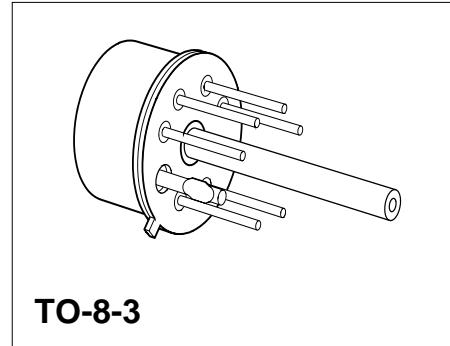


Silicon Piezoresistive Absolute Pressure Sensor

KPY 42-A
KPY 46-A

Features

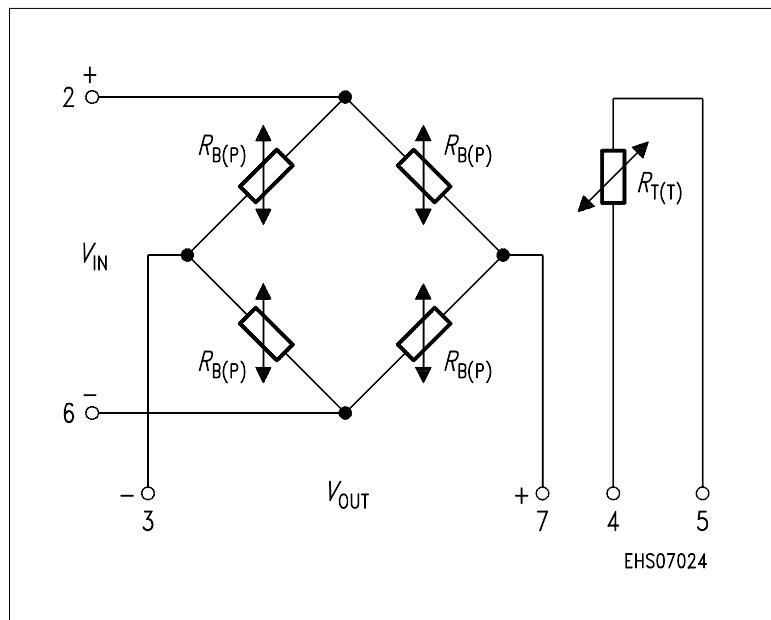
- Low pressure and temperature hysteresis
- Fast response
- High sensitivity and linearity
- Fatigue free monocrystalline silicon diaphragm giving high load cycle stability
- High long term stability
- Pressure coupled to rearside of silicon diaphragm
- Built in silicon temperature sensor



Type	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	P_{MAX}	6		bar
KPY 42-A		10		
KPY 43-A		16		
KPY 44-A		30		
KPY 45-A		40		
KPY 46-A				
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 $V_{\text{IN}} = 5$ V, unless otherwise specified.

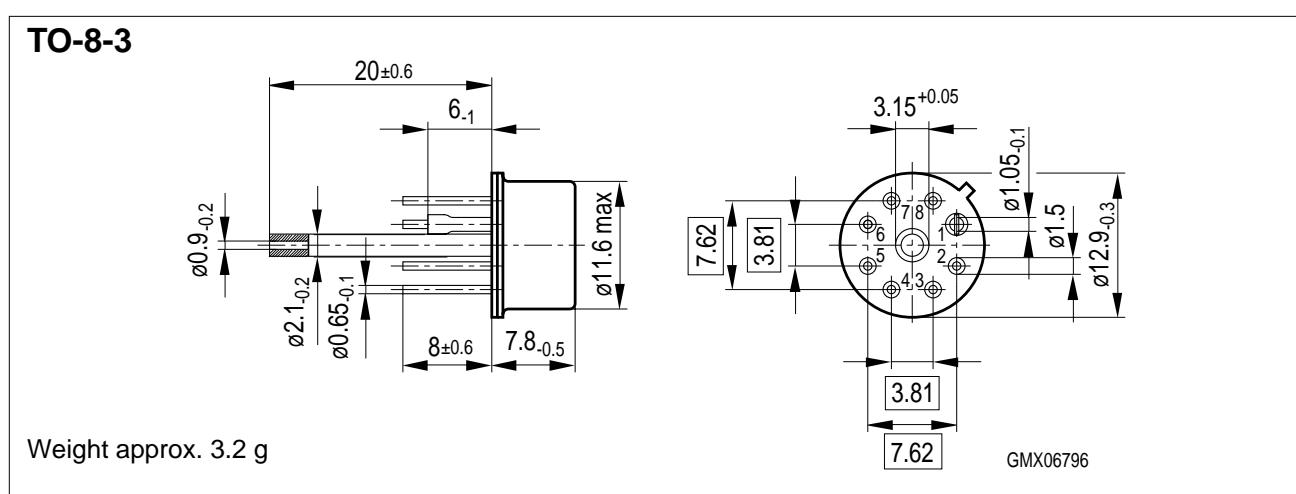
Parameter	Symbol	Limit Values			Unit
		min.	typ.	max.	
Bridge resistance	R_B	4	–	8	kΩ
Sensitivity	s				mV/Vbar
KPY 42-A		11.0	15.0	24.0	
KPY 43-A		5.6	8.8	12.5	
KPY 44-A		4.0	6.0	9.0	
KPY 45-A		1.8	2.6	4.0	
KPY 46-A					
Output voltage	V_{fin}				mV
KPY 42-A		33	45	72	
KPY 43-A		45	70	100	
KPY 44-A		80	120	180	
KPY 45-A		90	130	200	
KPY 46-A		110	150	250	
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				% V_{fin}
KPY 42 ... 46-A		–	± 0.15	± 0.35	
KPY 46-A			± 0.15	–	
Pressure hysteresis $P_1 = P_0, P_2 = P_N, P_3 = P_0$	P_H	–	± 0.1	–	% V_{fin}
KPY 42 ... 46-A					

Electrical Characteristics

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

Parameter	Symbol	Limit Values			Unit
		min.	typ.	max.	
Temperature coefficient of V_{fin} KPY 42-A KPY 43-A KPY 44-A KPY 45-A KPY 46-A	$TC_{V\text{fin}}$	-0.19	-0.15	-0.12	%/K
		-0.19	-0.16	-0.13	
		-0.19	-0.17	-0.14	
		-0.19	-0.17	-0.14	
		-0.19	-0.17	-0.15	
Temperature coefficient of V_0 KPY 42-A KPY 43-A KPY 44-A KPY 45-A KPY 46-A	TC_{V0}	-0.05	-	+0.05	%/K
		-0.03	-	+0.03	
		-0.03	-	+0.03	
		-0.03	-	+0.03	
		-0.03	-	+0.03	
Temperature coefficient of R_B KPY 42 ... 46-A	TC_{RB}	-	+0.095	-	%/K
Temperature coefficient of V_0 ; V_{fin} KPY 42-A KPY 43 ... 46-A	TH	-0.5 -0.3	- -	+0.5 +0.3	% v. V_{fin}

Package Outline



Sorts of Packing

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

Dimensions in mm