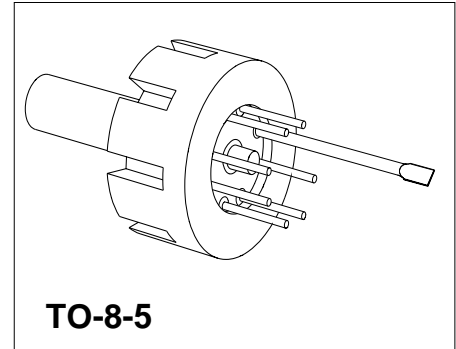


## Silicon Piezoresistive Absolute Pressure Sensor

**KPY 52-AK**  
**KPY 56-AK**

### Features

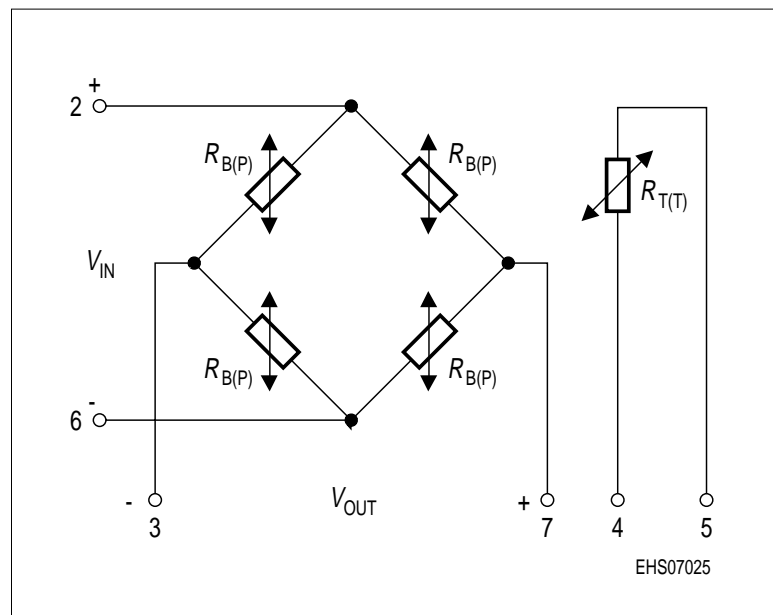
- Low pressure and temperature hysteresis
- Fast response
- High sensitivity and linearity
- Fatigue free monocrystalline silicon diaphragm giving high load cycle stability
- High long term stability
- Built in silicon temperature sensor
- Provided for further fabrication, protection cap



Type	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.

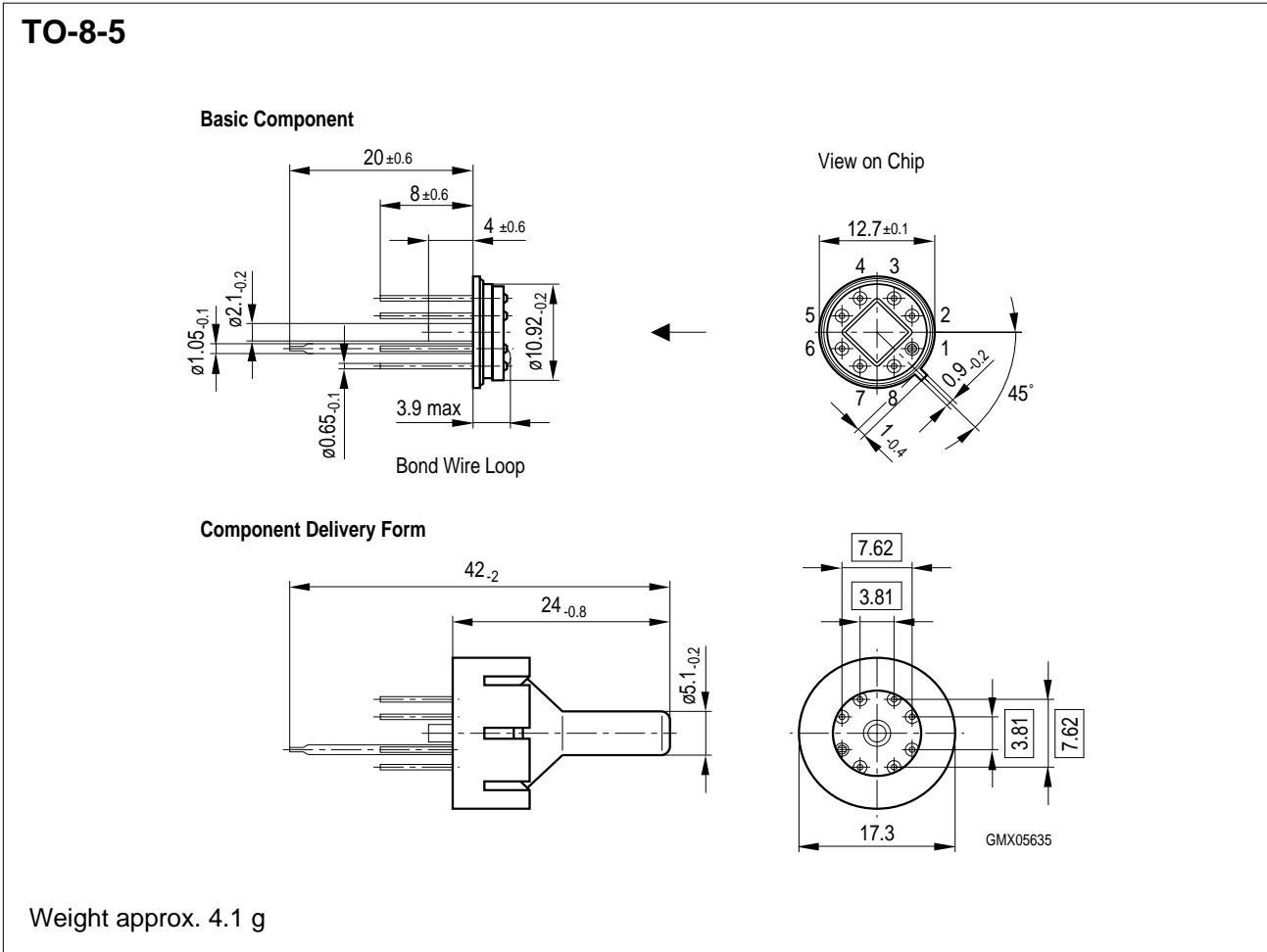
Parameter	Symbol	Limit Values			Unit
		min.	typ.	max.	
Bridge resistance	$R_B$	4	–	8	kΩ
Sensitivity	$s$				mV/ Vbar
KPY 52-AK		11.0	15.0	24.0	
KPY 53-AK		5.6	8.8	12.5	
KPY 54-AK		4.0	6.0	9.0	
KPY 55-AK		1.8	2.6	4.0	
KPY 56-AK		0.88	1.2	2.0	
Output voltage	$V_{fin}$				mV
KPY 52-AK		33	45	72	
KPY 53-AK		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 $P_1 = P_0, P_2 = P_N, P_3 = P_0$ KPY 52 ... 56-AK	$P_H$	–	± 0.1	–	% $V_{fin}$

### 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



**Sorts of Packing**

Package outlines for tubes, trays etc. are contained in our Data Book "Package Information".

Dimensions in mm