

Differenzverstärker

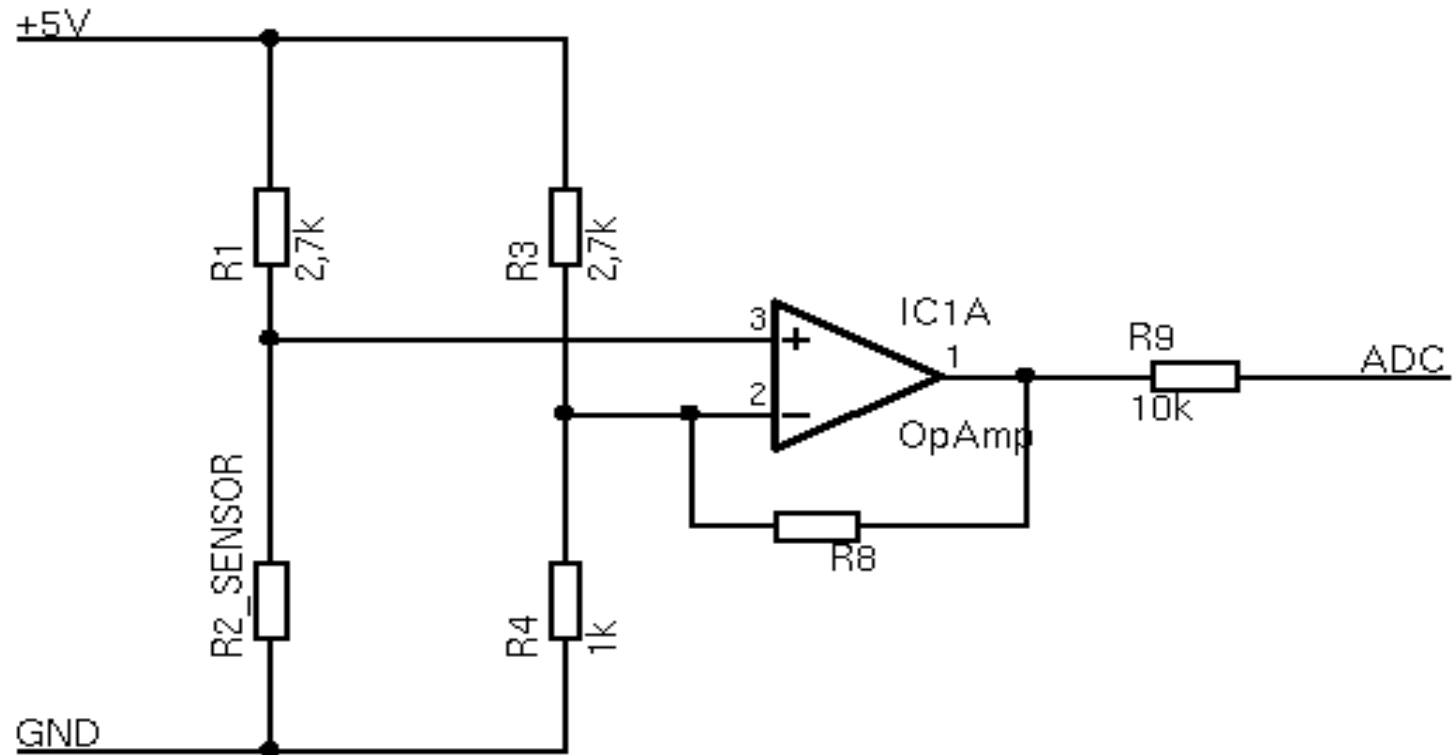
Verstärkung = $1 + R8 / (R4 \parallel R3)$

R8 [kΩ]	Verstärkung (A)
2,2	4,015
6,8	10,319

Messpunkte:

In+	OpAmp Eingangspin
In-	OpAmp Eingangspin
Out	OpAmp Ausgangspin
Masse	Am Netzteil

