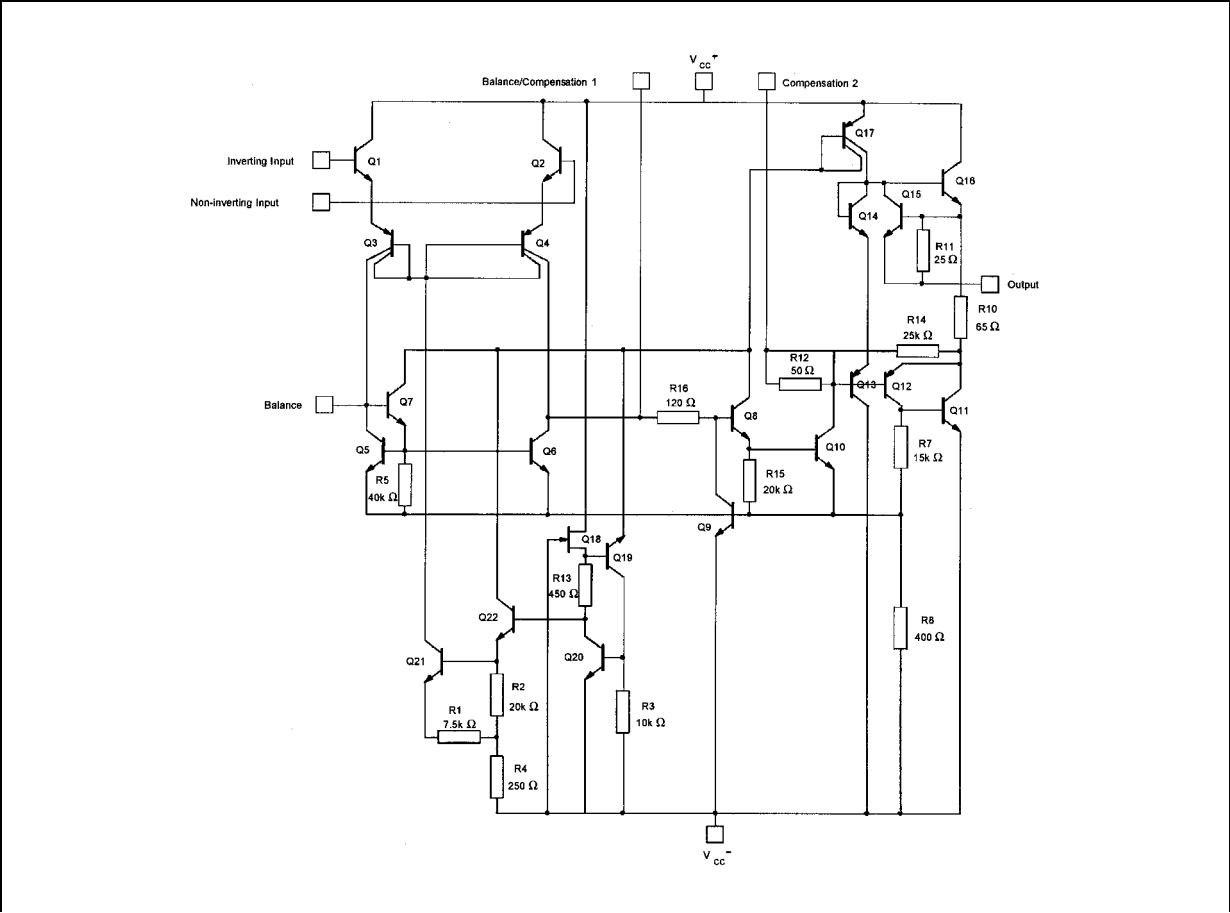


SCHEMATIC DIAGRAM



ABSOLUTE MAXIMUM RATINGS

Symbol	Parameter	UA748M	UA748I	UA748C	Unit
V_{CC}	Supply voltage	± 22			V
V_{id}	Differential Input Voltage	± 30			V
V_i	Input Voltage	± 15			V
P_{tot}	Power Dissipation ¹⁾	500			mW
	Output Short-circuit Duration	Infinite			
T_{oper}	Operating Free-air Temperature Range	-55 to +125	-40 to +105	0 to +70	°C
T_{stg}	Storage Temperature Range	-65 to +150			°C

