

STANDARD TEMPERATURE RANGE, 0°C + 70°C

High performance operational amplifier

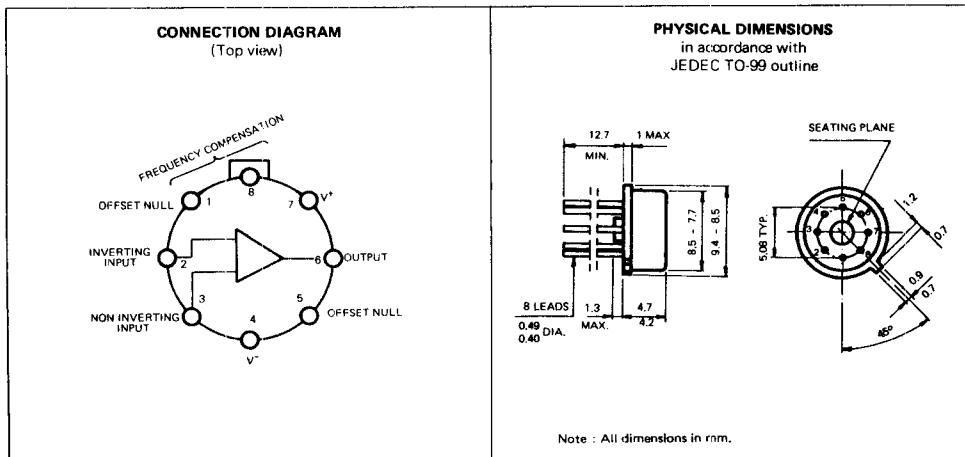
- SHORT-CIRCUIT PROTECTION
- OFFSET VOLTAGE NULL CAPABILITY
- LARGE COMMON-MODE AND DIFFERENTIAL VOLTAGE RANGES
- LOW POWER CONSUMPTION
- NO LATCH-UP

The L 148 T1 is a high performance monolithic operational amplifier intended for a wide range of analog applications where tailoring of frequency characteristics is desirable. High common mode voltage range and absence of "latch-up" make the L 148 T1 ideal for use as a voltage follower. The high gain and wide range of operating voltages provide superior performance in integrator, summing amplifier, and general feedback applications. The L 148 T1 is short-circuit protected and has the same pin configuration as the L 141 operational amplifier. Unity gain frequency compensation is achieved by means of a single 30 pF capacitor. For full temperature range operation (-55°C + 125°C), see L 148 T2 data sheet.

ABSOLUTE MAXIMUM RATINGS

Supply Voltage	± 18V
Internal Power Dissipation (1)	500 mW
Differential Input Voltage	± 30V
Input Voltage (2)	± 15V
Storage Temperature Range	-55°C + 150°C
Operating Temperature Range	0°C + 70°C
Lead Temperature (soldering, 60 secs)	300°C
Output Short-Circuit Duration (3)	Indefinite

Notes on the following page.



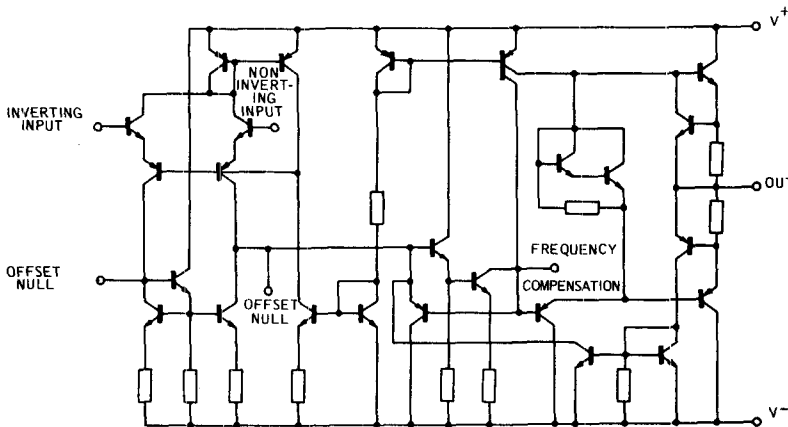
ORDERING NUMBER
L148 T1

STANDARD TEMPERATURE RANGE

ELECTRICAL CHARACTERISTICS ($V_S = \pm 15V$, $T_A = 25^\circ C$ unless otherwise noted)

