NTC Resistor

Constans:	
B-Constant	3977
R at 25°C	10000

Formulars:

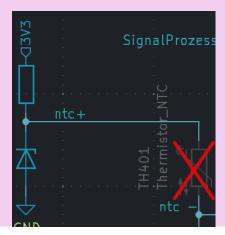
$R_{ m T}=R_{ m N}\cdot$ e	$B\left(\frac{1}{T} - \frac{1}{T_{\rm N}}\right)$

0 °C + 273,15 = 273,15 K

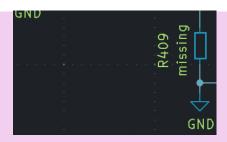
Resistance				
33900,4209				
26093,9205				
20271,5946				
15886,9982				
12554,7025				
10000				
8025,14518				
6486,44088				
5278,52005				
4323,45404				
3563,13194				
2953,87922				
2462,62387				
2064,14174				
1739,0614				
1252,5298				
684,938723				
194,411188				
72,0085807				
32,2475864				
16,6142994				

Voltage Divider

Constants:	
VCC (ntc+)	3,00
R9	5100



Temperature	Voltage
0	0,39230346
5	0,49048019
10	0,6030366
15	0,72902279
20	0,86662463
25	1,01324503
30	1,16570139
35	1,32050905
40	1,47419863
45	1,62360849
50	1,76610493
55	1,89970567
60	2,02310736
65	2,13563614
70	2,23714909



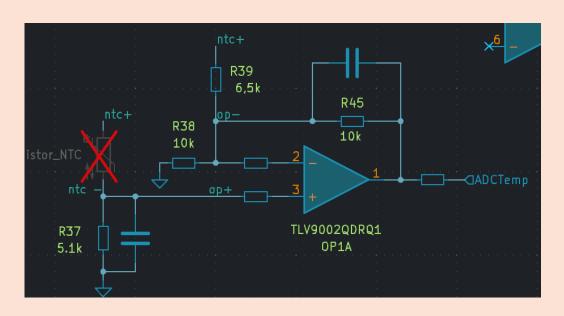
80	2,40848929
100	2,64479897
150	2,88983977
200	2,95823175
250	2,98115002
300	2,99025862

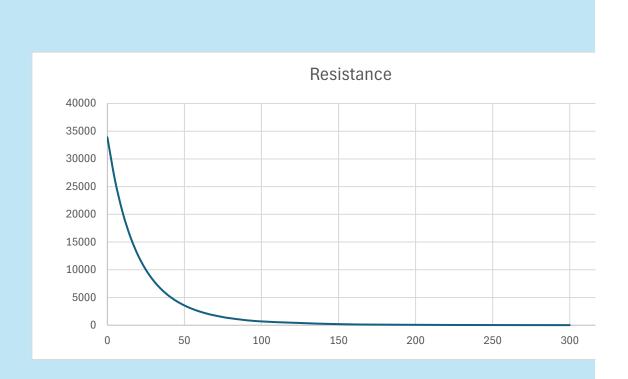
Signal Prozessing

Constans	
Gain	2
Voff	0,4
VCCoff (ntc+)	3
R1	5100
R2	10000
ADC Resul [bit]	12
ADC Vref	3

Vairables	
R3	65000
R4	10000

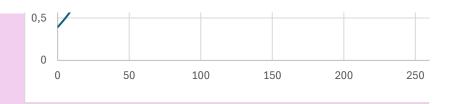
$$V_{out} = \left(1 + \frac{R_4}{R_2}\right) \left(\frac{v_{dd}}{1 + \frac{R_{ntc}}{R_1}} - \frac{V_{cc}}{1 + \frac{R_3}{R_2}}\right)$$





Imax [mA]	0,58632522
I at 30°C [mA]	0,2285689
d(mV)/dT at 30°C	30,7264014
mV/ADCstep	0,73242188
min Tres at 30°C	0,02383689





