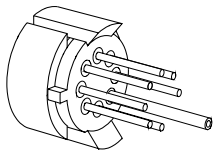
Silicon Piezoresistive Absolute Pressure Sensor

KPY 62-AK
KPY 69-AK

Features

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

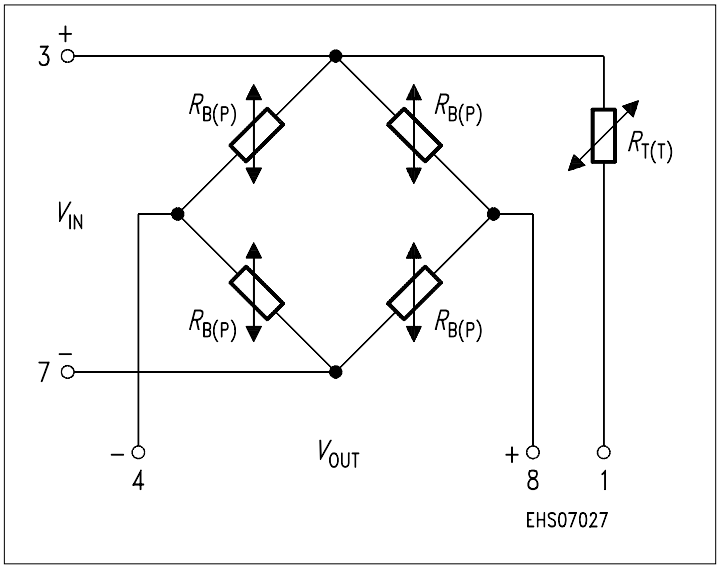


Similar to TO-39-2

Type	Symbol	Pressure Range	Unit	Ordering Code
KPY 62-AK	$P_0 \ldots P_N$	0 … 0.6	bar	Q62705-K275
KPY 63-AK		0 … 1.6		Q62705-K276
KPY 64-AK		0 … 4		Q62705-K277
KPY 65-AK		0 … 10		Q62705-K278
KPY 66-AK		0 … 25		Q62705-K279
KPY 67-AK		0 … 60		Q62705-K280
KPY 68-AK		0 … 160		Q62705-K281
KPY 69-AK		0 … 400		Q62705-K282

Pin Configuration

1	Temperature sensor (typ. R_{25} = 2 kΩ)
2	Not to be connected
3	+ V_{IN}; Temperature sensor
4	– V_{OUT}
5	Capillary tube
6	Shielding, to be connected to + V_{IN}
7	– V_{IN}
8	+ V_{OUT}



Absolute Maximum Ratings

Parameter	Symbol	Limit Values	Unit
Pressure overload	P_{MAX}		bar
KPY 62-AK		4	
KPY 63-AK		8	
KPY 64-AK		12	
KPY 65-AK		20	
KPY 66-AK		50	
KPY 67-AK		70	
KPY 68-AK		200	
KPY 69-AK		500	
Operating temperature range	T_A	– 40 … + 125	°C
Storage temperature range	T_{stg}	– 50 … + 125	°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/
KPY 62-AK		23.3	43.0	73.3	Vbar
KPY 63-AK		11.3	20.0	30.0	
KPY 64-AK		6.5	11.0	15.5	
KPY 65-AK		3.6	5.2	8.0	
KPY 66-AK		1.1	2.1	3.0	
KPY 67-AK		0.63	1.0	1.4	
KPY 68-AK		0.38	0.53	0.66	
KPY 69-AK		0.16	0.22	0.27	
Output voltage	V_{fin}				mV
KPY 62-AK		70	130	220	
KPY 63-AK		90	160	240	
KPY 64-AK		130	220	310	
KPY 65-AK		180	260	400	
KPY 66-AK		150	260	370	
KPY 67-AK		190	300	410	
KPY 68-AK		310	420	530	
KPY 69-AK		330	440	550	

Electrical Characteristics (cont'd)
at T_A = 25 °C and V_{IN} = 5 V, unless otherwise specified.

Parameter	Symbol	Limit Values			Unit
		min.	typ.	max.	
Offset voltage $P = P_0$	V_0	 – 25	 –	 + 25	mV
Linearity error (Best fit straight line) $P_0 = P_0 \ldots P_N$	F_L				% V_{fin}
KPY 62 … 65-AK		–	± 0.3	± 0.5	
KPY 66 … 69-AK		–	± 0.3	–	
Pressure hysteresis $P_1 = P_0$, $P_2 = P_N$, $P_3 = P_0$ KPY 62 … 69-AK	P_H	–	± 0.1	–	% V_{fin}

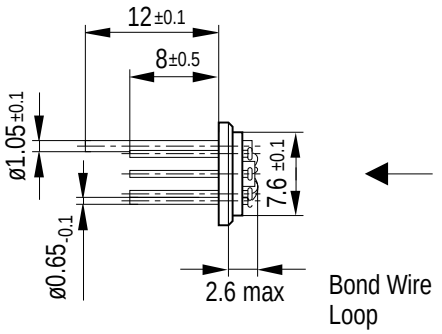
Electrical Characteristics
at T_1 = 25 °C, T_2 = 125 °C, T_3 = 25 °C and V_{IN} = 5 V, unless otherwise specified.

Parameter	Symbol	Limit Values			Unit
		min.	typ.	max.	
Temperature coefficient of V_{fin}	TC_{Vfin}				%/K
KPY 62 … 69-AK		– 0.22	– 0.18	– 0.15	
Temperature coefficient of V_0	TC_{V0}				%/K
KPY 62-AK		– 0.04	–	+ 0.04	
KPY 63-AK		– 0.04	–	+ 0.04	
KPY 64-AK		– 0.02	–	+ 0.02	
KPY 65-AK		– 0.02	–	+ 0.02	
KPY 66-AK		– 0.02	–	+ 0.02	
KPY 67-AK		– 0.01	–	+ 0.01	
KPY 68-AK		– 0.01	–	+ 0.01	
KPY 69-AK		– 0.01	–	+ 0.01	
Temperature coefficient of R_B	TC_{RB}				%/K
KPY 62 … 69-AK		–	+ 0.23	–	
Temperature hysteresis of V_0; V_{fin}	TH				% v. V_{fin}
KPY 62 … 66-AK		–	± 0.2	–	
KPY 67 … 69-AK		–	– 0.1	–	

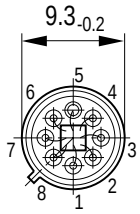
Package Outline

Similar to TO-39-2

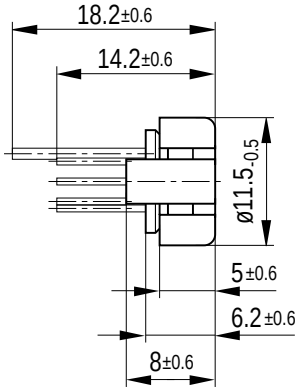
Basic Component

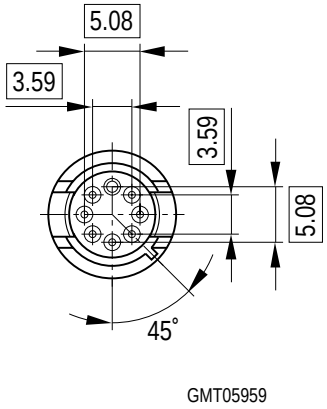


View on Chip



Component Delivery Form





Weight approx. 1.5 g

Sorts of Packing

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

Dimensions in mm