PARAMETER	CONDITIONS	Min.	Typ.	Max.	Units
Input Offset Voltage	$R_S \leq 10K\Omega$		1	6	mV
Input Offset Current			20	200	nA
Input Bias Current			80	500	nA
Input Resistance		0.3	2		M Ω
Input Capacitance			1.4		pF
Large-Signal Voltage Gain	$R_L \geq 2K\Omega$ $V_{OUT} = \pm 10V$	50.000	200.000		
Output Resistance			75		Ω
Output Short-Circuit Current			25		mA
Power Consumption			50	85	mW
Transient Response (Unity Gain):	$V_{in} = 20mV$ $C_C = 30 pF$ $R_L = 2K\Omega$ $C_L \leq 100 pF$				
Risetime			0.3		μs
Overshoot			5.0		%
Slew Rate	$R_L \geq 2K\Omega$		0.5		V/ μs
The following specifications apply for $0^\circ C \leq T_A \leq +70^\circ C$:					
Input Offset Voltage	$R_S \leq 10K\Omega$		1	7.5	mV
Input Offset Current				300	nA
Input Bias Current				800	nA
Large-Signal Voltage Gain	$R_L \geq 2K\Omega$ $V_{OUT} = \pm 10V$	25.000			
Output Voltage Swing	$R_L \geq 2K\Omega$	± 10	± 13		V
Power Consumption			50		mW

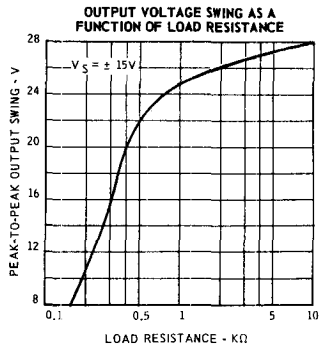
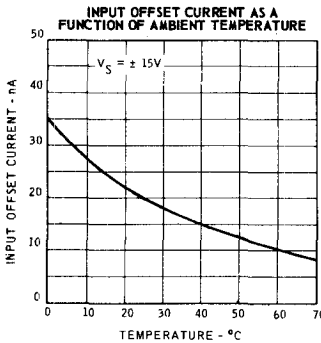
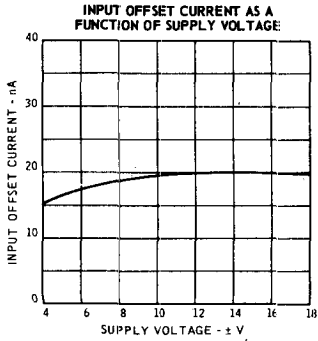
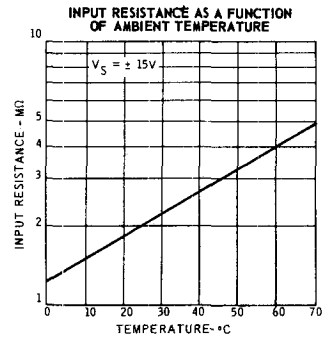
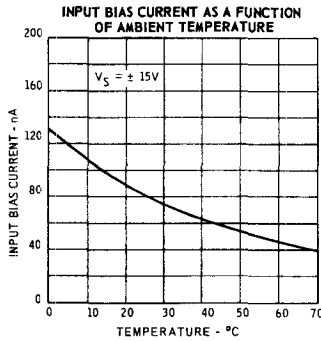
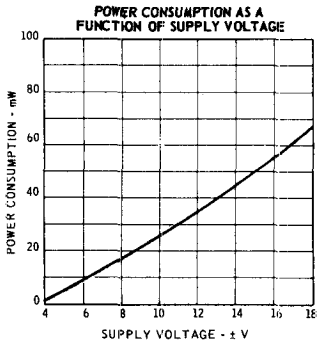
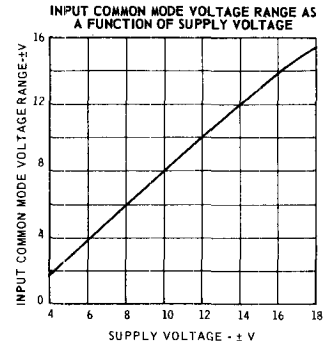
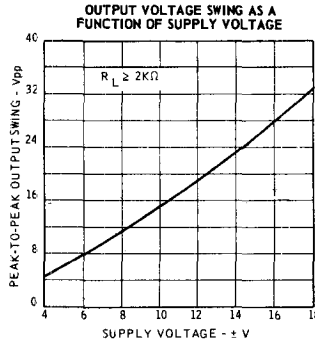
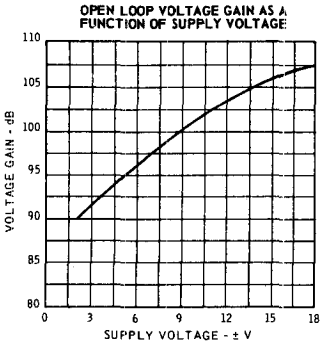
ELECTRICAL DIAGRAM



