AXTAL ADVANCED XTAL PRODUCTS

TEMPERATURE SENSING QUARTZ CRYSTAL RESONATOR **RKT206**

APPLICATIONS

RKT206 is a quartz crystal resonator used to sense temperature changes. The crystal is designed for precision electronic thermometers and temperature controllers for conversion of temperature to frequency.

FEATURES

- High shock and vibration characteristics
- Miniature size
- Wide temperature range (-50…+100 °C)
- Low power consumption
- Suitable for DTCXO and temperature test equipment

ELECTRICAL CHARACTERISTICS (at temperature 37 °C) / OPERATING CONDITIONS

PARAMETERS	SPECIFICATIONS AND REMARKS	UNITS
Package size	DS26 (DT26). Diameter 2 mm / length 6 mm	mm
Electrical characteristics at temperature 37 °C		
Frequency range, f_O	32.000…36.000	kHz
Frequency Tolerance typ./max., $\Delta f/f_O$	$\pm$ 150	ppm
Resonance resistance typ./max., R_r	75/95	kΩ
Static Capacitance typ., C_O	1.3 ± 0.2	pF
Capacitance ratio r	870	
Drive level max., D_L	1.0	µW
Insulation resistance min.	500	MΩ
Motional characteristics		
Frequency vs. Temperature $f_T = f_O + A_1*(T-T_O) + A_2*(T-T_O)^2$, There: f_T – crystal frequency at temperature T (°C), f_O – crystal frequency at reference temperature T_0 (°C), T_O – reference temperature (°C). For higher accuracy f_T can be represented by a third order polynomial as follow: $f_T = f_O + A_1*(T-T_O) + A_2*(T-T_O)^2 + A_3*(T-T_O)^3$		
1st order temperature coefficient A_1*	-1.811 ± 0.06	K^{-1}
2nd order temperature coefficient A_2*	-0.0028 ± 0.0001	K^{-2}
3rd order temperature coefficient A_3*	$7.6 * 10^{-6}$	K^{-3}
Aging first year/10 years max.	$\pm 5 / \pm 10$	ppm
Thermal time constant in liquid τ	5	sec
Operation conditions		
Operating temperature, T_{OPR} (typ/max)	-50…+100 / -269…+125	°C
Storage temperature, T_{STR}	-55…+85	°C
Shock resistance, $\Delta f/f_0$	Drop test 3 times on hard wooden board, height 100cm 5000g., 0.2 ms / ±5 ppm max.	ppm
Vibration resistance, $\Delta f/f_0$	10g / 10-2000 Hz, 8 hours / ±5 PPM max.	ppm

*A_1, A_2 and A_3 coefficients can be changed on request.

PACKAGE DIMENSIONS

UNITS: millimeters

AXTAL GmbH & Co. KG
Wasemweg 5
D-74821 Mosbach
Germany
page 1(1)
www.AXTAL.com
fon: +49 (6261) 939834
fax: +49 (6261) 939836
E-mail: info@axtal.com