

RPT5032J

The RPT5032J uses Rakon's new patented, Pluto+ ASIC. Pluto+ advances on the world famous, 'best-in-class' Pluto ASIC technology by providing enhanced frequency versus temperature stability. It also delivers to the industry the lowest jitter achievable from an ultra-stable TCXO. This allows the oscillator to be compliant with various standards including GR-1244, GR-253, G.812, G.813, G.8262 and G.827x.

Features

- Best in class frequency versus temperature
- RMS phase jitter down to 0.13ps
- Phase noise < -160dBc/Hz floor
- Excellent holdover stability

Applications

- Stratum 3 / IEEE 1588 / SyncE
- SONET / SDH / WDM / OTN
- Carrier Ethernet / Microwave
- Backhaul / Transport Equipment

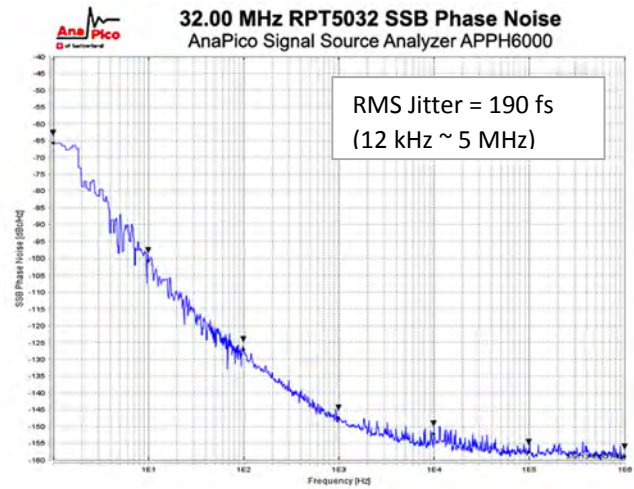
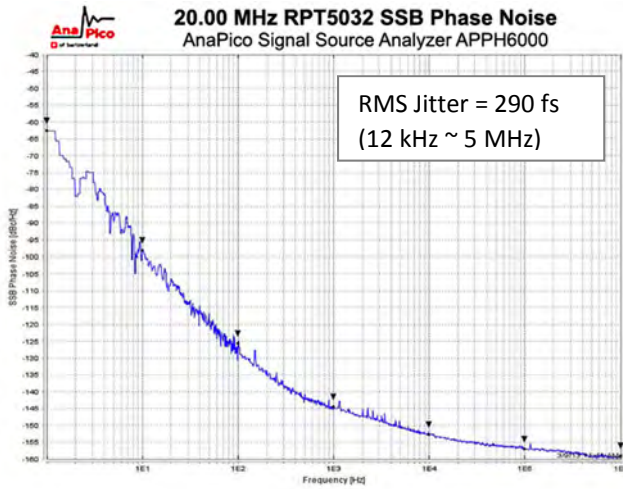
5.0 x 3.2 mm



Standard Specifications

Parameter	Min.	Typ.	Max.	Unit	Test Condition / Description
Nominal frequency		10 – 40		MHz	Standard frequencies: 10, 12.8, 16.384, 19.44, 20, 20.48, 24.576, 25, 30.72, 38.88 and 40MHz
Operating temperature range	-40		85	°C	
Holdover stability, variable temperature			±100 – ±280	ppb	The default reference for holdover stability, variable temperature is (Fmax + Fmin)/2
Holdover stability, constant temperature			±10 – ±40	ppb	±10ppb after 10 days of continuous operation, ±40ppb after 48 hours of continuous operation
Slope over temperature (ΔF/ΔT)			±20 – ±100	ppb/°C	
Free-run accuracy			±4.6	ppm	Inclusive of calibration tolerance at 25°C, temperature, supply voltage variation ±5%, load variation ±5pF, reflow soldering and 20 years ageing reference to the nominal frequency
Wander generation TDEV / MTIE					TDEV compliant with GR-1244 fig 5-4, G.812 types II & III fig 2, G.813, G.8262 MTIE compliant with GR-1244 Fig 5-5, G.812 types II & III fig 1, G.813, G.8262
Supply voltage stability		±0.025		ppm	±5% variation, reference to frequency at nominal supply voltage
Acceleration stability		< 2		ppb/g	Gamma vector, 3-axes, 30-1500Hz
Start-up time			5 – 15	ms	90% amplitude
Root Allan Variance		5		10 ⁻¹¹	tau = 1.0s
Supply voltage, V _{CC}		3.3		V	±5%
Supply current	3		6	mA	Depending on nominal frequency
Oscillator output – HCMOS					LVC MOS & LV TTL compatible as per JESD8C
Output voltage level high (V _{OH})	0.9V _{CC}			V	
Output voltage level low (V _{OL})			0.1V _{CC}	V	
Duty cycle	45		55	%	At 50% level
Rise & fall time			8	ns	Between 10% and 90%
Load	0	15	30	pF	
Tri-state control					
Input level low (pin 6)			0.2V _{CC}	V	Device disabled, output in high impedance state
Input level high (pin 6)	0.6V _{CC}			V	Device enabled, operating

SSB Phase Noise (Typical value at 25°C)



Model Outline and Recommended Pad Layout (6 Pad)

TOP VIEW: 5.0±0.2, 3.2±0.2

SIDE VIEW: 1.9±0.2, 0.65 Ref.

BOTTOM VIEW: 0.80 x 0.80 (x4), 0.80 x 0.70 (x2), 3.4, 1.6, 0.3

RECOMMENDED PAD LAYOUT - TOP VIEW

To GND External Bypass Cap 100nF (Pin 5)

Output to Circuit External AC Coupling Cap 10nF for CS Output (Pin 4)

Dimensions: 1.60, 3.4, 0.95 x 0.80 (x2), 0.95 x 0.95 (x4)

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

NOTE: Outline unit is mm.

* Depending on specification

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

TOP VIEW: 5.0±0.2, 3.2±0.2

SIDE VIEW: 1.7 Max.

BOTTOM VIEW: 0.6 x 1.2 (x4), 1.0 x 0.6 (x2), 0.9 x 0.8 (x4), 1.2, 0.1 Typ., 3.0, 1.4, 10, 9, 8, 7, 6, 5, 4, 3, 2, 1

RECOMMENDED PAD LAYOUT - TOP VIEW

To GND External Bypass Cap 100nF (Pin 9)

Optional Phase Noise Filter Cap 1µF (Pin 7)

Output to Circuit External AC Coupling Cap 10nF for CS Output (Pin 6)

Dimensions: 1.20, 1.20, 2.05, 2.35, 4.05, 1.15 x 0.70 (x2), 1.15 x 1.05 (x4), 0.7 x 1.35 (x4)

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

Unit: mm.

* Depending on specification