

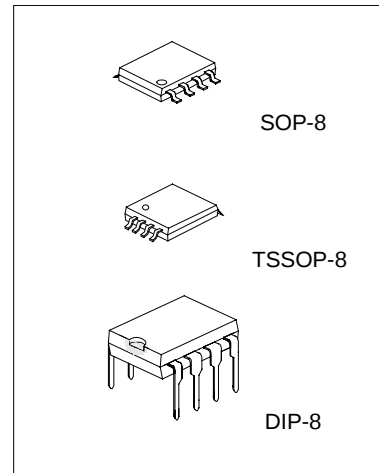
SINGLE OPERATIONAL AMPLIFIER

DESCRIPTION

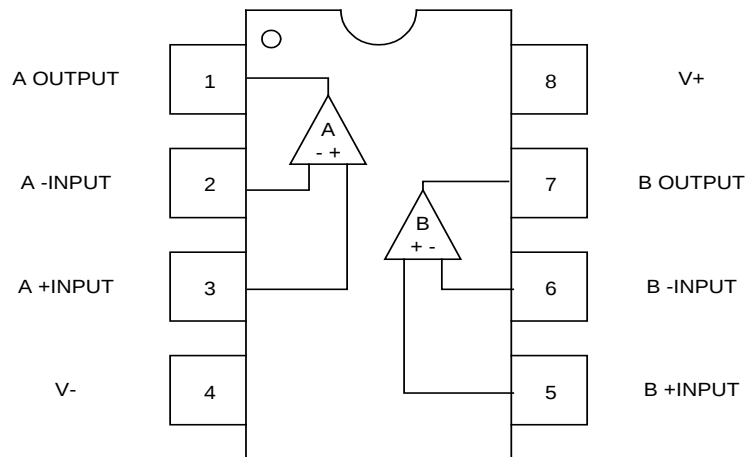
The UTC M2100 is a low supply voltage and low saturation output voltage ($\pm 2.0V$ p-p at supply voltage $\pm 2.5V$) operational amplifier. It is applicable to handy type CD, radio cassette CD, and portable DAT, that are digital audio apparatus which require the 5V single supply operation and high output voltage.

FEATURES

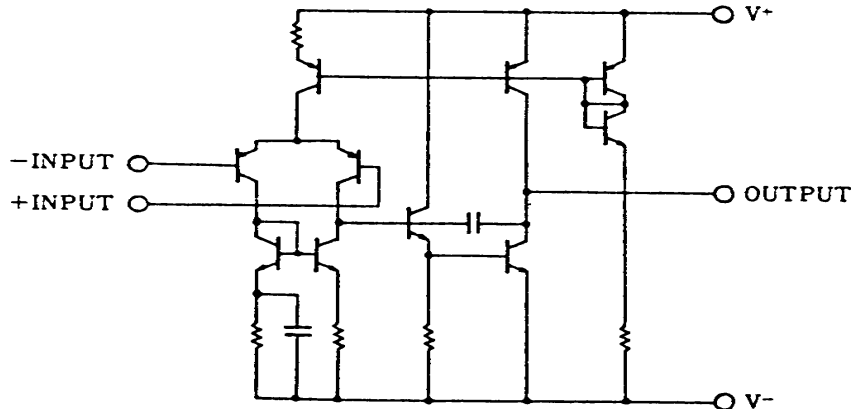
- *Single Supply Operation
- *Operating Voltage ($\pm 1.0V \sim \pm 3.5V$)
- *Low Saturation Output Voltage
- *High Slew Rate ($4V/\mu s$ typ.)
- *Package Outline
- *Bipolar Technology



PIN CONFIGURATION



BLOCK DIAGRAM



ABSOLUTE MAXIMUM RATINGS (Ta=25°C)

PARAMETER	SYMBOL	VALUE	UNIT
Supply Voltage	V+/V-	+3.5	V
Differential Input Voltage	V _{ID}	+7	V
Power Dissipation	P _D	500 (DIP8) 300 (SOP8) 250 (TSSOP8)	mW
Operating Temperature Range	T _{opr}	-20~+75	°C
Storage Temperature Range	T _{stg}	-40~+125	°C

ELECTRICAL CHARACTERISTICS (Ta=25°C)

(V⁺=5V, Ta=25°C, unless otherwise specified)

