

CA3001

VIDEO AND WIDE-BAND AMPLIFIER

General-purpose amplifier used in dc, if, and video amplifier, Schmitt-trigger, mixer, and modulator applications. 12-lead "TO-5" package; Outline No. 2. For schematic diagram and characteristics curves, see Fig. 92 and Figs. 94 through 101.

MAXIMUM RATINGS

Positive DC Supply Voltage	V_{CC}	+10	V
Negative DC Supply Voltage	V_{EE}	-10	V
Input Signal Voltage			
Single-ended		± 2.5	V
Common-mode		± 2.5	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_{I0}	1.5	mV
Input Offset Current	I_{I0}	3.4	μA
Input Bias Current	I_I	10	μA
Output Offset Voltage	V_{00}	52	mV
Quiescent Operating Voltage:			
Terminals 4 and 5 not connected	V_8 or V_{11}	4.4	V
Terminal 4 not connected, terminal 5 connected to V_{EE}	V_8 or V_{11}	4.8	V

TYPICAL CHARACTERISTICS (continued)

Terminal 4 connected to V_{EE} , terminal 5 not connected	V_6 or V_{11}	2.9	V
Terminals 4 and 5 connected to V_{EE}	V_6 or V_{11}	3.9	V
Device Dissipation	P_T	80	mW
Differential Voltage Gain (Single-ended input and output):			
$f = 1.75$ MHz	A_{DIFF}	19	dB
$f = 20$ MHz	A_{DIFF}	14	dB
-3-dB Bandwidth	BW	16	MHz
Maximum Output Voltage Swing ($f = 1.75$ MHz)	$V_{out}(P-P)$	5	V_{p-p}
Noise Figure:			
$R_s = 1$ k Ω , $f = 1.75$ MHz	NF	5	dB
$R_s = 1$ k Ω , $f = 11.7$ MHz	NF	7.7	dB
Common-Mode Rejection Ratio ($f = 1$ kHz)	CMR	70	dB
Parallel Input Resistance ($f = 1.75$ MHz)	R_{in}	50	k Ω
Parallel Input Capacitance ($f = 1.75$ MHz)	C_{in}	7	pF
Output Resistance ($f = 1.75$ MHz)	R_{out}	70	Ω
Useful Frequency Range		dc to 20	MHz
AGC Range (Maximum voltage gain to com- plete cutoff, $f = 1.75$ MHz)	AGC	60	dB