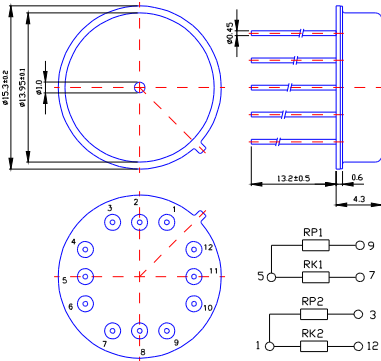


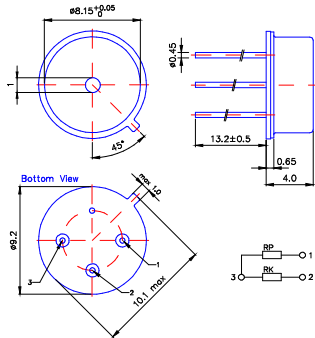
HVS Series

MEMS Type Pirani Vacuum Sensor

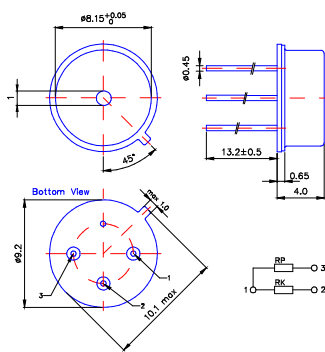
HVS Vac03g+04 in TO8



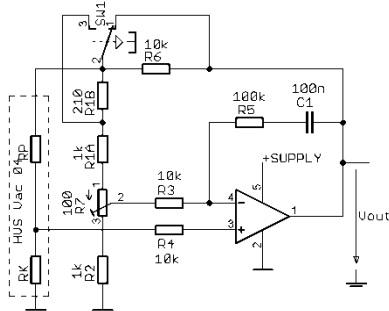
HVS Vac03k in TO39



HVS Vac04 in TO39



proposal: constant resistance ratio circuit



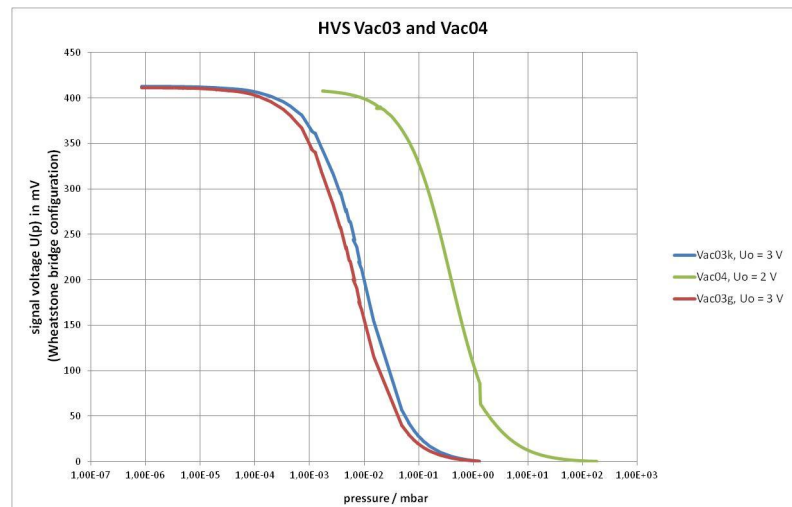
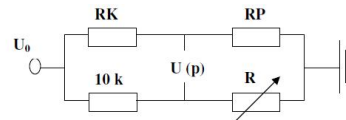
The Heimmann vacuum sensor HVS is a miniature Pirani-type sensor based on a heated resistor structure on a thin micromachined membrane. The sensor comes in a small, robust, TO type metal housing.

Parameter	HVS Vac03g	HVS Vac03k	HVS Vac04	Unit
housing	TO8	TO39	TO39 (single) TO8 (dual)	
chip size	5.2 x 5.2	4.0 x 4.0	1.2 x 1.2	mm ²
sensor resistor R_P (typ.)	8.5	8.5	1	kOhm
on chip reference resistor R_K (typ.)	8.5	8.5	1	kOhm
max. supply voltage U_0	3.5	3.2	4 (1..1000 mbar) 2 (p < 1 mbar)	Volt
operating temperature		-20..120		°C
storage temperature		-40..120		°C

The sensor types HVS Vac03g and HVS Vac03k show a response $U(p)$ typically ranging from 0 – 400 mV in the pressure range 1 mbar - 10^{-5} mbar. HVS Vac 04 can be used in the 1 - 1000 mbar range.

Two chips, Vac 03g together with Vac04, can be mounted in the same TO8 housing to make the HVS dual chip model. This allows for a wider measurement range by switching from Vac03g to Vac04.

One possible read-out is a Wheatstone bridge arrangement. The measuring resistor R_P and one of the compensation resistors R_K will form one side of the bridge. The voltage $U(p)$ should be balanced (output = zero) by adjusting the variable resistor R (e.g. 8 - 10 kOhm) at 1013 mbar.



Modifications reserved Rev.12 19.04.2017