current	No Load		2.2	5.0	mA
P_{TOT}	Total Power Dissipation	No Load		11.0	25	mW
DC Characteristics						
$V_{I(OS)}$	Input Offset Voltage			3	15	mV
I_{BIAS}	Input Bias Current			10		pA
V_{CM}	Common Mode Voltage		-0.5		V_{DD} -1.2	V
G_V	Open-loop Voltage Gain	R_L=5k	76	82		dB
I_O	Max. Output Current	(THD+N)/S <0.1%	55	60		mA
R_O	Output Resistance			0.25		Ω
V_O	Output Voltage Swing	R_L=32Ω	<0.45		>4.20	V
		R_L=16Ω	<0.5		>3.5	
G_{CS}	Channel Separation	R_L=32Ω		90		dB
C_L	Load Capacitance				1000	pF
AC Characteristics						
(THD+N)/S	Total Harmonic Distortion plus Noise to Signal Ratio	R_L=32Ω		-70	-65	dB
				0.03	0.06	%
S/N	Signal to Noise Ratio		100	110		dB
U_G	Unity Gain Frequency	Open-loop, R_L=5k		2		MHz
P_O	Max. Output Power	(THD+N)/S < 2 %		80		mW
		(THD+N)/S < 0.1%	45	60		
C_I	Input Capacitance			3.5		pF
SR	Slew Rate	Unity Gain Inverting		5		V/ms
B	Power Bandwidth	Unity Gain Inverting		20		kHz

Application Circuit



Block Diagram



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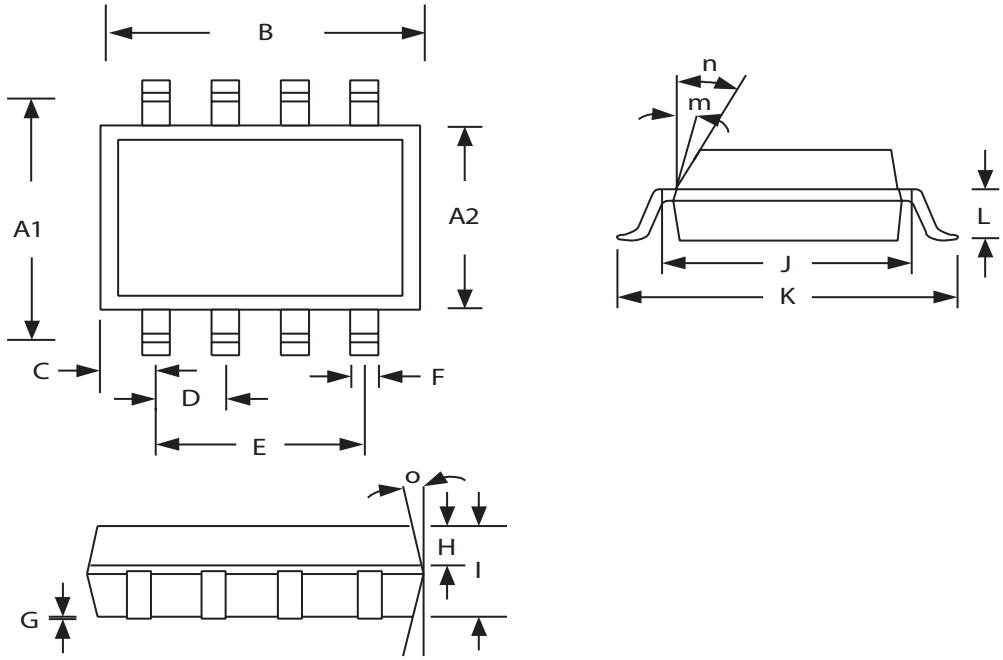
Packaging Information



DIM	Millimeters		Inches	
	Min.	Max.	Min.	Max.
A1	4.80	5.00	0.190	0.200
A2	3.80	4.00	0.149	0.157
B	4.80	5.00	0.189	0.196
C	0.558		0.022	
D	1.2BSC		0.050BSC	
E	3.810		0.150	
F	0.33	0.51	0.013	0.069
G	0.152	0.202	0.006	0.008
H	0.406		0.016	
I	1.35	1.75	0.053	0.069
J	4.496	4.623	0.177	0.182
K	5.994	6.197	0.236	0.244
L	0.939		0.037	
m	7°		7°	
n	45°		45°	
o	8°		8°	