Einstellung von In+ durch
Veränderung von R2 (Poti)



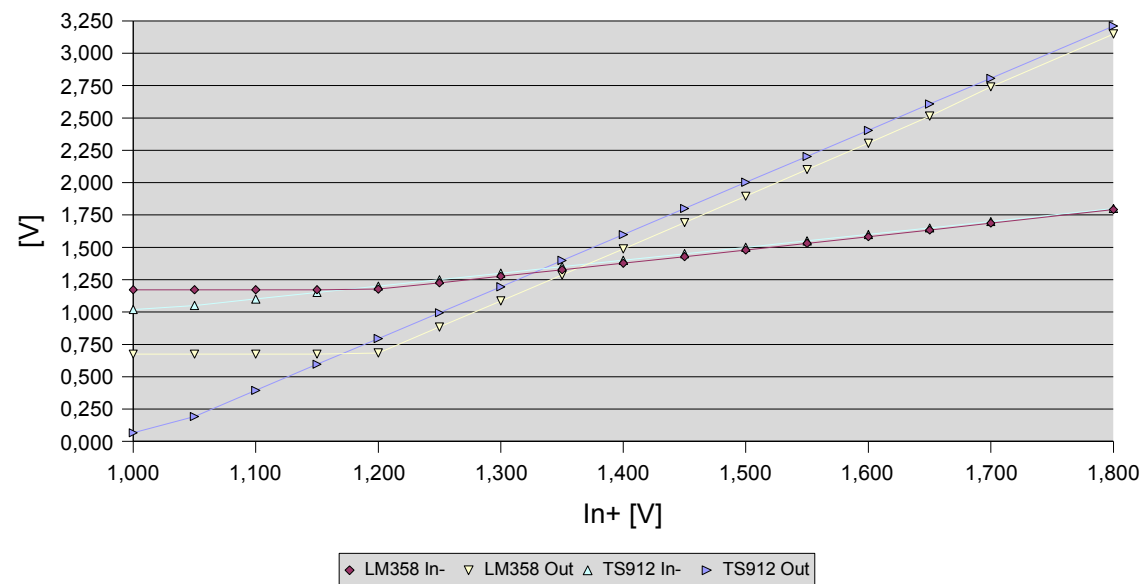
A=4,015

LM358

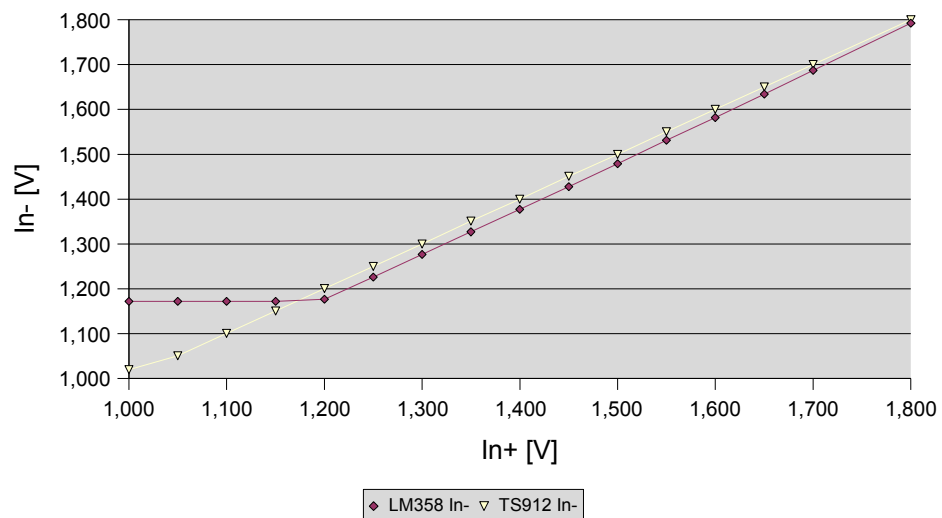
TS912

In+	LM358 In-	LM358 Out	TS912 In-	TS912 Out
1,000	1,172	0,675	1,020	0,067
1,050	1,172	0,675	1,051	0,192
1,100	1,172	0,675	1,101	0,394
1,150	1,172	0,675	1,151	0,596
1,200	1,177	0,684	1,201	0,795
1,250	1,226	0,884	1,250	0,994
1,300	1,277	1,086	1,300	1,195
1,350	1,327	1,286	1,351	1,399
1,400	1,377	1,488	1,400	1,599
1,450	1,428	1,691	1,451	1,801
1,500	1,479	1,895	1,500	2,003
1,550	1,531	2,101	1,550	2,202
1,600	1,582	2,305	1,600	2,404
1,650	1,634	2,515	1,650	2,608
1,700	1,687	2,740	1,700	2,807
1,800	1,792	3,150	1,800	3,211

