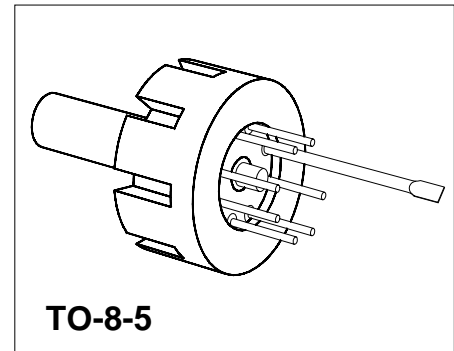


Silicon Piezoresistive Absolute Pressure Sensor

KPY 52-AK
KPY 56-AK

Features

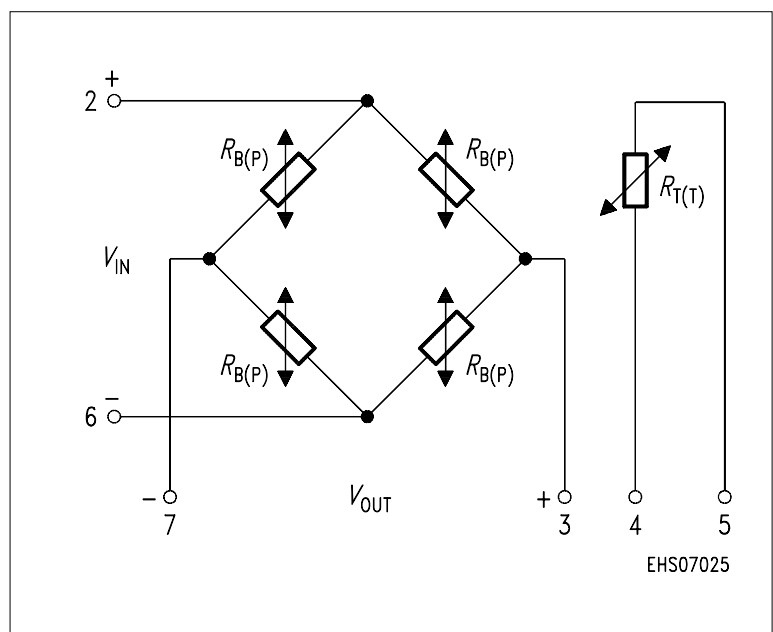
- Low pressure and temperature hysteresis
- Fast response
- High sensitivity and linearity
- Fatigue free monocrystalline silicon diaphragm giving high load cycle stability
- High long term stability
- Built in silicon temperature sensor
- Provided for further fabrication, protection cap



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}	6	bar
KPY 52 AK		10	
KPY 53 AK		16	
KPY 54 AK		30	
KPY 55 AK		75	
KPY 56 AK			
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	11.0	15.0	24.0	mV/ Vbar
KPY 52 AK		5.6	8.8	12.5	
KPY 53 AK		4.0	6.0	9.0	
KPY 54 AK		1.8	2.6	4.0	
KPY 55 AK		0.88	1.2	2.0	
KPY 56 AK					
Output voltage	V_{fin}	33	45	72	mV
KPY 52 AK		45	70	100	
KPY 53 AK		80	120	180	
KPY 54 AK		90	130	200	
KPY 55 AK		110	150	250	
KPY 56 AK					
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	–	± 0.15	± 0.35	% V_{fin}
KPY 52 ... 55 AK		–	± 0.15	–	
KPY 56 AK					
Pressure hysteresis $P_1 = P_0, P_2 = P_N, P_3 = P_0$	P_H	–	± 0.1	–	% V_{fin}
KPY 52 ... 56 AK					

Electrical Characteristics

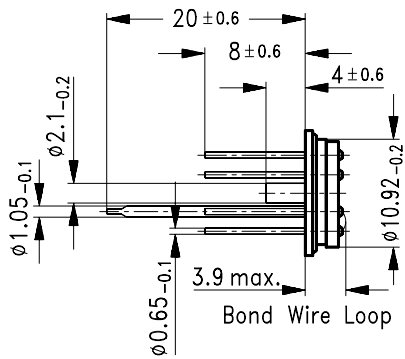
at $T_1 = 25\text{ °C}$, $T_2 = 125\text{ °C}$, $T_3 = 25\text{ °C}$ and $V_{IN} = 5\text{ V}$, unless otherwise specified.

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	

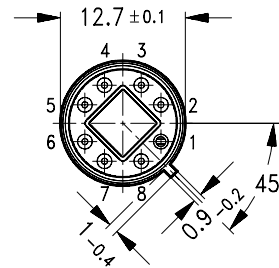
Package Outline

TO-8-5

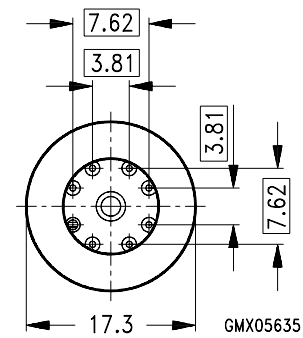
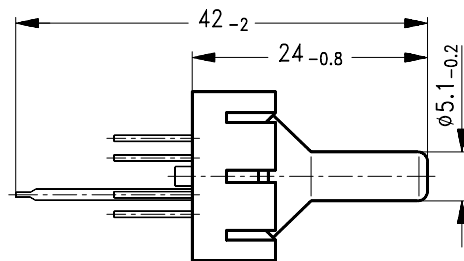
Basic Component



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".