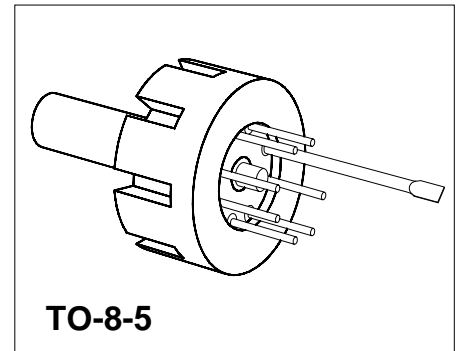


## Silicon Piezoresistive Absolute Pressure Sensor

KPY 52-AK  
KPY 56-AK

### Features

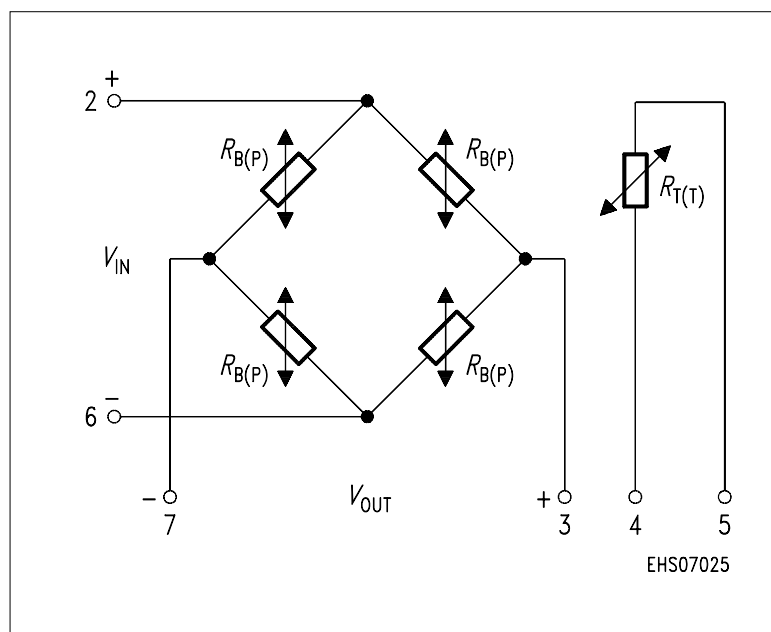
- Low pressure and temperature hysteresis
- Fast response
- High sensitivity and linearity
- Fatigue free monocrystalline silicon diaphragm giving high load cycle stability
- High long term stability
- Built in silicon temperature sensor
- Provided for further fabrication, protection cap



Type and Marking	Symbol	Pressure Range	Unit	Ordering Code
KPY 52 AK	$P_0 \dots P_N$	0 ... 0.6	bar	Q62705-K205
KPY 53 AK		0 ... 1.6		Q62705-K192
KPY 54 AK		0 ... 4		Q62705-K194
KPY 55 AK		0 ... 10		Q62705-K196
KPY 56 AK		0 ... 25		Q62705-K198

### Pin Configuration

1	Capillary tube
2	+ $V_{IN}$
3	- $V_{OUT}$
4	Temperature sensor (typ. $R_{25} = 2 \text{ k}\Omega$ )
5	Temperature sensor
6	- $V_{IN}$
7	+ $V_{OUT}$
8	Not connected



## Absolute Maximum Ratings

Parameter	Symbol	Limit Values	Unit
Pressure overload	$P_{MAX}$		bar
KPY 52 AK		6	
KPY 53 AK		10	
KPY 54 AK		16	
KPY 55 AK		30	
KPY 56 AK		75	
Operating temperature range	$T_A$	- 40 ... + 125	°C
Storage temperature range	$T_{stg}$	- 50 ... + 150	°C
Supply voltage	$V_{IN}$	12	V

## Electrical Characteristics

at  $T_A = 25$  °C and  $V_{IN} = 5$  V, unless otherwise specified.