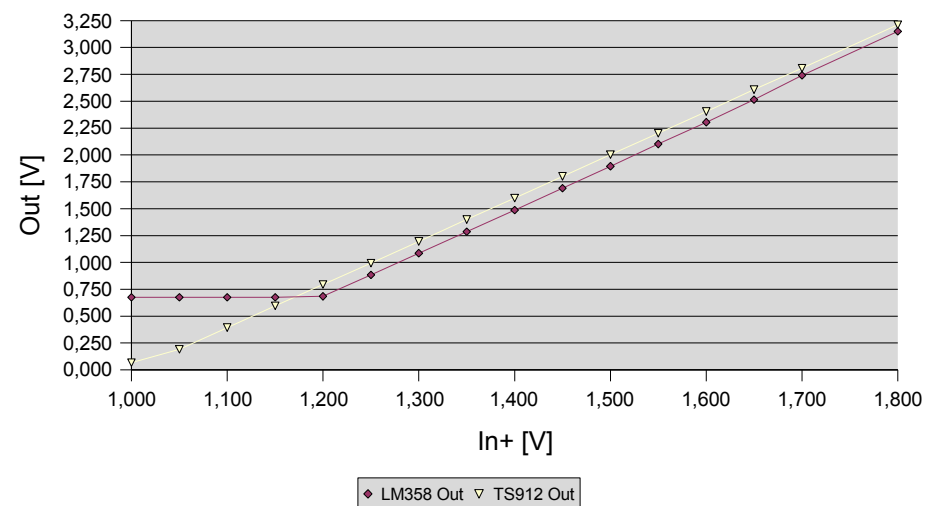
Differenz



In+ vs. In-



In+ vs. Out



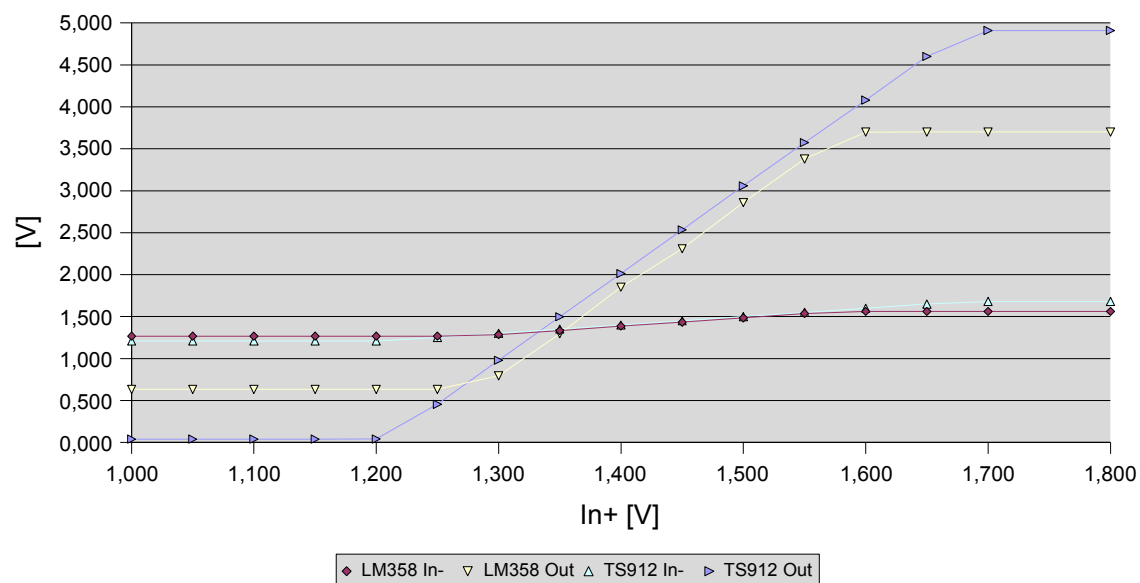
A=10,319

LM358

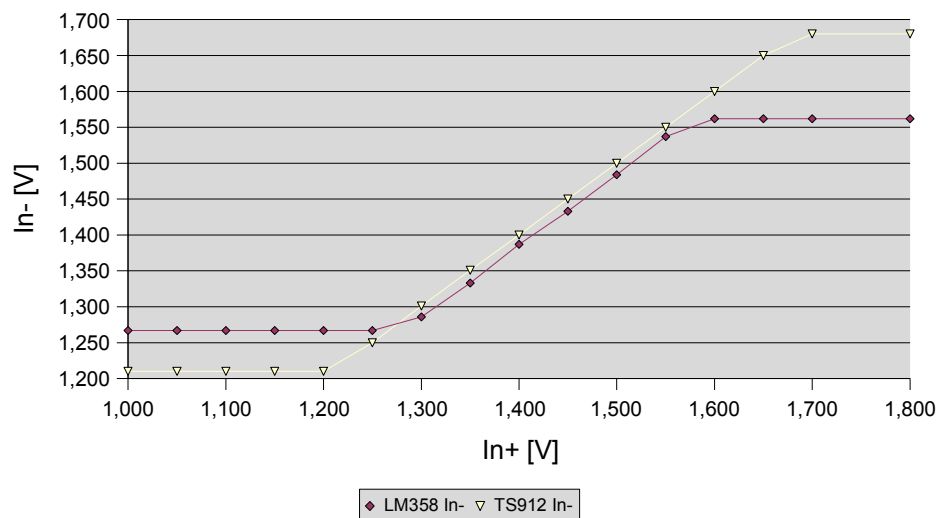
TS912

In+	LM358 In-	LM358 Out	TS912 In-	TS912 Out
1,000	1,267	0,632	1,210	0,040
1,050	1,267	0,632	1,210	0,040
1,100	1,267	0,632	1,210	0,040
1,150	1,267	0,632	1,210	0,040
1,200	1,267	0,632	1,210	0,041
1,250	1,267	0,632	1,250	0,454
1,300	1,286	0,794	1,301	0,980
1,350	1,333	1,295	1,351	1,498
1,400	1,387	1,851	1,400	2,013
1,450	1,433	2,309	1,450	2,534
1,500	1,484	2,858	1,500	3,057
1,550	1,537	3,378	1,550	3,573
1,600	1,562	3,699	1,600	4,080
1,650	1,562	3,700	1,650	4,600
1,700	1,562	3,700	1,680	4,910
1,800	1,562	3,700	1,680	4,910

