



SR B232

Ultra Low Noise SAW Oscillator @ 320 MHz

Specifications Rev. A2

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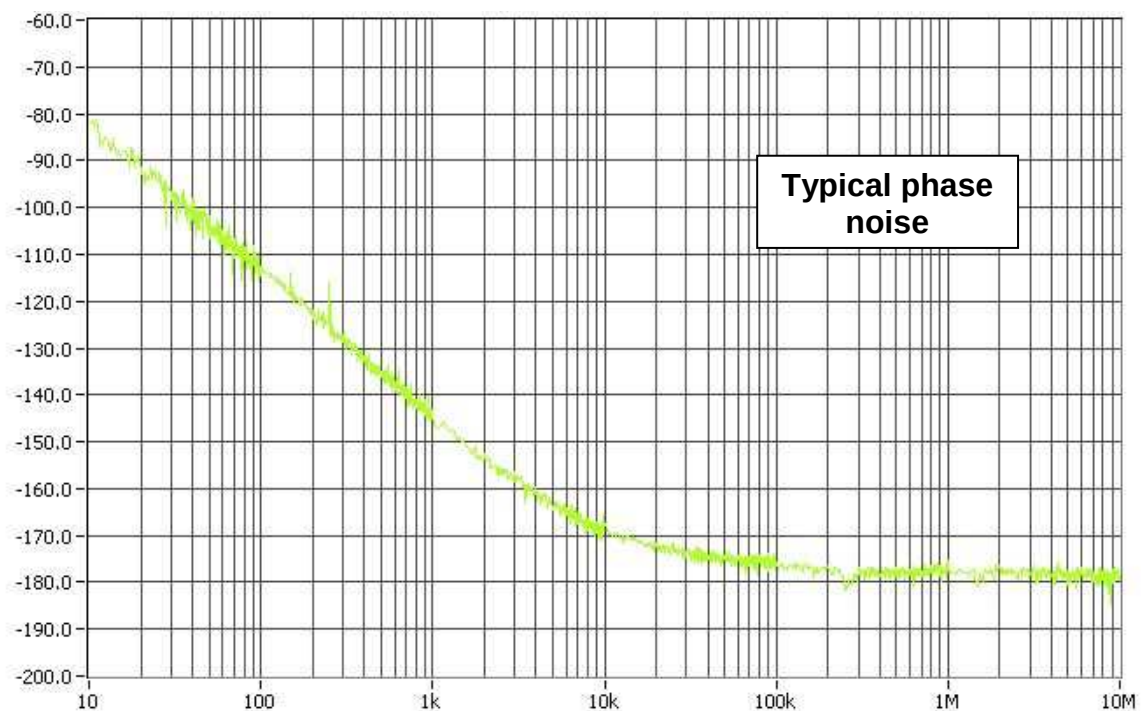
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July, 2009

Features

- ❑ Ultra Low Noise (ULN), Oven Controlled, Voltage Controlled, SAW Oscillator (OCVCSO)
- ❑ Output frequency: 320 MHz
- ❑ Ultra low phase noise:
 - 170 dBc/Hz @ 10 kHz offset (typical)
 - 178 dBc/Hz noise floor (typical)
- ❑ Frequency fine tuning by temperature control of the oven
- ❑ Operating temperature range : [0 to + 50°C]
- ❑ Environment: shelters, stabilized platforms
- ❑ Grade B packaging: 95 x 76 x 23 mm [3.75 x 3 x .92 "]
- ❑ SMA connector for the frequency output + 2 feedthrus for DC supply and V_{Control}



Nota: Typical phase noise of one oscillator measured with the new DCNTS from Aeroflex

Environmental conditions

Parameters	Unit	Minimum	Typical	Maximum
Operating temperature range	°C	0		+ 50
Storage temperature range	°C	- 40		+ 85

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Mechanical characteristics

Package:

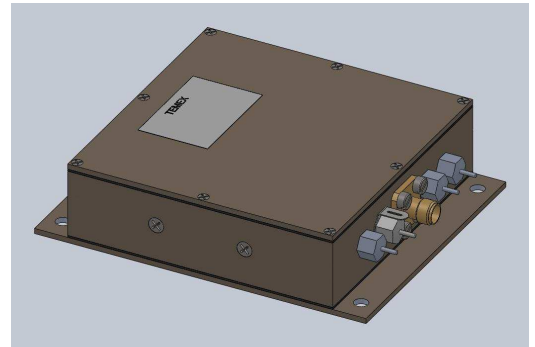
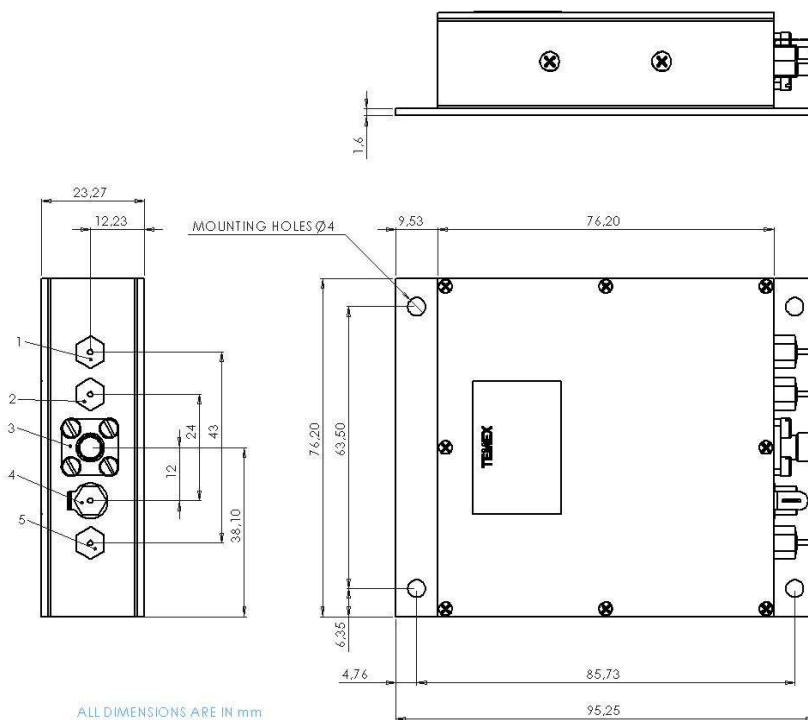
- Machined, shielded enclosure
- SMA connector & feedthru solder pins