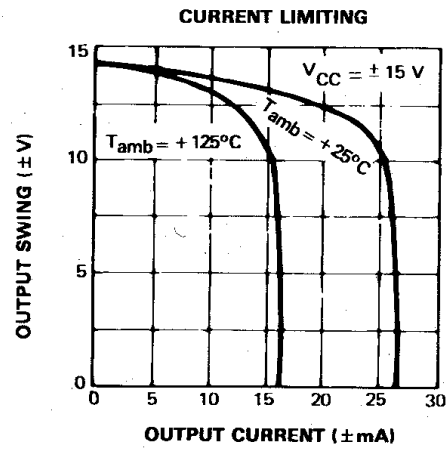
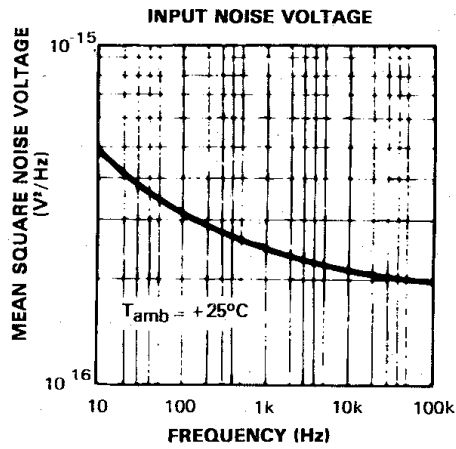
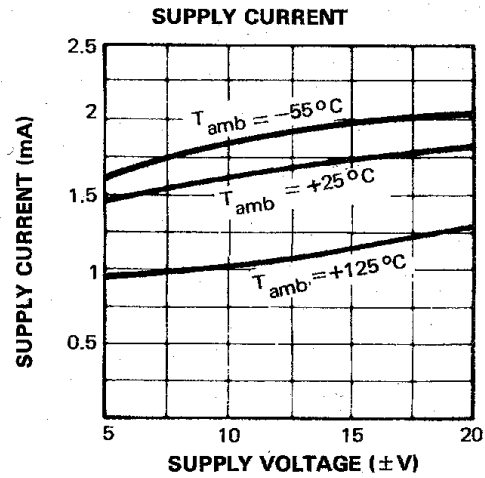
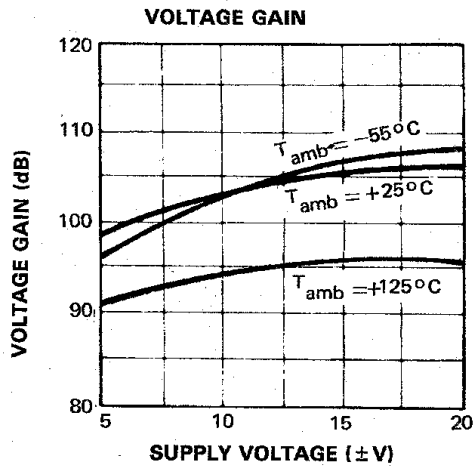
1. Power dissipation must be considered to ensure maximum junction temperature (Tj) is not exceeded.