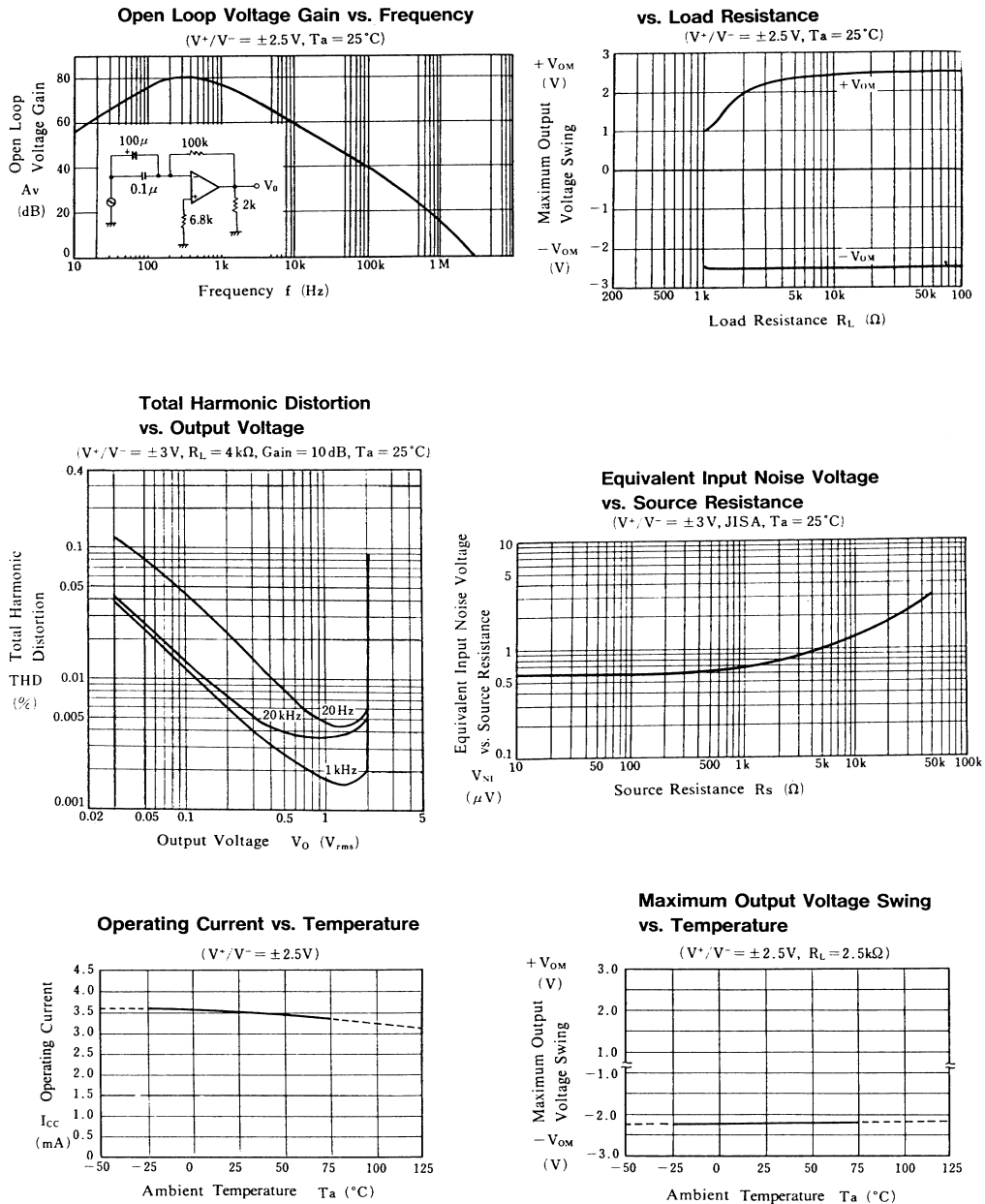
PARAMETER	SYMBOL	TEST CONDITIONS	MIN	TYP.	MAX	UNIT
Input Offset Voltage	V _{IO}	R _S ≤10kΩ		1	6	mV
Input Bias Current	I _{IB}			100	300	nA
Large Signal Voltage Gain	A _v	R _L ≥10kΩ	60	80		dB
Maximum Output Voltage Swing	V _{OM}	R _L ≥2.5kΩ	+2	+2.2		V
Input Common Mode Voltage Range	V _{ICM}		+1.5			V
Common Mode Rejection Ratio	CMR		60	74		dB
Supply Voltage Rejection Ratio	SVR		60	80		dB
Operating Current	I _{CC}	V _{IN} =0, R _L =∞		3.5	5	mA
Slew Rate	SR	A _v =1, V _{IN} =±1V		4		V/μS
Gain-Bandwidth product	GB	f=10kHz		12		MHz

NOTE1: Applied circuit voltage gain is desired to be operated within the range of 3 dB to 30dB.

