



**3308**

**LINEAR INTEGRATED CIRCUIT**

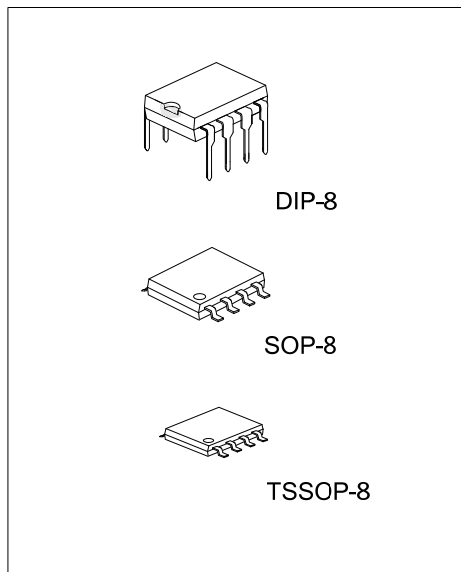
**DUAL HIGH CURRENT OPERATIONAL AMPLIFIER**

■ DESCRIPTION

The UTC **3308** integrated circuit is a high gain, high output current, high output voltage swing dual operational amplifier capable of driving 150mA, specially for CD ROM, DVD devices.

■ FEATURES

- \*Single Supply
- \*Operating Voltage (+3V~+15V) ( $\pm 1.5V \sim \pm 7.5V$ )
- \*High Output Current (150mA)
- \*High Frequency Noise Rejection
- \*Internal Enhanced Frequency Compensation



■ ORDERING INFORMATION

Ordering Number		Package	Packing
Lead Free	Halogen Free		
3308L-D08-T	3308G-D08-T	DIP-8	Tube
-	3308G-P08-R	TSSOP-8	Tape Reel
-	3308G-S08-R	SOP-8	Tape Reel

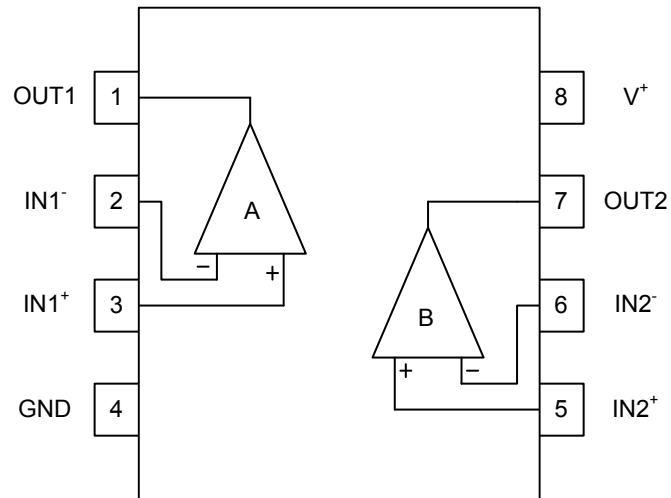
<p>3308L-D08-T</p> <ul style="list-style-type: none"> <li>(1) Packing Type</li> <li>(2) Package Type</li> <li>(3) Green Package</li> </ul>	<ul style="list-style-type: none"> <li>(1) T: Tube, R: Tape Reel</li> <li>(2) D08: DIP-8, P08: TSSOP-8, S08: SOP-8</li> <li>(3) L: Lead Free, G: Halogen Free and Lead Free</li> </ul>
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■ MARKING

DIP-8	SOP-8	TSSOP-8



## ■ PIN CONFIGURATIONS



■ ABSOLUTE MAXIMUM RATINGS ( $T_A=25^\circ\text{C}$ )

PARAMETER	SYMBOL	RATINGS	UNIT
Supply Voltage	V+	15V / $\pm 7.5\text{V}$	V
Differential Input Voltage	$V_{I(\text{DIFF})}$	15	V
Input Voltage	$V_{\text{IN}}$	-0.3 ~ +15	V
Power Dissipation	$P_D$	300	mW
Junction Temperature	$T_J$	+125	$^\circ\text{C}$
Operating Temperature	$T_{\text{OPR}}$	-20~+85	$^\circ\text{C}$
Storage Temperature	$T_{\text{STG}}$	-40~+150	$^\circ\text{C}$

