**REL-LABS INC.***Hybrid Microelectronic Manufacturing***RLO002**

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LINEAR/PULSE POWER AMPLIFIER**DESCRIPTION**

The RL0002/0002C is a complementary symmetrical current amplifier which exhibits:

- exceptional linearity in the entire output voltage range without crossover distortions
- power efficiency approaching the theoretical maximum
- high input impedance
- low output impedance
- wide bandwidth. These outstanding performances are obtainable due to the V_{BE} pairing and thermal feedback of the 4 transistors keeping the bias current constant, thereby preventing thermal runaway.

MAXIMUM RATINGS

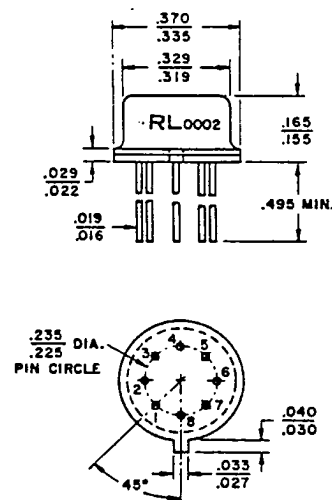
Supply Voltage	±22V
Power Dissipation Ambient	600 mW
Input Voltage (Equal to Power Supply Voltage)	
Storage Temperature Range	-65°C to +150°C
Operating Temperature Range (RL0002)	-55°C to +125°C
(RL0002C)	0°C to +70°C
Steady State Output Current	0° to ±100 mA
Pulsed Output Current (50 ms On/1 sec Off)	±400 mA

ELECTRICAL CHARACTERISTICS

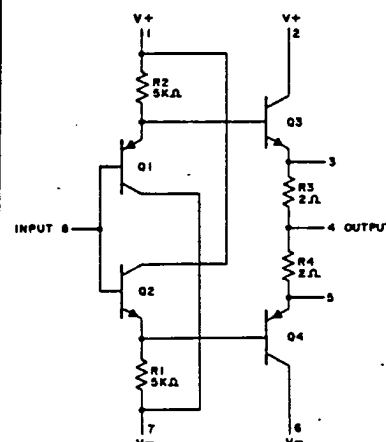
($T_A = 25^\circ\text{C}$ $V_{CC} = V_{EE} = \pm 12\text{V}$ unless otherwise specified)

NC0002C ratings are for 0°C to +70°C

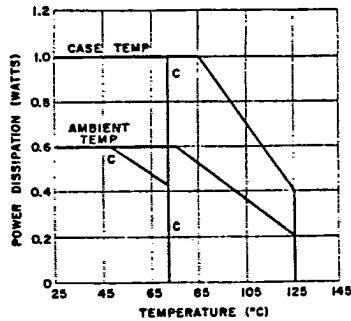
PARAMETERS	CONDITIONS	MIN	TYP	MAX	UNITS
Voltage Gain	$R_S = 10\text{ k}\Omega$, $R_L = 1.0\text{ k}\Omega$ $V_{IN} = 3.0\text{ V}_{PP}$, $f = 1.0\text{ kHz}$ $T_A = -55^\circ\text{C}$ to 125°C	.95	.97	—	—
Input Impedance	$R_S = 200\text{ k}\Omega$, $V_{IN} = 1.0\text{ V}_{rms}$ $f = 1.0\text{ kHz}$, $R_L = 1.0\text{ k}\Omega$	180	200	—	k Ω
Output Impedance	$V_{IN} = 1.0\text{ V}_{rms}$, $f = 1.0\text{ kHz}$ $R_L = 50\Omega$, $R_S = 10\text{ k}\Omega$	—	6	10	Ω
Output Voltage Swing	$R_L = 1.0\text{ k}\Omega$, $f = 1.0\text{ kHz}$	±10	±11	—	V
DC Input Offset Voltage	$R_S = 10\text{ k}\Omega$, $R_L = 1.0\text{ k}\Omega$ $T_A = -55^\circ\text{C}$ to 125°C	—	±40	±100	mV
DC Input Offset Current	$R_S = 10\text{ k}\Omega$, $R_L = 1.0\text{ k}\Omega$ $T_A = -55^\circ\text{C}$ to 125°C	—	±6.0	±10	μA
Harmonic Distortion	$V_{IN} = 5.0\text{ V}_{rms}$, $f = 1.0\text{ kHz}$	—	0.1	—	%
Bandwidth	$V_{IN} = 1.0\text{ V}_{rms}$, $R_L = 50\Omega$, $f = 1\text{ MHz}$	30	50	—	MHz
Positive Supply Current	$R_S = 10\text{ k}\Omega$, $R_L = 1\text{ k}\Omega$	—	+6.0	+10.0	mA
Negative Supply Current	$R_S = 10\text{ k}\Omega$, $R_L = 1\text{ k}\Omega$	—	-6.0	-10.0	mA

