

CA741/..., CA747/..., CA748/..., CA1558/...**High-Reliability
Operational Amplifiers**

High-Gain Single and Dual Operational Amplifiers

The CA741, CA748, and CA1558 Slash (/) Series types are supplied in the 8-lead TO-5 style package. The CA747 is supplied in the 10-lead TO-5 style package.

TABLE A. POST BURN-IN, FINAL ELECTRICAL AND GROUP A SAMPLING TESTS

CHARACTERISTIC	SYMBOL	TEST CONDITIONS $V^+ = +15\text{ V}, V^- = -15\text{ V}$	LIMITS FOR INDICATED TEMPERATURES ($^{\circ}\text{C}$)						UNITS
			MINIMUM			MAXIMUM			
			-55	+25	+125	-55	+25	+125	
STATIC									
Input Offset Voltage	V_{IO}	—	—	—	—	6	5	6	mV
Input Offset Current	I_{IO}	—	—	—	—	500	200	200	nA
Input Bias Current	I_I	—	—	—	—	1500	500	500	nA
Supply Current		—	—	—	—	3.3	2.8	2.5	mA
Device Dissipation	P_D	—	—	—	—	100	85	75	mW
DYNAMIC									
Open-Loop Differential Voltage Gain	A_{OL}	—	25000	50000	25000	—	—	—	
Common-Mode Rejection Ratio	CMRR	—	70	70	70	—	—	—	dB
Maximum Output Voltage Swing	$V_{O(P-P)}$	$R_L \geq 10\text{ k}\Omega$ $R_L \geq 2\text{ k}\Omega$	± 12 ± 10	± 12 ± 10	± 12 ± 10	—	—	—	V
Common-Mode Input Voltage Range	V_{ICR}	—	± 12	± 12	± 12	—	—	—	V
Power-Supply Rejection, Ratio	P_{SRR}	—	76	76	76	—	—	—	db

TABLE B. DELTA LIMITS at $T_A = 25^{\circ}\text{C}$ (/1 only)

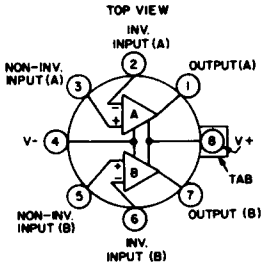
CHARACTERISTIC	SYMBOL	TEST CONDITIONS	LIMITS	UNITS
			MAX. Δ	
Input Offset Voltage	V_{io}	—	± 1	mV
Input Offset Current	I_{io}	—	± 24	nA
Input Bias Current	I_i	—	± 60	nA
Device Dissipation	P_D	—	± 18	mW

TABLE C. GROUPS C AND D END-POINT TESTS at $T_A = 25^{\circ}\text{C}$

CHARACTERISTIC	SYMBOL	SPECIAL TEST CONDITIONS	LIMITS		UNITS
			MIN.	MAX.	
Input Offset Voltage	V_{io}	—	—	8	mV
Input Offset Current	I_{io}	—	—	240	nA
Input Bias Current	I_i	—	—	800	nA
Open-Loop Differential Voltage Gain	A_{OL}	$f = 1\text{ kHz}$	33000	—	
Supply Current			—	3	mA

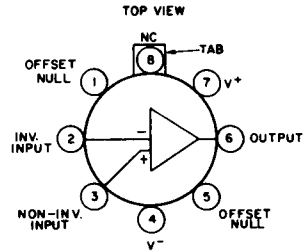
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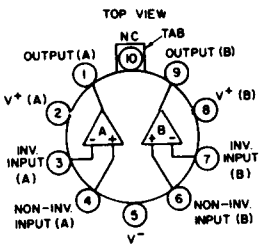
92CS-19430

Functional diagram of CA1558T with internal phase compensation.



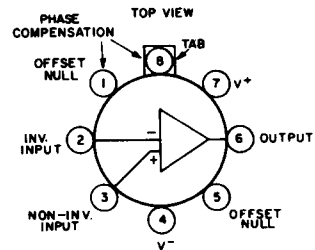
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Functional diagram of CA741T with internal phase compensation.



92CS-19427

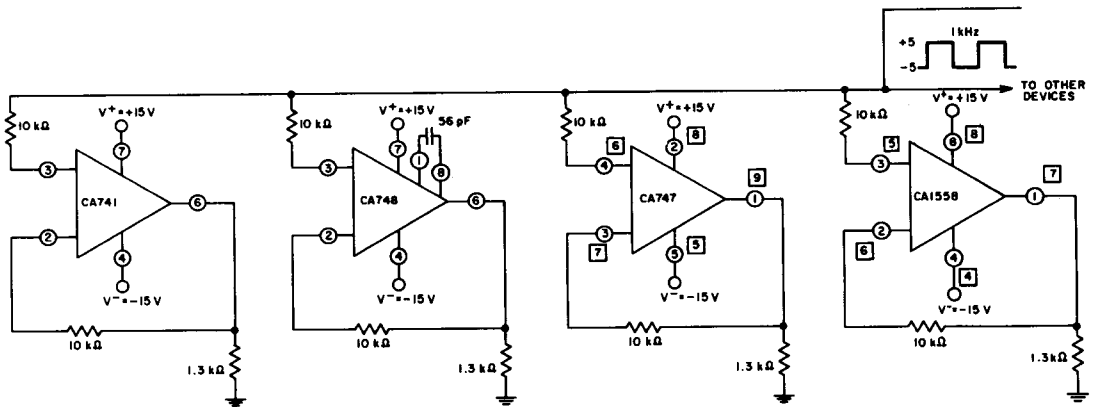
Functional diagram of CA747T with internal phase compensation.



92CS-19428

Functional diagram of CA748T with external phase compensation

Functional diagrams of operational amplifiers.



▲ THESE RESISTORS MAY BE ADJUSTED TO GIVE REQUIRED DRIVE UNDER DIFFERENT LOAD CONDITIONS

92CM-22837 TERMINAL No'S IN CIRCLES ARE FOR UNIT No. 1
TERMINAL No'S IN SQUARES ARE FOR UNIT No. 2

Burn-in and operating life-test circuit for CA741, CA747, CA748, and CA1558.