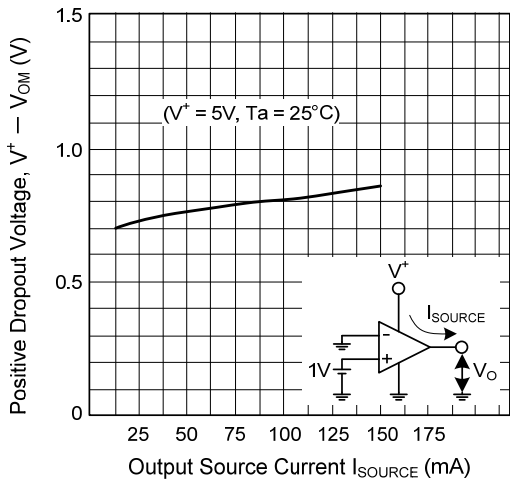
Note: Absolute maximum ratings are those values beyond which the device could be permanently damaged. Absolute maximum ratings are stress ratings only and functional device operation is not implied.

■ ELECTRICAL CHARACTERISTICS ( $T_A=25^\circ\text{C}$ ,  $V^+=5\text{V}$ )

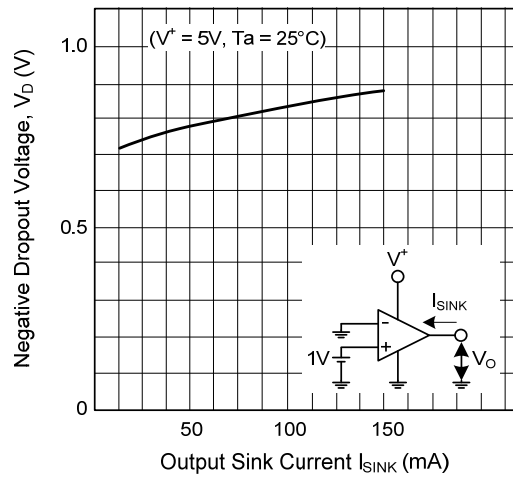
PARAMETER	SYMBOL	TEST CONDITIONS	MIN	TYP	MAX	UNIT
Input Offset Voltage	$V_{I(\text{OFF})}$	$R_S=0\Omega$		2	5	mV
Input Offset Current	$I_{I(\text{OFF})}$			5	100	nA
Input Bias Current	$I_{I(\text{BIAS})}$			100	500	nA
Large Signal Voltage Gain	$G_V$	$R_L=2\text{k}\Omega$	88	100		dB
Input Common Voltage Range	$V_{I(\text{COM})}$		$V^+-2$			V
Maximum Output Voltage Swing 1	$V_{\text{OM1}}$	$R_L \geq 2\text{k}\Omega$	3.5			V
Maximum Output Voltage Swing 2	$V_{\text{OM2}}$	$I_O=70\text{mA}$	3.2			V
Common Mode Rejection Ratio	CMR		80	90		dB
Supply Voltage Rejection Ratio	SVR		80	90		dB
Operating Current	$I_{\text{CC}}$	$R_L = \infty$	3	4	5	mA
Slew Rate	SR			1.0		V/ $\mu\text{s}$
Unity Gain Bandwidth	GB			1.3		MHz
Operating Voltage Range	$V^+$				15	V