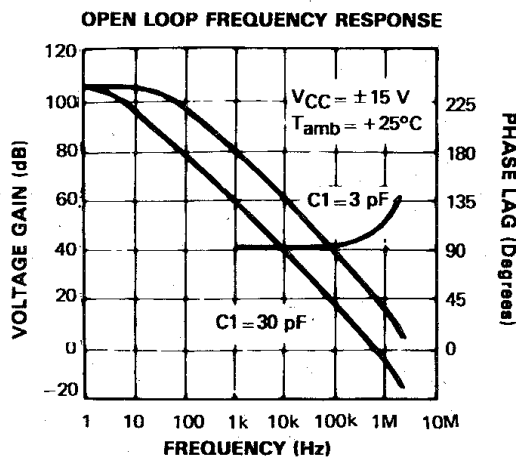
ELECTRICAL CHARACTERISTICS $V_{CC} = \pm 15V$, $T_{amb} = +25^{\circ}C$, $C_1 = 30pF$ (unless otherwise specified)

Symbol	Parameter	UA748I/M			UA748C			Unit
		Min.	Typ.	Max.	Min.	Typ.	Max.	
V_{io}	Input Offset Voltage ($R_S \leq 10k\Omega$) $T_{amb} = +25^{\circ}C$ $T_{min} \leq T_{amb} \leq T_{max}$		0.7	2 3		2	7.5 10	mV
I_{io}	Input Offset Current $T_{amb} = +25^{\circ}C$ $T_{min} \leq T_{amb} \leq T_{max}$		1.5	10 20		2	50 70	nA
I_{ib}	Input Bias Current $T_{amb} = +25^{\circ}C$ $T_{min} \leq T_{amb} \leq T_{max}$		25	75 10		70	250 300	nA
A_{vd}	Large Signal Voltage Gain ($V_O = \pm 10V$, $R_L = 2k\Omega$) $T_{amb} = +25^{\circ}C$ $T_{min} \leq T_{amb} \leq T_{max}$	50 25	100		25 15	100		V/mV
SVR	Supply Voltage Rejection Ratio ($R_S \leq 10k\Omega$) $T_{amb} = +25^{\circ}C$ $T_{min} \leq T_{amb} \leq T_{max}$	80 80	96		70 70	96		dB
I_{CC}	Supply Current, no load $T_{amb} = +25^{\circ}C$ $T_{min} \leq T_{amb} \leq T_{max}$		1.8	3 3		1.8	3 3	mA
V_{icm}	Input Common Mode Voltage Range ($V_{CC} = \pm 20V$) $T_{amb} = +25^{\circ}C$ $T_{min} \leq T_{amb} \leq T_{max}$	± 15 ± 15			± 15 ± 15			V
CMR	Common Mode Rejection Ratio ($R_S \leq 10k\Omega$) $T_{amb} = +25^{\circ}C$ $T_{min} \leq T_{amb} \leq T_{max}$	80 80	96		70 70	96		dB
I_{OS}	Output short Circuit Current	10	30	50	10	30	50	mA
$\pm V_{opp}$	Output Voltage Swing ($V_{CC} = \pm 15V$) $T_{amb} = +25^{\circ}C$ $T_{min} \leq T_{amb} \leq T_{max}$ $R_L = 10k\Omega$ $R_L = 2k\Omega$ $R_L = 10k\Omega$ $R_L = 2k\Omega$	12 10 12 10	14 13		12 10 12 10	14 13		V
SR	Slew Rate ¹⁾ $V_i = \pm 10V$, $R_L = 2k\Omega$, $C_L = 100pF$, unity Gain	0.25	0.5		0.25	0.5		V/ μs
t_r	Rise Time $V_i = \pm 20mV$, $R_L = 2k\Omega$, $C_L = 100pF$, unity Gain		0.3			0.3		μs
K_{ov}	Overshoot $V_i = 20mV$, $R_L = 2k\Omega$, $C_L = 100pF$, unity Gain		5			5		%
Z_i	Input Impedance ($V_{CC} = \pm 15V$)	1.5	4		1.5	4		M Ω
R_o	Output Resistance ($V_{CC} = \pm 15V$)		75			75		Ω
GBP	Gain Bandwidth Product $V_i = 10mV$, $R_L = 2k\Omega$, $C_L = 100pF$, $f = 100kHz$	0.5	1		0.5	1		MHz
THD	Total Harmonic Distortion $f = 1kHz$, $A_v = 20dB$, $R_L = 2k\Omega$, $V_O = 2V_{pp}$, $C_L = 100pF$		0.015			0.015		%
DI_{io}	Input Offset Current Drift $25^{\circ}C \leq T_{max}$ $T_{min} \leq T_{amb} \leq T_{max}$		10 20	100 200		10 20	300 600	pA/ $^{\circ}C$
DV_{io}	Input Offset Voltage Drift $T_{min} \leq T_{amb} \leq T_{max}$		3	15		6	30	$\mu V/^{\circ}C$

