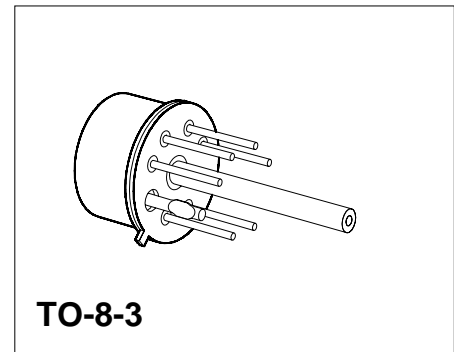


## Silicon Piezoresistive Absolute Pressure Sensor

KPY 42-A  
KPY 46-A

### Features

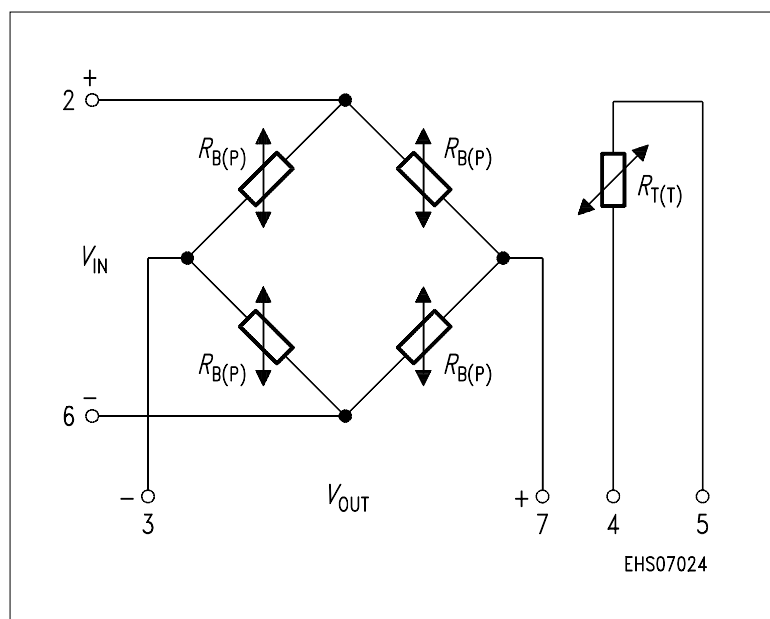
- Low pressure and temperature hysteresis
- Fast response
- High sensitivity and linearity
- Fatigue free monocrystalline silicon diaphragm giving high load cycle stability
- High long term stability
- Pressure coupled to rearside of silicon diaphragm
- Built in silicon temperature sensor



Type and Marking	Symbol	Pressure Range	Unit	Ordering Code
KPY 42 A	$P_0 \dots P_N$	0 ... 0.6	bar	Q62705-K204
KPY 43 A		0 ... 1.6		Q62705-K162
KPY 44 A		0 ... 4		Q62705-K164
KPY 45 A		0 ... 10		Q62705-K166
KPY 46 A		0 ... 25		Q62705-K168

### 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 KPY 42 A KPY 43 A KPY 44 A KPY 45 A KPY 46 A	$P_{MAX}$	6 10 16 30 40	bar
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  $T_A = 25\text{ °C}$  and  $V_{IN} = 5\text{ V}$ , unless otherwise specified.