■ TYPICAL CHARACTERISTICS

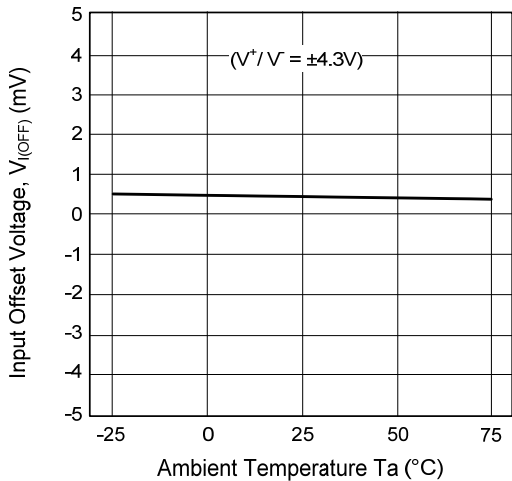
Output Source Current vs.  $V_{SAT}^+$



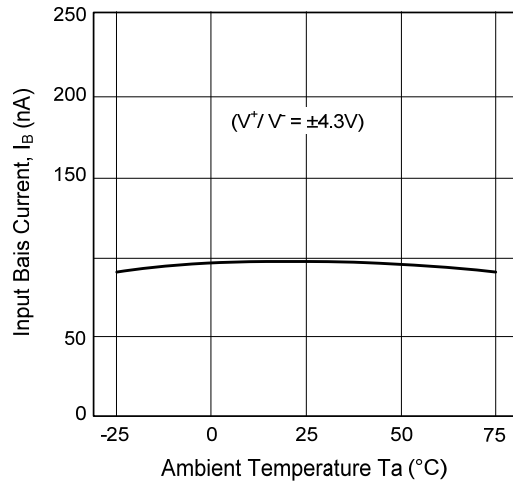
Output Sink Current vs.  $V_{SAT}$



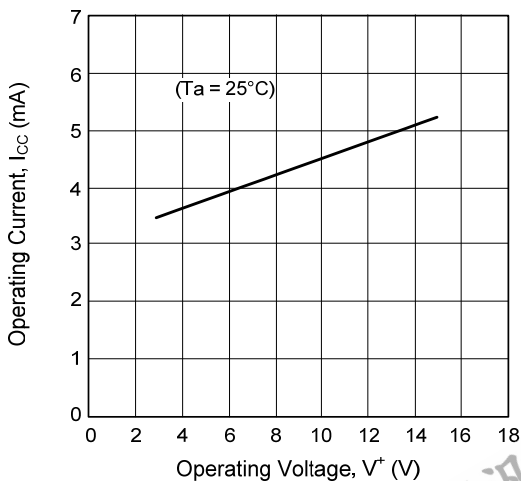
Input Offset Voltage vs. Temperature



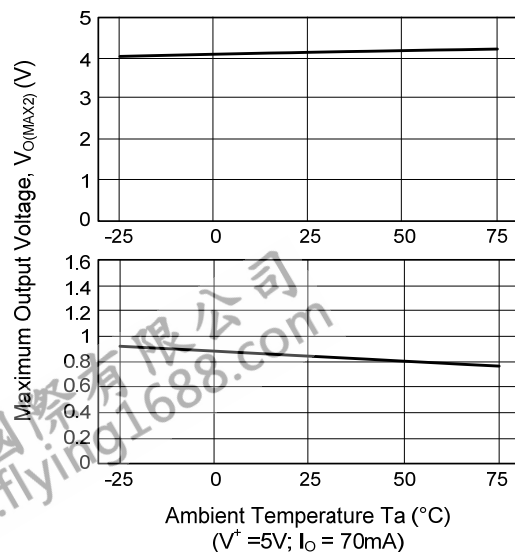
Input Bias Current vs. Temperature



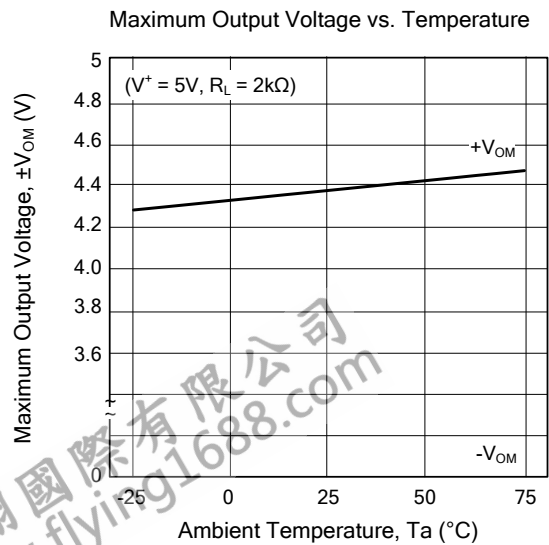