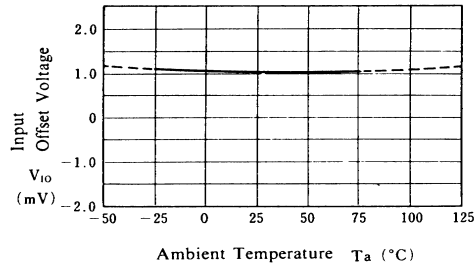
NOTE2: Special care being required for input common mode voltage range and the oscillation due to the capacitive load when operating on voltage follower.

NOTE3: Special care being required for the oscillation, yet having the gain when the supply voltage is applied at more than 5V (single supply voltage 5V)

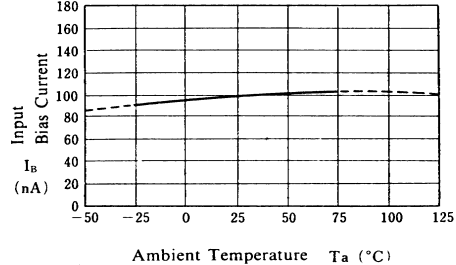
TYPICAL CHARACTERISTICS



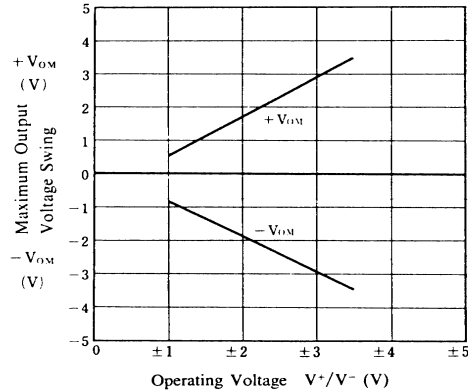
Input Offset Voltage vs. Temperature

 $(V^+/V^- = \pm 2.5V)$ 

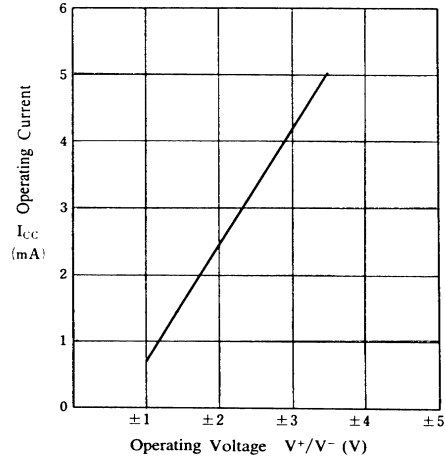
Input Bias Current vs. Temperature

 $(V^+/V^- = \pm 2.5V)$ 

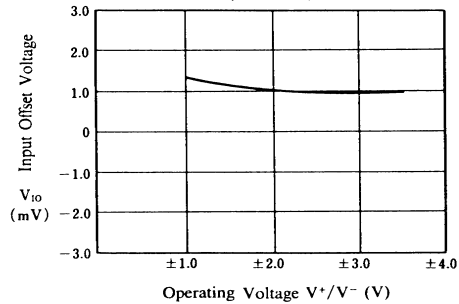
Maximum Output Voltage Swing vs. Operating Voltage

 $(R_L = 2.5k\Omega, T_a = 25^{\circ}C)$ 

Operating Current vs. Operating Voltage

 $(T_a = 25^{\circ}C)$ 

Input Offset Voltage vs. Operating Voltage

 $(T_a = 25^{\circ}C)$ 

Maximum Output Voltage vs. Frequency

 $(V^+/V^- = \pm 2.5V, R_L = 2.5k\Omega, T_0 = 25^{\circ}C)$ 