

# DC AMPLIFIER

# CA3000

General-purpose amplifier used in Schmitt-trigger, RC-coupled feedback-amplifier, mixer, comparator, crystal-oscillator, sense-amplifier, and modulator applications. 10-lead "TO-5" package; Outline No. 1. For schematic diagram and characteristics curves, see Fig. 71 and Figs. 73 through 82.

## MAXIMUM RATINGS

Positive DC Supply Voltage .....	$V_{CC}$	+10	V
Negative DC Supply Voltage .....	$V_{EE}$	-10	V
Input Signal Voltage:			
Single-ended .....		$\pm 2$	V
Common-mode .....		$\pm 2$	V
Total Device Dissipation .....		300	mW
Temperature Range:			
Operating .....		-55 to +125	°C
Storage .....		-65 to +200	°C

## TYPICAL CHARACTERISTICS (At ambient temperature = 25°C, $V_{CC} = +6V$ , $V_{EE} = -6V$ )

Input Offset Voltage .....	$V_{IO}$	1.4	mV
Input Offset Current .....	$I_{IO}$	1.2	$\mu A$
Input Bias Current .....	$I_I$	23	$\mu A$

## TYPICAL CHARACTERISTICS (continued)

Quiescent Operating Voltage:			
Terminals 4 and 5 not connected .....	$V_8$ or $V_{10}$	2.6	V
Terminal 4 not connected, terminal 5 connected to $V_{EE}$ .....	$V_8$ or $V_{10}$	4.2	V
Terminal 4 connected to $V_{EE}$ , terminal 5 not connected .....	$V_8$ or $V_{10}$	-1.5	V
Terminals 4 and 5 connected to $V_{EE}$ .....	$V_8$ or $V_{10}$	0.6	V
Device Dissipation .....	$P_T$	30	mW
Differential Voltage Gain (Single-Ended Input, $f = 1$ kHz):			
Single-ended output .....	$A_{DIFF}$	32	dB
Double-ended output .....	$A_{DIFF}$	37	dB
-3-dB Bandwidth .....	BW	650	kHz
Maximum Output-Voltage Swing ( $f = 1$ kHz)	$V_{out}(P-P)$	6.4	$V_{p-p}$
Common-Mode Rejection Ratio ( $f = 1$ kHz)	CMR	98	dB
Single-Ended Input Impedance ( $f = 1$ kHz) ..	$Z_{in}$	195	k $\Omega$
Single-Ended Output Impedance ( $f = 1$ kHz)	$Z_{out}$	8	k $\Omega$
Total Harmonic Distortion ( $f = 1$ kHz) .....	THD	0.2	%
Useful Frequency Range .....		dc to 30	MHz
AGC Range (Maximum voltage gain to com- plete cutoff, $f = 1$ kHz) .....	AGC	90	dB