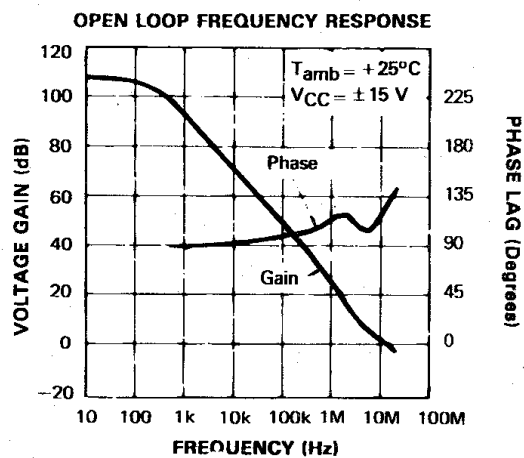
1. May be improved up to 10V/ μs in inverting amplifier configuration.

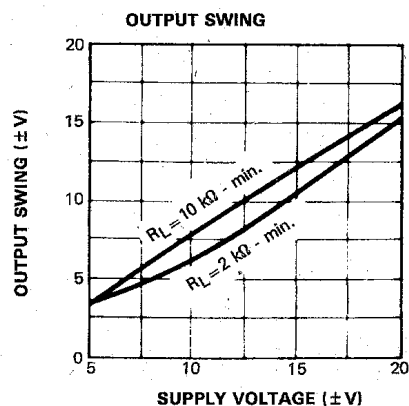
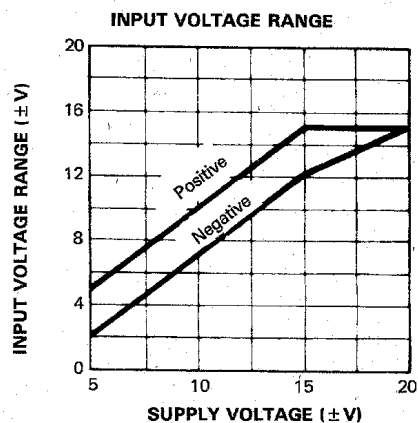


SINGLE POLE COMPENSATION

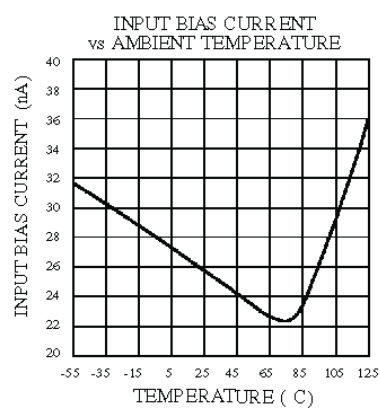
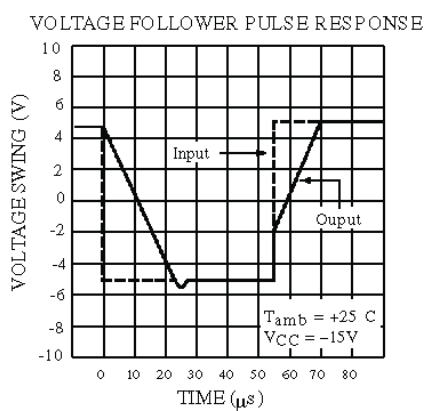
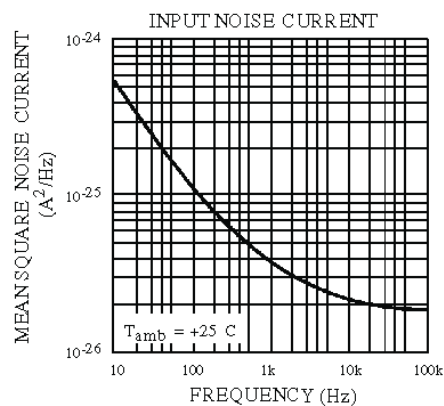
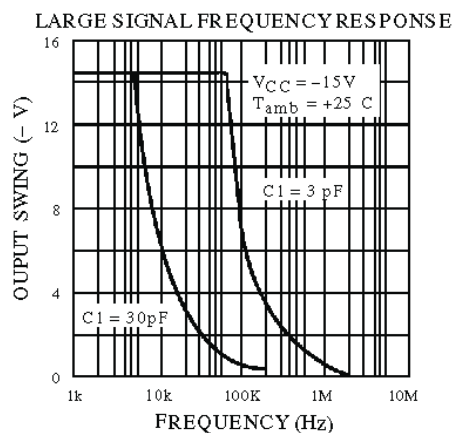