Parameter	Symbol	Limit Values			Unit
		min.	typ.	max.	
Bridge resistance	$R_B$	4	–	8	kΩ
Sensitivity	$s$				mV/ Vbar
KPY 52 AK		11.0	15.0	24.0	
KPY 53 AK		5.6	8.8	12.5	
KPY 54 AK		4.0	6.0	9.0	
KPY 55 AK		1.8	2.6	4.0	
KPY 56 AK		0.88	1.2	2.0	
Output voltage	$V_{fin}$				mV
KPY 52 AK		33	45	72	
KPY 53 AK		45	70	100	
KPY 54 AK		80	120	180	
KPY 55 AK		90	130	200	
KPY 56 AK		110	150	250	
Offset voltage $P = P_0$	$V_0$	- 25	–	+ 25	mV
Linearity error (Best fit straight line) $P_0 = P_0 \dots P_N$	$F_L$				% $V_{fin}$
KPY 52 ... 55 AK		–	± 0.15	± 0.35	
KPY 56 AK		–	± 0.15	–	
Pressure hysteresis $P_1 = P_0, P_2 = P_N, P_3 = P_0$	$P_H$				% $V_{fin}$
KPY 52 ... 56 AK		–	± 0.1	–	

## Electrical Characteristics

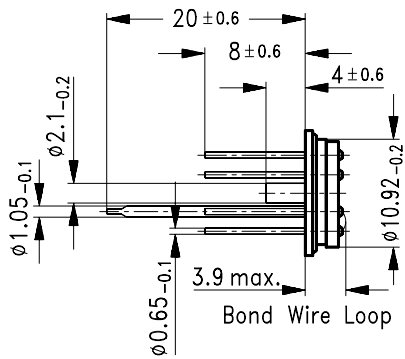
at  $T_1 = 25\text{ °C}$ ,  $T_2 = 125\text{ °C}$ ,  $T_3 = 25\text{ °C}$  and  $V_{IN} = 5\text{ V}$ , unless otherwise specified.

Parameter	Symbol	Limit Values			Unit
		min.	typ.	max.	
Temperature coefficient of $V_{fin}$	$TC_{V_{fin}}$				%/K
KPY 52 AK		- 0.19	- 0.15	- 0.12	
KPY 53 AK		- 0.19	- 0.16	- 0.13	
KPY 54 AK		- 0.19	- 0.17	- 0.14	
KPY 55 AK		- 0.19	- 0.17	- 0.14	
KPY 56 AK		- 0.19	- 0.17	- 0.15	
Temperature coefficient of $V_0$	$TC_{V_0}$				%/K
KPY 52 AK		- 0.05	-	+ 0.05	
KPY 53 AK		- 0.03	-	+ 0.03	
KPY 54 AK		- 0.03	-	+ 0.03	
KPY 55 AK		- 0.03	-	+ 0.03	
KPY 56 AK		- 0.03	-	+ 0.03	
Temperature coefficient of $R_B$	$TC_{R_B}$				%/K
KPY 52 ... 56 AK		-	+ 0.095	-	
Temperature hysteresis of $V_0$ ; $V_{fin}$	$TH$				% v. $V_{fin}$
KPY 52 AK		- 0.5	-	+ 0.5	
KPY 53 ... 56 AK		- 0.3	-	+ 0.3	

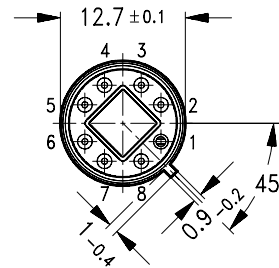
**Package Outline**

**TO-8-5**

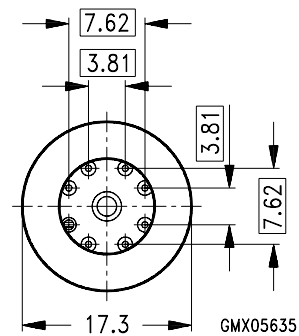
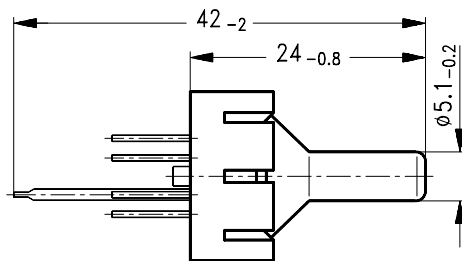
**Basic Component**



**View on Chip**



**Component Delivery Form**



Weight approx. 4.1 g

Dimension in mm

**Exterior Packaging**

I.e. tubes, trays, boxes are shown in our Data Book "Package Information".