SIEMENS

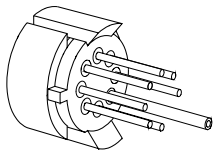
Silicon Piezoresistive Absolute Pressure Sensor

KPY 62-AK
KPY 69-AK

Preliminary Data

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

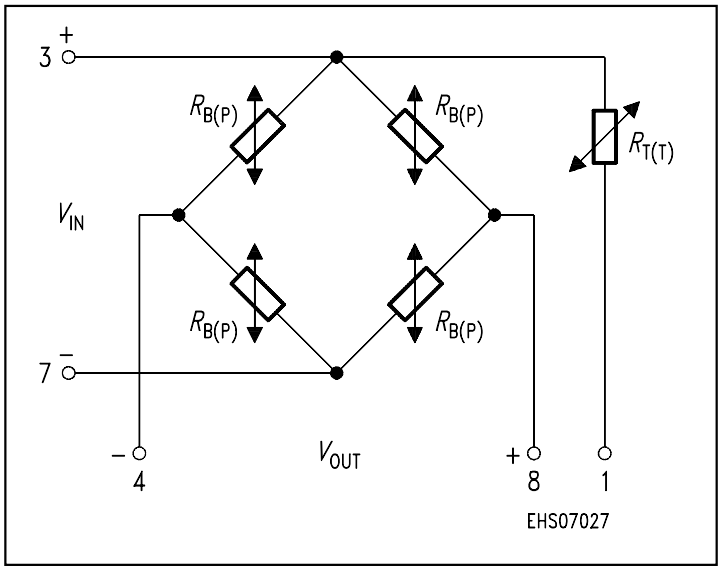


Similar to TO-39-2

Type and Marking	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 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}

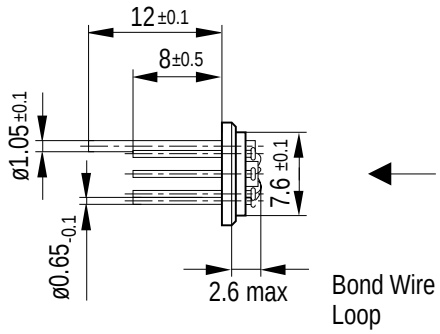
Electrical Characteristics
at T_1 = 25 ˚C, T_2 = 125 ˚C, T_3 = 25 ˚C and V_{IN} = 5 V, unless otherwise specified.

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	–	

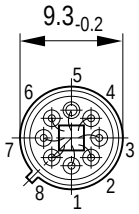
Package Outline

Similar to TO-39-2

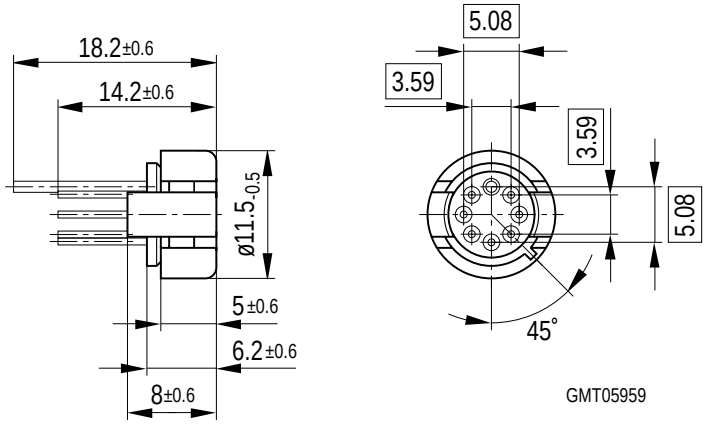
Basic Component



View on Chip



Component Delivery Form



Weight approx. 1.5 g

Dimensions in mm

Exterior Packaging

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