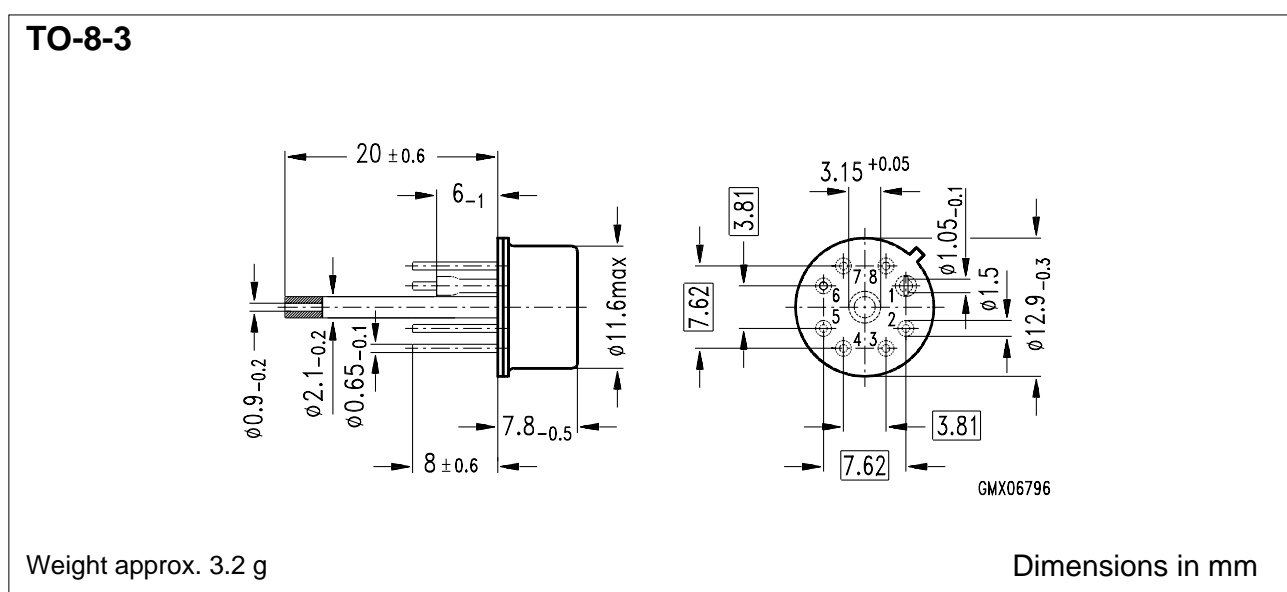
Parameter	Symbol	Limit Values			Unit
		min.	typ.	max.	
Bridge resistance	$R_B$	4	–	8	kΩ
Sensitivity KPY 42 A KPY 43 A KPY 44 A KPY 45 A KPY 46 A	$s$	11.0 5.6 4.0 1.8	15.0 8.8 6.0 2.6	24.0 12.5 9.0 4.0	mV/ Vbar
Output voltage KPY 42 A KPY 43 A KPY 44 A KPY 45 A KPY 46 A	$V_{fin}$	33 45 80 90 110	45 70 120 130 150	72 100 180 200 250	mV
Offset voltage $P = P_0$	$V_0$	- 25	–	+ 25	mV
Linearity error (Best fit straight line) $P_0 = P_0 \dots P_N$ KPY 42 ... 46 A KPY 46 A	$F_L$	–	± 0.15 ± 0.15	± 0.35 –	% $V_{fin}$
Pressure hysteresis $P_1 = P_0, P_2 = P_N, P_3 = P_0$ KPY 42 ... 46 A	$P_H$	–	± 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 42 A		- 0.19	- 0.15	- 0.12	
KPY 43 A		- 0.19	- 0.16	- 0.13	
KPY 44 A		- 0.19	- 0.17	- 0.14	
KPY 45 A		- 0.19	- 0.17	- 0.14	
KPY 46 A		- 0.19	- 0.17	- 0.15	
Temperature coefficient of $V_0$	$TC_{V_0}$				%/K
KPY 42 A		- 0.05	-	+ 0.05	
KPY 43 A		- 0.03	-	+ 0.03	
KPY 44 A		- 0.03	-	+ 0.03	
KPY 45 A		- 0.03	-	+ 0.03	
KPY 46 A		- 0.03	-	+ 0.03	
Temperature coefficient of $R_B$	$TC_{R_B}$				%/K
KPY 42 ... 46 A		-	+ 0.095	-	
Temperature coefficient of $V_0$ ; $V_{fin}$	$TH$				% v. $V_{fin}$
KPY 42 A		- 0.5	-	+ 0.5	
KPY 43 ... 46 A		- 0.3	-	+ 0.3	

## Package Outline



## Exterior Packaging

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