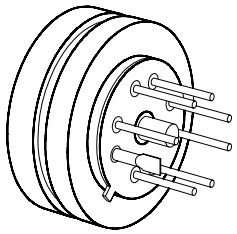
SIEMENS

Silicon Piezoresistive Absolute Pressure Sensor

KPY 52-A
KPY 56-A

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
- Media compatible stainless steel housing

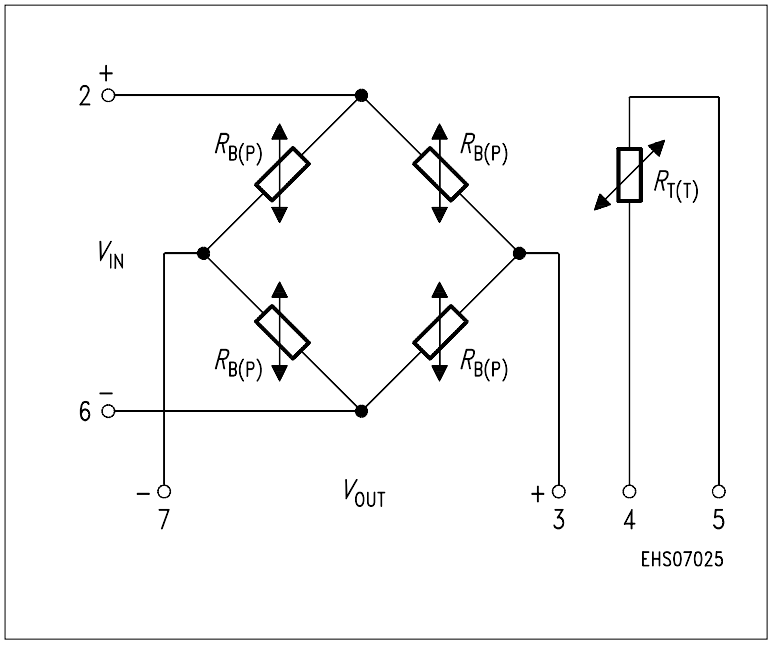


Stainless Steel Package

Type and Marking	Symbol	Pressure Range	Unit	Ordering Code
KPY 52 A	$P_0 \ldots P_N$	0 … 0.6	bar	Q62705-K211
KPY 53 A		0 … 1.6		Q62705-K177
KPY 54 A		0 … 4		Q62705-K179
KPY 55 A		0 … 10		Q62705-K181
KPY 56 A		0 … 25		Q62705-K183

Pin Configuration

1	Capillary tube
2	+ V_{IN}
3	– V_{OUT}
4	Temperature sensor (typ. R_{25} = 2 kΩ)
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 A		2	
KPY 53 A		6	
KPY 54 A		10	
KPY 55 A		16	
KPY 56 A		30	
Operating temperature range	T_A	– 40 … + 125	˚C
Storage temperature range	T_{stg}	– 50 … + 130	˚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 52 A		11.0	15.0	24.0	Vbar
KPY 53 A		5.6	8.8	12.5	
KPY 54 A		4.0	6.0	9.0	
KPY 55 A		1.8	2.6	4.0	
KPY 56 A		0.88	1.2	2.0	
Output voltage	V_{fin}				mV
KPY 52 A		33	45	72	
KPY 53 A		45	70	100	
KPY 54 A		80	120	180	
KPY 55 A		90	130	200	
KPY 56 A		110	150	250	
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 52… 55 A		–	± 0.15	± 0.35	
KPY 56A		–	± 0.15	–	
Pressure hysteresis $P_1 = P_0$, $P_2 = P_N$, $P_3 = P_0$ KPY 52 … 56 A	P_H	–	± 0.1	–	% V_{fin}

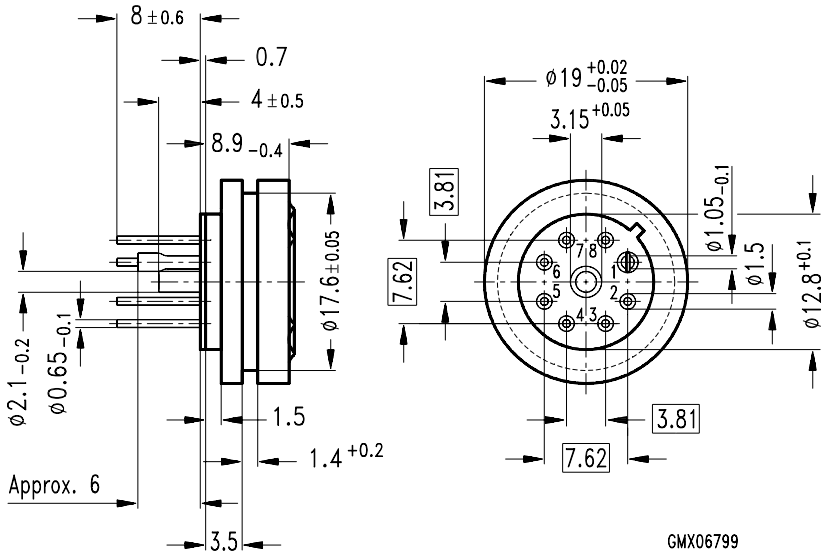
Electrical Characteristics

at T_1 = 25 ˚C, T_2 = 80 ˚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 52 A		– 0.20	–	– 0.12	
KPY 53 A		– 0.20	–	– 0.13	
KPY 54 A		– 0.20	–	– 0.14	
KPY 55 A		– 0.20	–	– 0.15	
KPY 56 A		– 0.20	–	– 0.15	
Temperature coefficient of V_0	TC_{V0}				%/K
KPY 52 A		– 0.03	–	+ 0.08	
KPY 53 A		– 0.03	–	+ 0.05	
KPY 54 A		– 0.03	–	+ 0.05	
KPY 55 A		– 0.03	–	+ 0.05	
KPY 56 A		– 0.03	–	+ 0.05	
Temperature coefficient of R_B	TC_{RB}				%/K
KPY 52 … 56 A		–	+ 0.095	–	
Temperature hysteresis of V_0; V_{fin}	TH				% v. V_{fin}
KPY 52 … 56 A		–	± 0.2	–	

Package Outline

Stainless Steel Package



Weight approx. 15.0 g

Dimension in mm

Exterior Packaging

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