Foot-print:

- 96 x 77 mm max.
- [3.75 x 3 inch]

Height:

- 23.3 mm max.
- [0.916 inch]



Pin description

Pin number	Type	Label	Function
1	Feedthru	NA	NC
2	Feedthru + Ground (inside)	DC Supply voltage	Oscillator & oven power supply
3	Female SMA	Frequency output	Frequency output
4	Feedthru + Ground (outside)	Voltage control	Voltage control for electrical tuning
5	Feedthru	NA	NC

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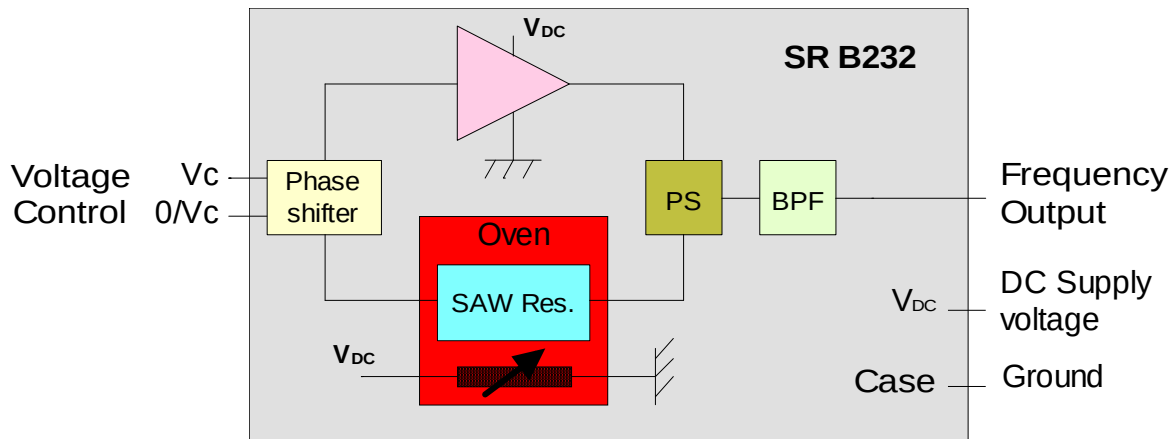
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Technical Characteristics

Block diagram



Electrical specifications

Electrical parameter	Test conditions	Unit	Min.	Typical	Max.
Frequency output	Pin 3, 50 Ω load				
Nominal frequency = F_n	Definition	MHz		320	
Output level	Pin 4 NC	dBm	11.5	12.5	13.5
Harmonics suppression	Second & third harmonics	dBc	- 30		
Phase noise @ 1 kHz offset	Two SRB232 as DUT & reference, phase noise is the sum of both oscillators Test bench: Aeroflex PN9000 (noise floor limited to -175 dBc/Hz)	dBc/Hz		- 145	- 142
Phase noise @ 10 kHz offset		dBc/Hz		- 170	- 167
Phase noise @ 100 kHz offset		dBc/Hz		- 175	- 172
Phase noise floor		dBc/Hz		- 178	- 175
VSWR	320 MHz $\pm$ 10 MHz	-			2:1
Free running mode	Pin 4 NC				
Factory set accuracy	@ 25 $^{\circ}$ C	ppm		$\pm$ 0.1	$\pm$ 0.5
Temperature stability	Referenced to F_n	ppm			$\pm$ 2
Aging per year	After 30 days continuous operation	ppm			$\pm$ 1
Electrical tuning	Pin 4, 0 Ω source				
Voltage range		V	2		7
Relative tuning range	Referenced to F_n	ppm	$\pm$ 4		
Slope	Within tuning range	ppm / V	+1.5	+2	+3
Supply voltage	Pin 2				
Voltage range		V_{DC}	11.8	12	12.2
Power supply ripple	Within [1 kHz to 5 MHz]	mVpp			10
Supply current	Warm-up	mA			700
Supply current	@ + 25 $^{\circ}$ C after warm-up time	mA		270	3 50
Warm up time	frequency accuracy < 4 ppm	mn		4	5