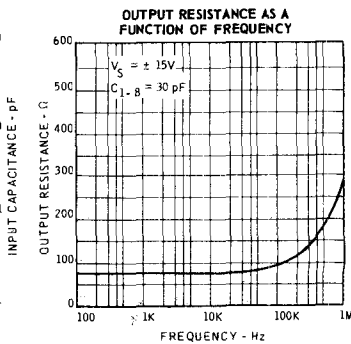
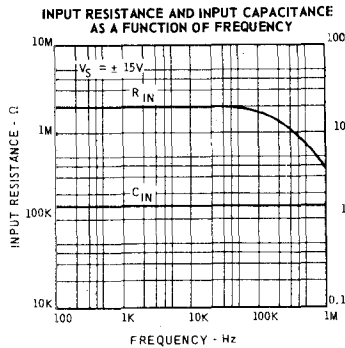
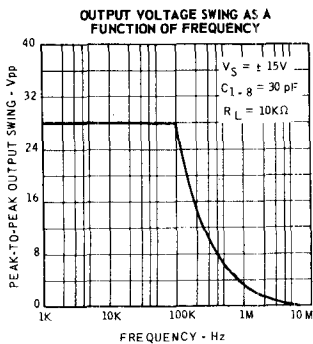
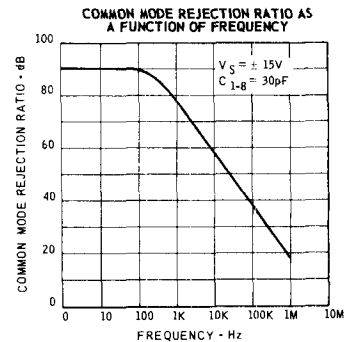
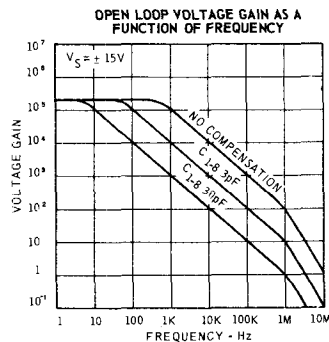
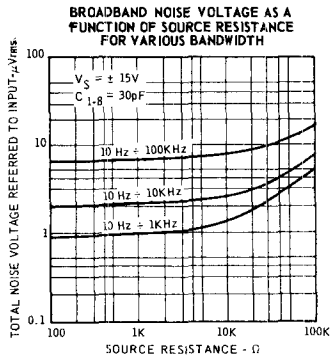
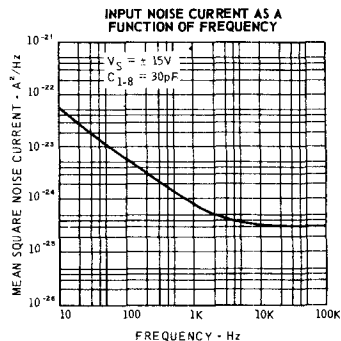
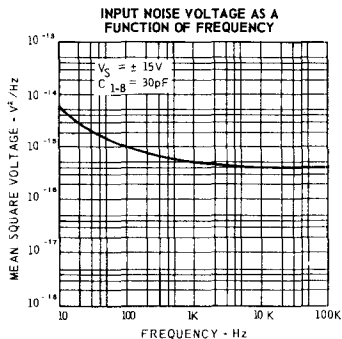
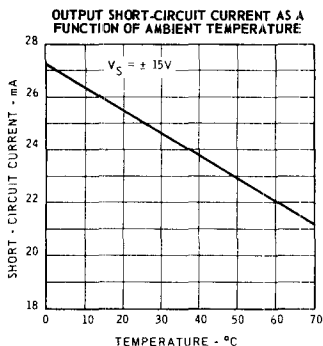
NOTES :

- 1) Rating applies for case temperatures to $+70^\circ C$.
- 2) For supply voltages less than $\pm 15V$, the absolute maximum input voltage is equal to the supply voltage.
- 3) Short circuit may be to ground or either supply. Rating applies to $+70^\circ C$ ambient temperature.

TYPICAL ELECTRICAL CHARACTERISTICS (25° C free air temperature unless otherwise noted)



TYPICAL ELECTRICAL CHARACTERISTICS (25° C free air temperature unless otherwise noted)



TYPICAL ELECTRICAL CHARACTERISTICS (25° C free air temperature unless otherwise noted)

