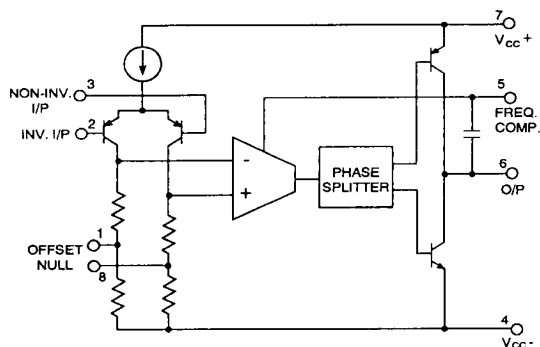




FEATURES

- low voltage design - operates on 1.0 V supplies
- low power consumption - 200 μ A typ. supply current
- wide range of supply voltage: 1.0 to 24 V
- single or dual supply operation
- low input offset voltage: 1 mV typ.
- class AB output stage swings virtually rail-to-rail

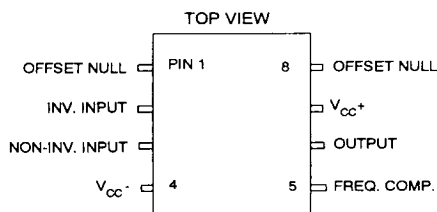
FUNCTIONAL SCHEMATIC



DESCRIPTION

The GC8100 is a low voltage, low power operational amplifier employing specialized circuit design techniques to achieve operation on supply voltages as low as 1.0 volt. The class AB output stage swings to within a single transistor saturation voltage of either supply rail, and the PNP input stage provides negative supply rail sensing capability.

PIN CONNECTIONS



ORDERING INFORMATION

Part Number	Package Type	Temperature Range
GC8100-CDA	8 Pin PDIP	0 - 70°C
GC8100-CKA	8 Pin SOIC	0 - 70°C

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ELECTRICAL CHARACTERISTICS ($V_{CC+} - (V_{CC-}) = 1.2$ V, $T_A = 25^\circ\text{C}$, unless otherwise noted.)

PARAMETER	CONDITIONS	MIN	TYP	MAX	UNITS
V_{IO} Input Offset Voltage		-	1	2.5	mV
I_{IO} Input Offset Current	$V_{ID} = V_{IO}$	-	± 3	± 20	nA
I_{IB} Input Bias Current	$V_{ID} = V_{IO}$	-	-70	-160	nA
R_i Input Resistance	$V_{ID} = V_{IO}$	300	750	-	k Ω
A_{VD} Diff. Voltage Gain	$R_L = 20$ k Ω	40	100	-	V/mV
I_{O+} O/P Source Current		5	12	-	mA
I_{O-} O/P Sink Current		8	16	-	mA
GBW Gain-bandwidth Product		500	750	-	kHz
SR Slew Rate		0.16	0.25	-	V/ μ s
CMRR Common Mode Rejection		86	105	-	dB
PSRR Power Supply Rejection		70	90	-	dB
I_{CC} Total Supply current	No Load, no signal	-	200	270	μ A

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OPERATING CONDITIONS

PARAMETERS	VALUES/UNITS
Supply Voltage Range (V_{CC+}) - (V_{CC-})	1.0 - 24 V
Max. Diff. Input Signal	± 24 V
Max. Com. Mode I/P Signal (V_{CC-}) - 0.3 to (V_{CC+})	-0.8 V
Ambient Temperature (T_A)	0°C - 70°C

ABSOLUTE MAXIMUM RATINGS

PARAMETERS	VALUES/UNITS
Supply Voltage Range (V_{CC})	26 V
Differential Input Voltage	± 26 V
Input Voltage Range (either I/P; ref. (V_{CC-}))	-10 to 26 V

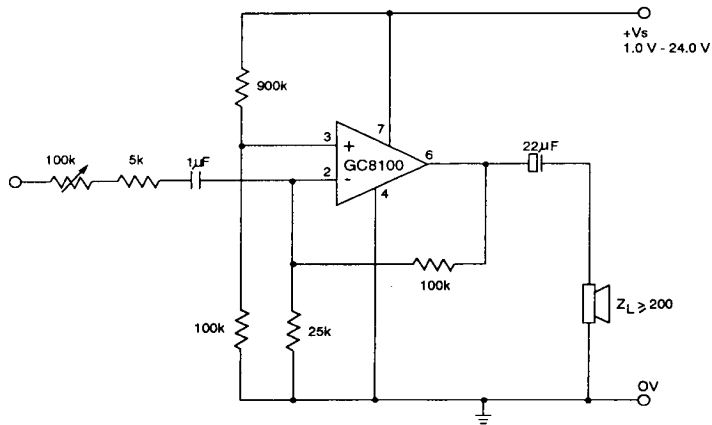


Fig. 1 Typical Application
Headphone Amplifier 0 - 26 dB

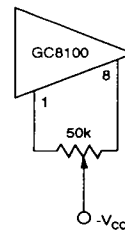


Fig. 2 Offset Null

CAUTION
ELECTROSTATIC
SENSITIVE DEVICES
DO NOT OPEN PACKAGES OR HANDLE
EXCEPT AT A STATIC-FREE WORKSTATION



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