Temperature Voltage 0 -0,0153931 5 0,18096038 10 0,40607319 15 0,65804558 20 0,93324925 25 1,22649007 30 1,53140278 35 1,84101809 40 2,14839725 45 2,44721698 50 2,73220985 55 2,99941133 60 3,24621472 65 3,47127227 70 3,67429818 80 4,01697859 100 4,48959795 150 4,97967954 200 5,1164635 250 5,16230004 300 5,18051723		
5 0,18096038 10 0,40607319 15 0,65804558 20 0,93324925 25 1,22649007 30 1,53140278 35 1,84101809 40 2,14839725 45 2,44721698 50 2,73220985 55 2,99941133 60 3,24621472 65 3,47127227 70 3,67429818 80 4,01697859 100 4,48959795 150 4,97967954 200 5,1164635 250 5,16230004	Temperature	Voltage
10 0,40607319 15 0,65804558 20 0,93324925 25 1,22649007 30 1,53140278 35 1,84101809 40 2,14839725 45 2,44721698 50 2,73220985 55 2,99941133 60 3,24621472 65 3,47127227 70 3,67429818 80 4,01697859 100 4,48959795 150 4,97967954 200 5,1164635 250 5,16230004	0	-0,0153931
15 0,65804558 20 0,93324925 25 1,22649007 30 1,53140278 35 1,84101809 40 2,14839725 45 2,44721698 50 2,73220985 55 2,99941133 60 3,24621472 65 3,47127227 70 3,67429818 80 4,01697859 100 4,48959795 150 4,97967954 200 5,1164635 250 5,16230004	5	0,18096038
20 0,93324925 25 1,22649007 30 1,53140278 35 1,84101809 40 2,14839725 45 2,44721698 50 2,73220985 55 2,99941133 60 3,24621472 65 3,47127227 70 3,67429818 80 4,01697859 100 4,48959795 150 4,97967954 200 5,1164635 250 5,16230004	10	0,40607319
25 1,22649007 30 1,53140278 35 1,84101809 40 2,14839725 45 2,44721698 50 2,73220985 55 2,99941133 60 3,24621472 65 3,47127227 70 3,67429818 80 4,01697859 100 4,48959795 150 4,97967954 200 5,1164635 250 5,16230004	15	0,65804558
30 1,53140278 35 1,84101809 40 2,14839725 45 2,44721698 50 2,73220985 55 2,99941133 60 3,24621472 65 3,47127227 70 3,67429818 80 4,01697859 100 4,48959795 150 4,97967954 200 5,1164635 250 5,16230004	20	0,93324925
35 1,84101809 40 2,14839725 45 2,44721698 50 2,73220985 55 2,99941133 60 3,24621472 65 3,47127227 70 3,67429818 80 4,01697859 100 4,48959795 150 4,97967954 200 5,1164635 250 5,16230004	25	1,22649007
40 2,14839725 45 2,44721698 50 2,73220985 55 2,99941133 60 3,24621472 65 3,47127227 70 3,67429818 80 4,01697859 100 4,48959795 150 4,97967954 200 5,1164635 250 5,16230004	30	1,53140278
45 2,44721698 50 2,73220985 55 2,99941133 60 3,24621472 65 3,47127227 70 3,67429818 80 4,01697859 100 4,48959795 150 4,97967954 200 5,1164635 250 5,16230004	35	1,84101809
50 2,73220985 55 2,99941133 60 3,24621472 65 3,47127227 70 3,67429818 80 4,01697859 100 4,48959795 150 4,97967954 200 5,1164635 250 5,16230004	40	2,14839725
55 2,99941133 60 3,24621472 65 3,47127227 70 3,67429818 80 4,01697859 100 4,48959795 150 4,97967954 200 5,1164635 250 5,16230004	45	2,44721698
60 3,24621472 65 3,47127227 70 3,67429818 80 4,01697859 100 4,48959795 150 4,97967954 200 5,1164635 250 5,16230004	50	2,73220985
65 3,47127227 70 3,67429818 80 4,01697859 100 4,48959795 150 4,97967954 200 5,1164635 250 5,16230004	55	2,99941133
70 3,67429818 80 4,01697859 100 4,48959795 150 4,97967954 200 5,1164635 250 5,16230004	60	3,24621472
80 4,01697859 100 4,48959795 150 4,97967954 200 5,1164635 250 5,16230004	65	3,47127227
100 4,48959795 150 4,97967954 200 5,1164635 250 5,16230004	70	3,67429818
150 4,97967954 200 5,1164635 250 5,16230004	80	4,01697859
200 5,1164635 250 5,16230004	100	4,48959795
250 5,16230004	150	4,97967954
-	200	5,1164635
300 5,18051723	250	5,16230004
	300	5,18051723

Imax	0	mA
I at 30°C	0	mA
d(mV)/dT at 30°C	61,4528027	mV/°C
mV/ADCstep	0,73242188	mV
minTempResoltion at 30°C	0,01191845	°C