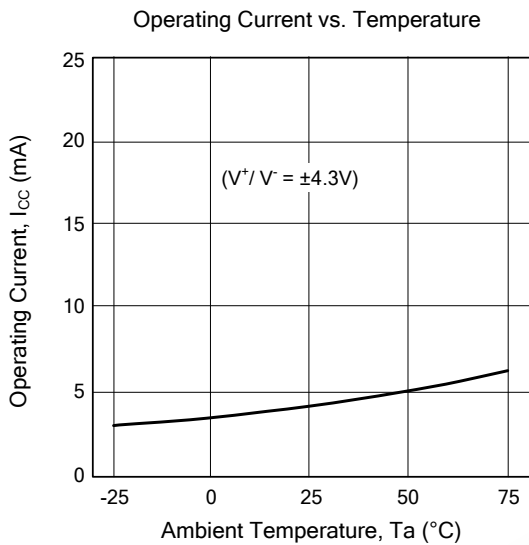
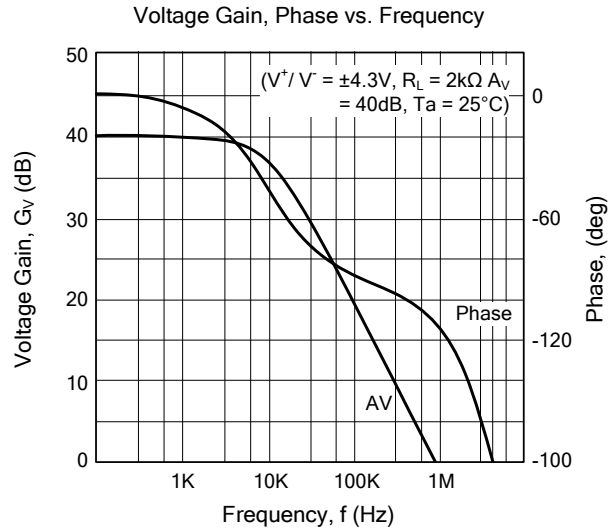
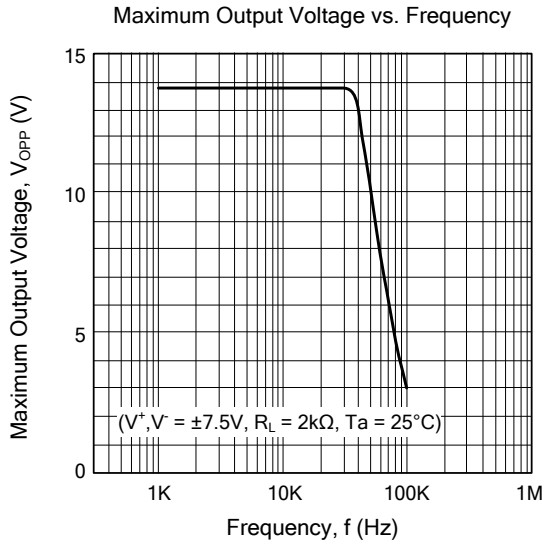
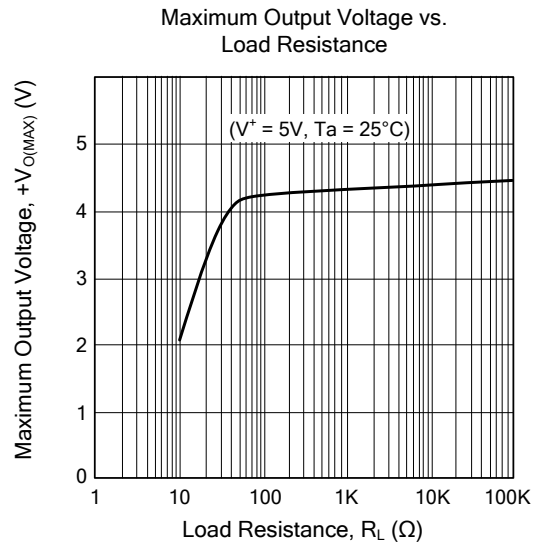
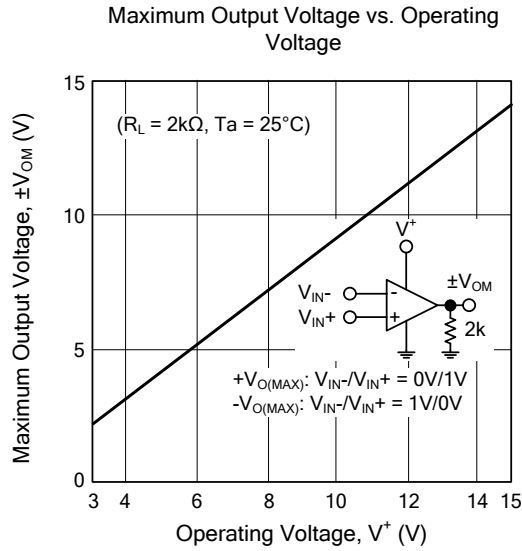
Operating Voltage vs. Operating Current



Maximum Output Voltage Swing 2 vs. Temperature



■ TYPICAL CHARACTERISTICS(Cont.)



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