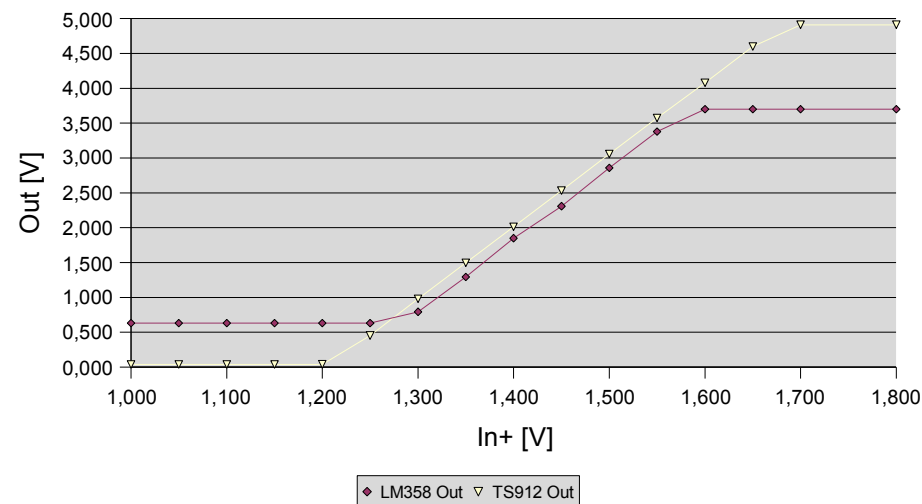
Differenz



In+ vs. In-



In+ vs. Out



Nichtinvertierend

Nichtinvertierender Verstärker

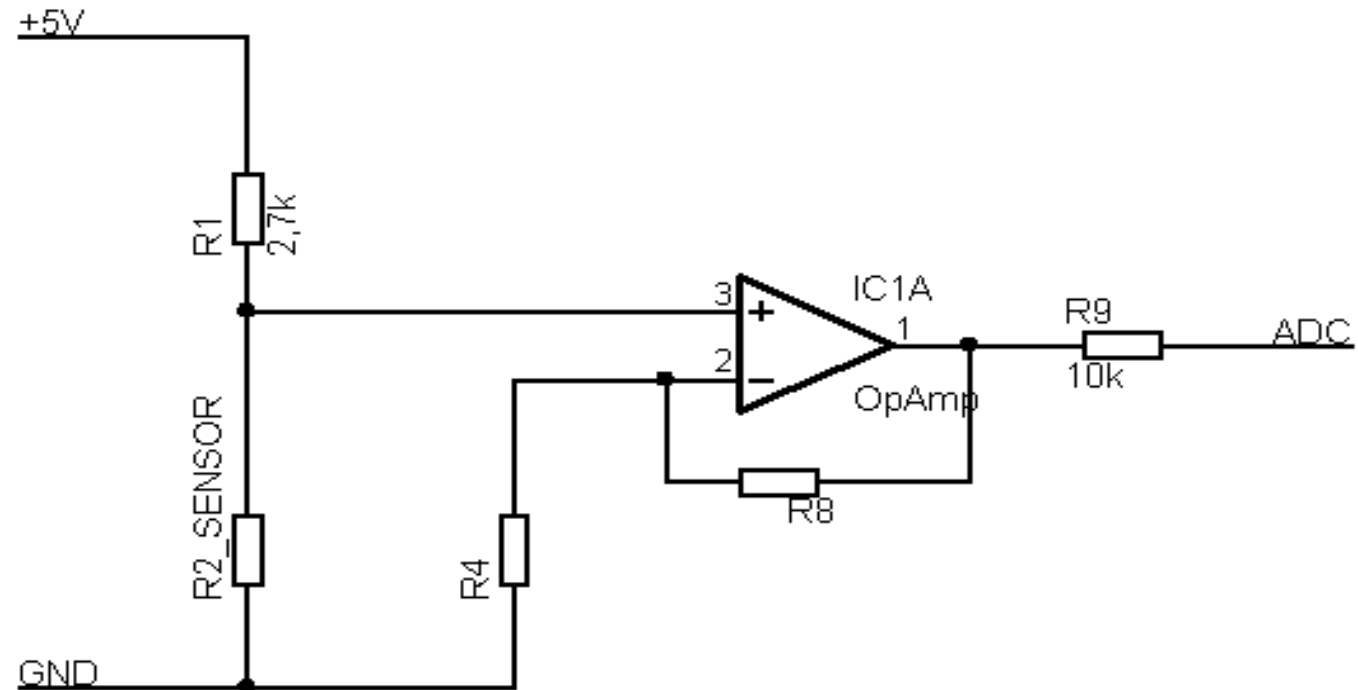
Verstärkung = $1 + R8/R4$

R4 [kΩ]	R8 [kΩ]	Verstärkung (A)
2,2	22	11,000
10	100	11,000

Messpunkte:

In+	OpAmp Eingangspin
In-	OpAmp Eingangspin
Out	OpAmp Ausgangspin
Masse	Am Netzteil

Einstellung von In+ durch
Veränderung von R2 (Poti)



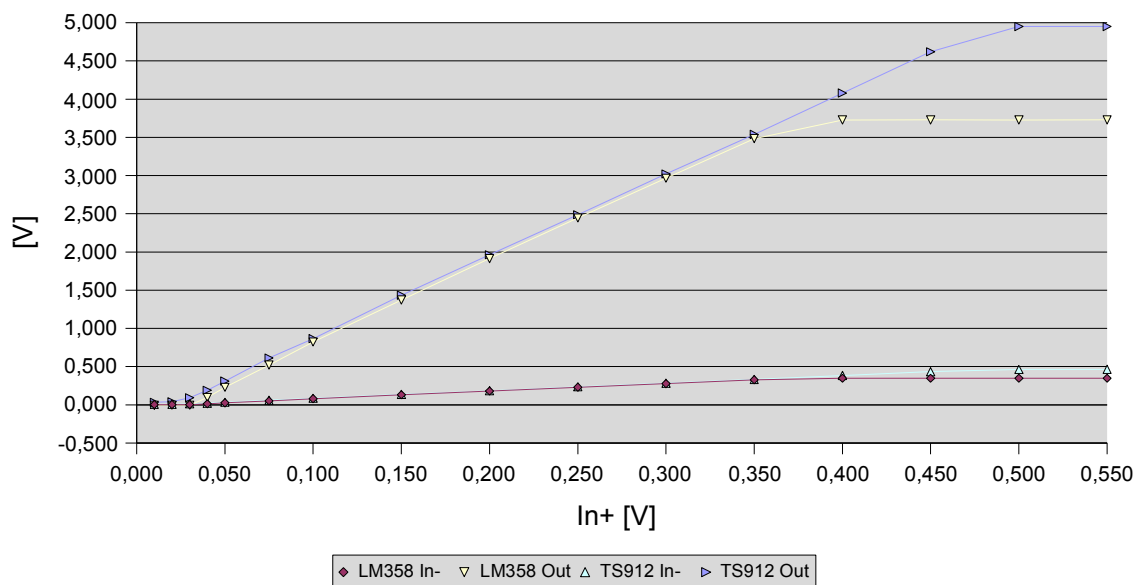
A=11, R4=2:

LM358

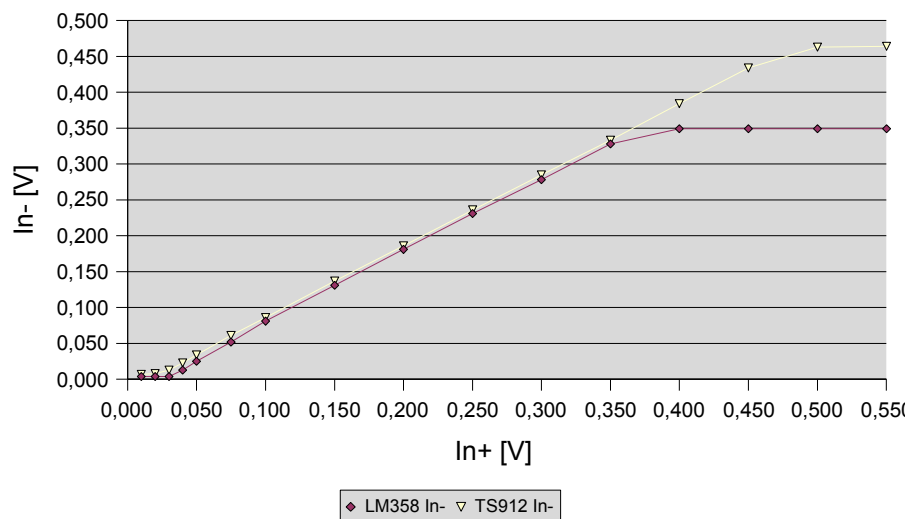
TS912

In+	LM358 In-	LM358 Out	TS912 In-	TS912 Out
0,010	0,004	-0,005	0,007	0,033
0,020	0,004	-0,004	0,008	0,041
0,030	0,004	-0,004	0,013	0,092
0,040	0,013	0,097	0,023	0,192
0,050	0,025	0,230	0,034	0,311
0,075	0,052	0,521	0,061	0,613
0,100	0,081	0,823	0,086	0,866
0,150	0,131	1,372	0,137	1,434
0,200	0,181	1,914	0,186	1,963
0,250	0,231	2,445	0,236	2,487
0,300	0,278	2,966	0,285	3,021
0,350	0,328	3,483	0,333	3,539
0,400	0,349	3,727	0,384	4,080
0,450	0,349	3,728	0,434	4,620
0,500	0,349	3,727	0,463	4,950
0,550	0,349	3,728	0,464	4,950