OUTLINE DIAGRAM

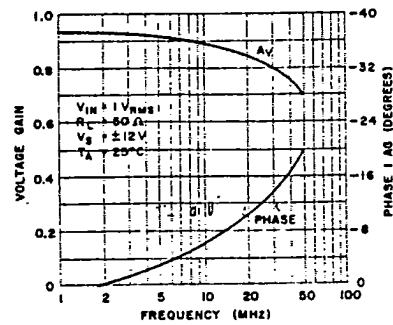
Note: All dimensions in inches

SCHEMATIC

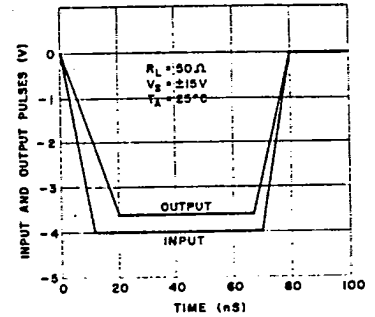
MAXIMUM POWER DISSIPATION



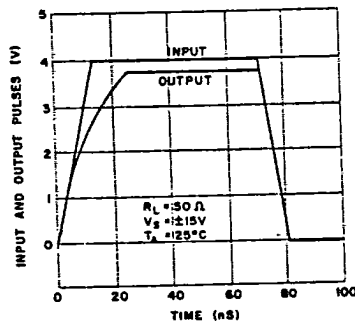
FREQUENCY RESPONSE



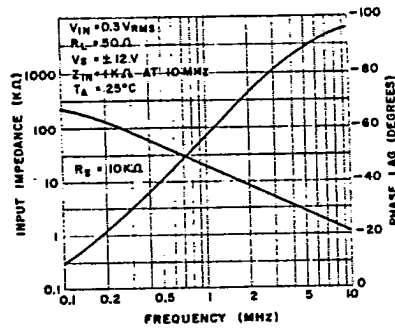
NEGATIVE PULSE



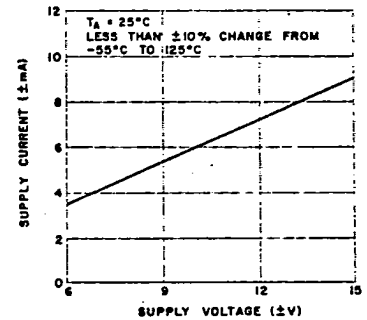
POSITIVE PULSE



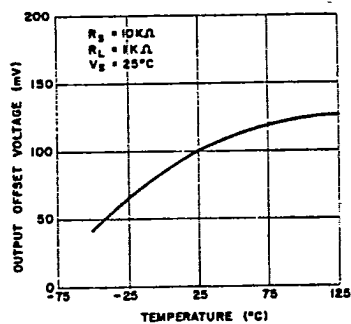
INPUT IMPEDANCE (MAGNITUDE & PHASE)



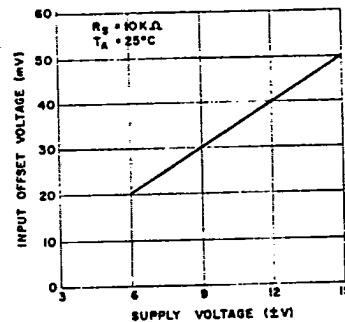
SUPPLY CURRENT



OUTPUT OFFSET VOLTAGE

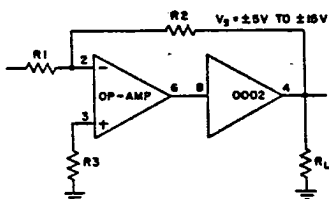


INPUT OFFSET VOLTAGE

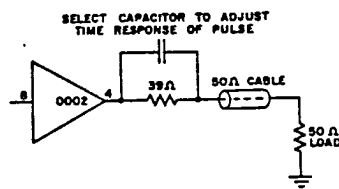


APPLICATIONS

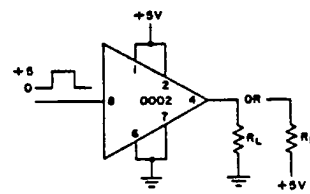
HIGH CURRENT OPERATIONAL AMPLIFIER



LINE DRIVER



TTL PULSE BUFFER



MOS PULSE BUFFER

