RPT5032P

The RPT5032P encompasses Rakon's patented Pluto+ ASIC technology and is specifically designed to meet the short and medium term stability requirements of packet network synchronisation for Small Cells. This 'best-in-class' oscillator has low jitter to meet network interface requirements (e.g. 10GE) and low phase noise to meet the radio interface requirements of LTE-A (TS 36.104) and WCDMA (TS 25.104) transceivers – enabling a single device to be used for both functions. Its superb frequency versus temperature and slope performance, together with the elimination of discrete filter caps makes the RPT5032P the ideal choice for small form factor Small Cell synchronisation requirements.

Features

- Patented 'varactor linearisation' removes the effects of tilt when using voltage control
- Clipped sine wave and HCMOS output options available
- LTE phase noise compliant
- Temperature sensor option

Applications

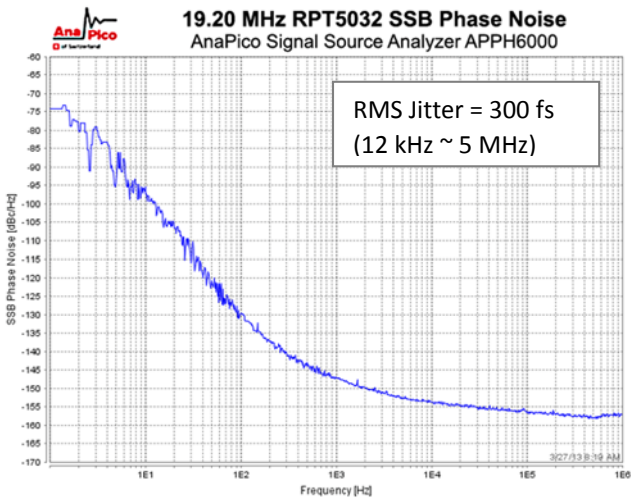
- **Small Cells**
  - WCDMA
  - LTE
  - LTE-A