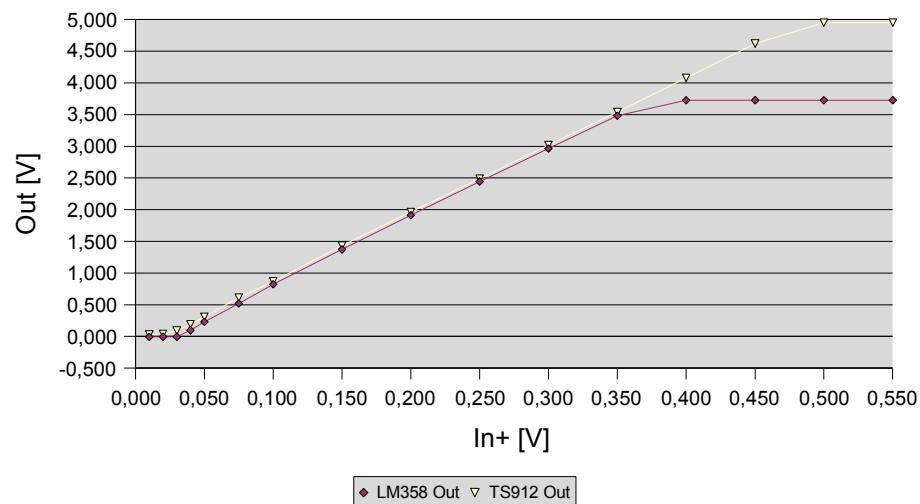
Nichtinvertierend



In+ vs. In-



In+ vs. Out



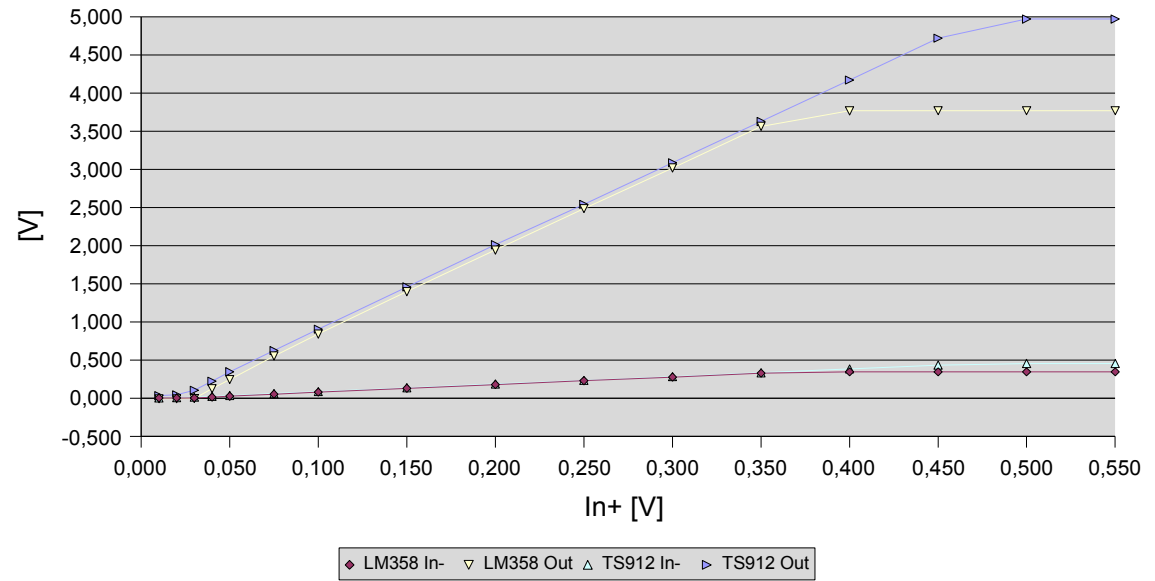
$\lambda=11$, $R_4=1C$

LM358

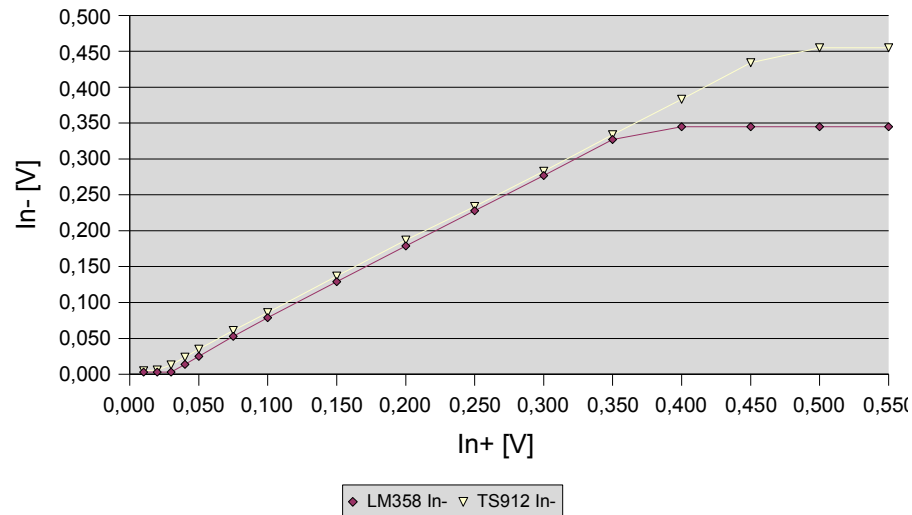
TS912

In+	LM358 In-	LM358 Out	TS912 In-	TS912 Out
0,010	0,003	-0,008	0,005	0,032
0,020	0,003	-0,007	0,006	0,045
0,030	0,003	-0,005	0,013	0,104
0,040	0,014	0,124	0,024	0,222
0,050	0,025	0,244	0,035	0,347
0,075	0,053	0,552	0,061	0,625
0,100	0,079	0,840	0,086	0,905
0,150	0,129	1,397	0,137	1,458
0,200	0,179	1,942	0,187	2,012
0,250	0,228	2,485	0,234	2,542
0,300	0,277	3,017	0,283	3,086
0,350	0,327	3,563	0,334	3,627
0,400	0,345	3,767	0,383	4,170
0,450	0,345	3,768	0,434	4,720
0,500	0,345	3,769	0,455	4,970
0,550	0,345	3,769	0,455	4,970

Nichtinvertierend



In+ vs. In-



In+ vs. Out