FEED FORWARD COMPENSATION

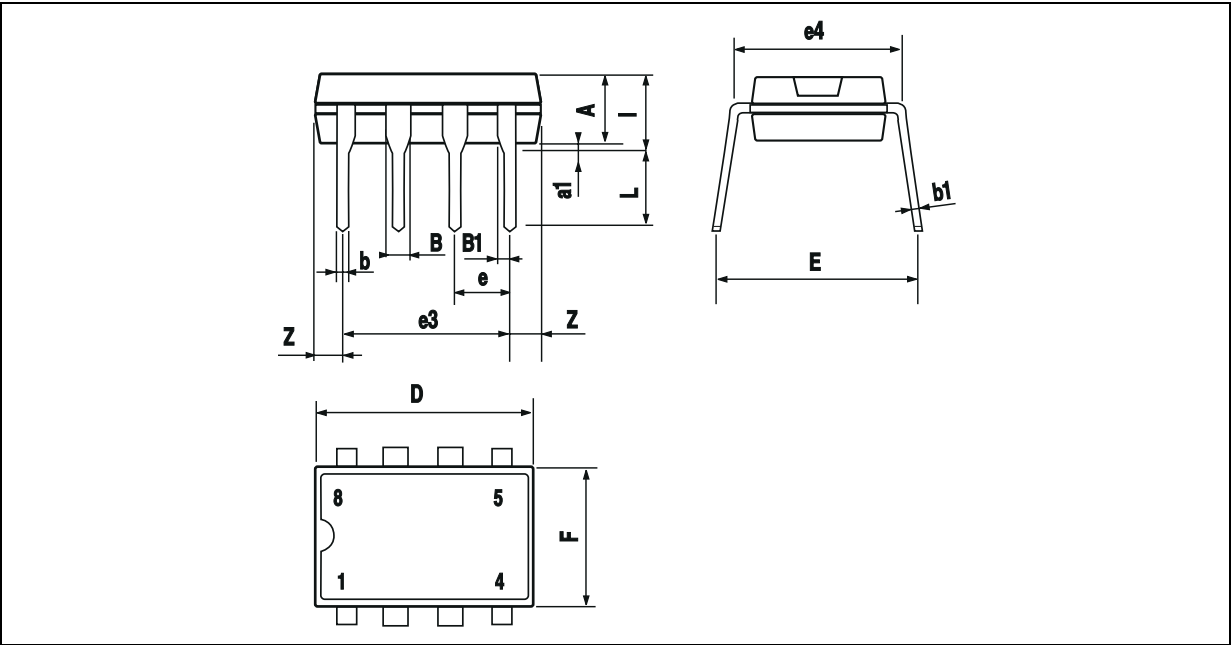




SINGLE POLE COMPENSATION

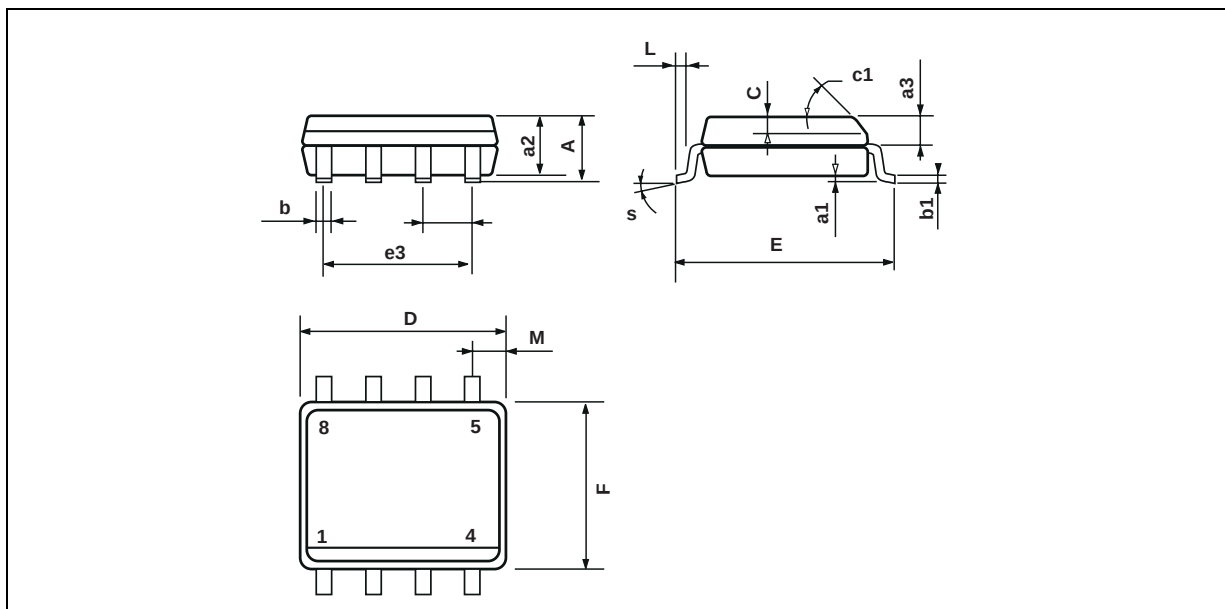


PACKAGE MECHANICAL DATA
8 PINS - PLASTIC DIP



Dim.	Millimeters			Inches		
	Min.	Typ.	Max.	Min.	Typ.	Max.
A		3.32			0.131	
a1	0.51			0.020		
B	1.15		1.65	0.045		0.065
b	0.356		0.55	0.014		0.022
b1	0.204		0.304	0.008		0.012
D			10.92			0.430
E	7.95		9.75	0.313		0.384
e		2.54			0.100	
e3		7.62			0.300	
e4		7.62			0.300	
F			6.6			0.260
i			5.08			0.200
L	3.18		3.81	0.125		0.150
Z			1.52			0.060

PACKAGE MECHANICAL DATA **8 PINS - PLASTIC MICROPACKAGE (SO)**



Dim.	Millimeters			Inches		
	Min.	Typ.	Max.	Min.	Typ.	Max.
A			1.75			0.069
a1	0.1		0.25	0.004		0.010
a2			1.65			0.065
a3	0.65		0.85	0.026		0.033
b	0.35		0.48	0.014		0.019
b1	0.19		0.25	0.007		0.010
C	0.25		0.5	0.010		0.020
c1	45° (typ.)					
D	4.8		5.0	0.189		0.197
E	5.8		6.2	0.228		0.244
e		1.27			0.050	
e3		3.81			0.150	
F	3.8		4.0	0.150		0.157
L	0.4		1.27	0.016		0.050
M			0.6			0.024
S	8° (max.)					

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