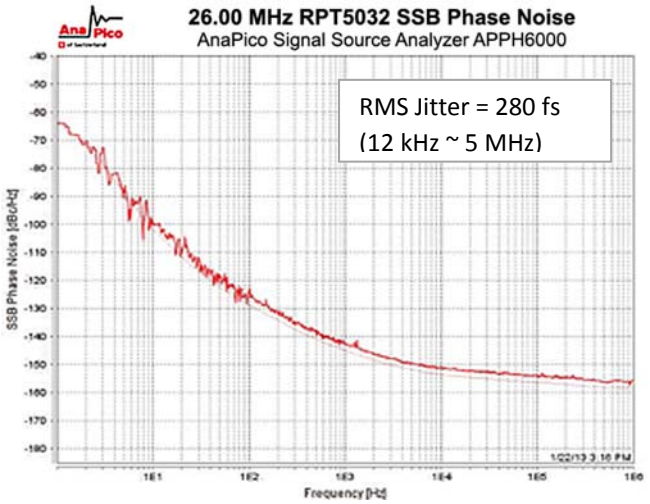
5.0 x 3.2 mm

Standard Specifications

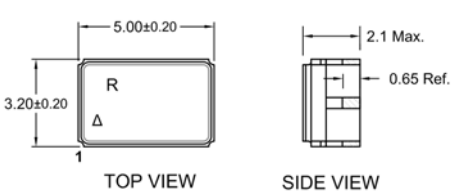
Parameter	Min.	Typ.	Max.	Unit	Test Condition / Description
Nominal frequency		19.2 – 40		MHz	Standard frequencies: 19.2, 25.0, 24.576, 26.0, 30.72, 38.4 and 40.0MHz
Frequency calibration			±1.0	ppm	Initial accuracy at 25°C ±1°C
Reflow shift			±0.5	ppm	Pre to post reflow ΔF (measured ⩾ 60 minutes after reflow)
Operating temperature range	-40		85	°C	
Temperature rate of change			1	°C/min	Maximum rate of change of temperature condition for guaranteed stability specifications
In-service short term frequency stability			±50 – ±250	ppb	All effects for 24 hours
Slope over temperature (ΔF/ΔT)			±20 – ±100	ppb/°C	
Supply voltage stability		±10		ppb	±2% variation Reference to frequency at nominal supply voltage
Load sensitivity		±10		ppb	• HCMOS: ±1pF variation, • Clipped sine wave: ±2% variation Reference to frequency at nominal load
Long term stability (ageing)			±20 ±200	ppb/day ppb/month	±1ppm/year ±3ppm/10 yeas
Acceleration sensitivity		<2		ppb/*g*	Gamma vector, 3–axes, 30–1500Hz
Start-up time			15	ms	90% amplitude
Supply voltage, V_{CC} Current C/Sine Current HCMOS	2.5	 2 4	5.7	V mA mA	Standard values 3.0 and 3.3, other values available upon request
Oscillator output – C/Sine	0.8			Vpp	Load 10pF//10kΩ
Oscillator output – HCMOS Output voltage level high (V_{OH}) Output voltage level low (V_{OL}) Duty cycle Rise & fall time	 $0.9V_{CC}$ 45		 $0.1V_{CC}$ 55 8	 V V % ns	 At 50% level Between 10% and 90%
Control voltage Tuning range Input resistance	0.5 ±5 100		2.5 ±12	V ppm kΩ	

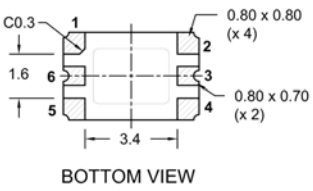
SSB Phase Noise (Typical value at 25°C)

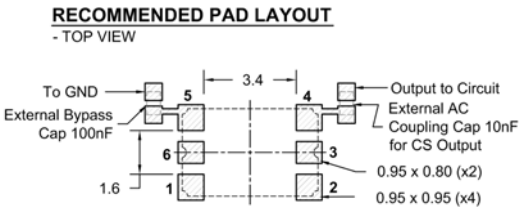




Model Outline and Recommended Pad Layout (6 Pad)





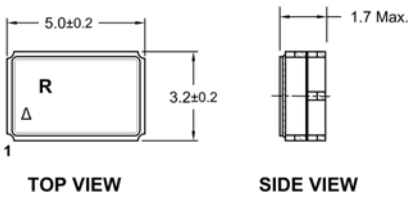


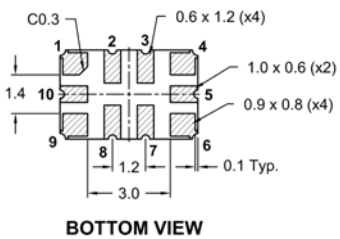
PIN CONNECTIONS	
1 *	Do Not Connect / Vc
2	GND
3 *	Do Not Connect / Vref / Vtemp
4	RF Output
5	Vcc
6	Enable

* Depending on specification

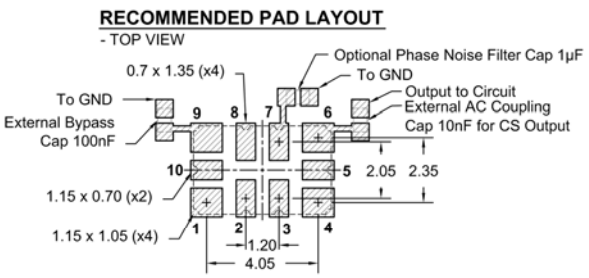
NOTE:
Outline unit is mm.

Model Outline and Recommended Pad Layout (10 pad version coming soon)





Unit: mm.



PIN CONNECTIONS			
1 *	Do Not Connect / Vc	6	RF Output
2	Do Not Connect	7	PN Filter Cap
3	Do Not Connect	8 *	Do Not Connect / Vref / Vtemp
4	GND	9	Vcc
5	Enable	10	Do Not Connect (GND optional)

* Depending on specification