










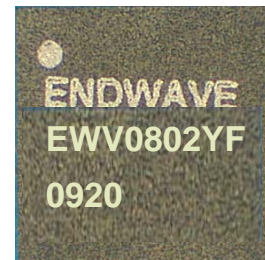


EWV0802YF

Features

-  Dual Output Frequencies
-  Push-push Architecture
-  Phase Noise -116 dBc/Hz @ 100 kHz
-  Output Power at f_{out} : +13 dBm, typical
-  Output Power at $f_{out/2}$: +9 dBm, typical
-  Integrated Divider by 2 Prescaler
-  HBM Class 1A - ESD Protection Bias Circuitry
-  Package: 5 x 5 mm, 32 Lead, plastic overmold QFN
-  100% RF and DC tested
-  Also available in bare die format
-  RoHS Compliant

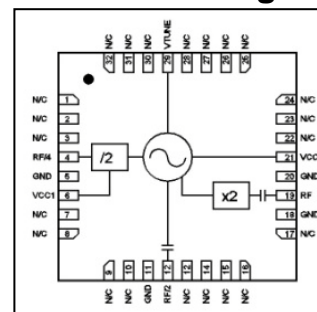
Device Photo



Description

The Endwave *EWV0802YF* is a high performance InGaP/GaAs HBT MMIC voltage controlled oscillator which provides a set of dual outputs ideal for applications which require 3.9 to 4.4 or 7.8 to 8.8 GHz outputs. The device boasts state of the art phase noise at better than -116 dBc/Hz at a 100 kHz offset. This device has integrated ESD Protection Bias Circuitry and can be used for a wide range of applications from defense electronics to commercial communication systems. All parts are 100% DC and RF tested and visually inspected to IPC-A-610.

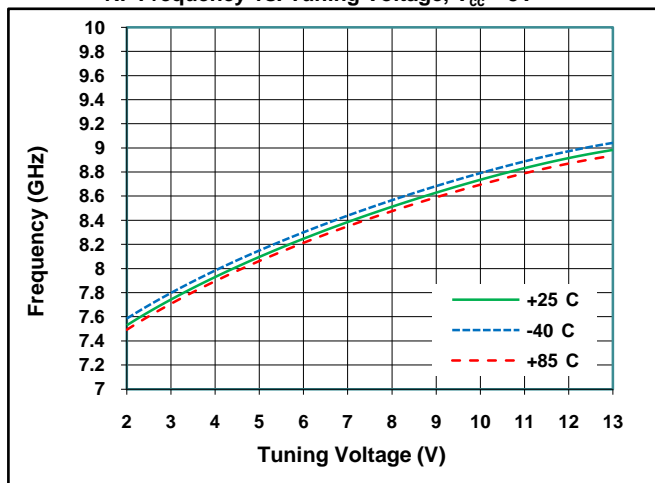
Functional Diagram



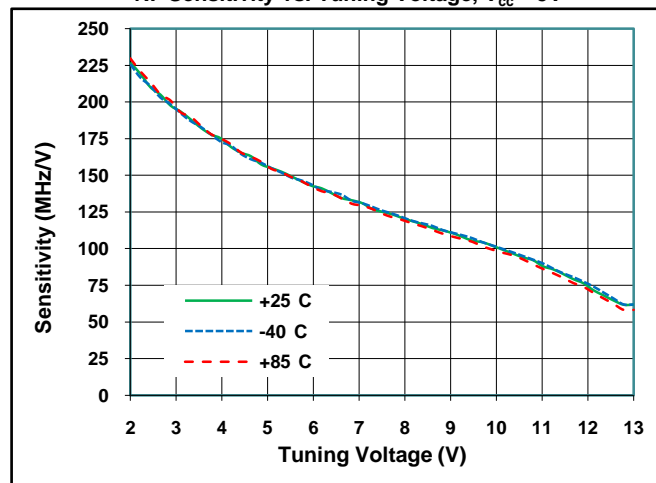
Electrical Characteristics (Temperature = +25 °C, V_{cc} = +5V)

Parameter	Min.	Typ.	Max.	Units
Frequency Range (f_{out})	7.8		8.8	GHz
Frequency Range ($f_{out/2}$)	3.9		4.4	GHz
Output Power (f_{out})	+8	+13	+16	dBm
Output Power ($f_{out/2}$)	+4	+9	+12	dBm
Output Power ($f_{out/4}$)	-3	+1	+3	dBm
Phase Noise @ f_{out} 100 kHz Offset, V_t = +5V		-116		dBc/Hz
Tune Voltage	2		13	V
Supply Current				
VCO	230	260	290	mA
Prescaler (optional)	35	45	55	mA
Tune Port Leakage Current, V_{tune} = 13V			10	uA
Output Return Loss		5		dB
Harmonic / Subharmonics				
$\frac{1}{2}$		41		dBc
2 nd		10		dBc
Pulling (into a 2:1 VSWR)		5		MHz pp
Pushing @ V_{tune} = 5V		10		MHz/V
Frequency Drift Rate			-1.0	MHz/ C

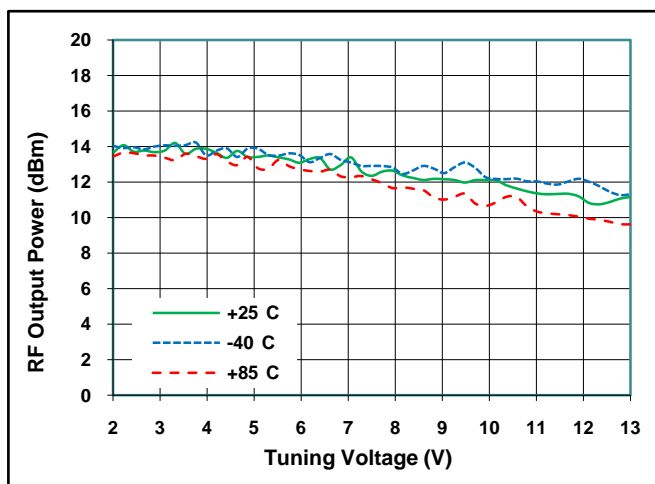
RF Frequency vs. Tuning Voltage, $V_{cc} = 5V$



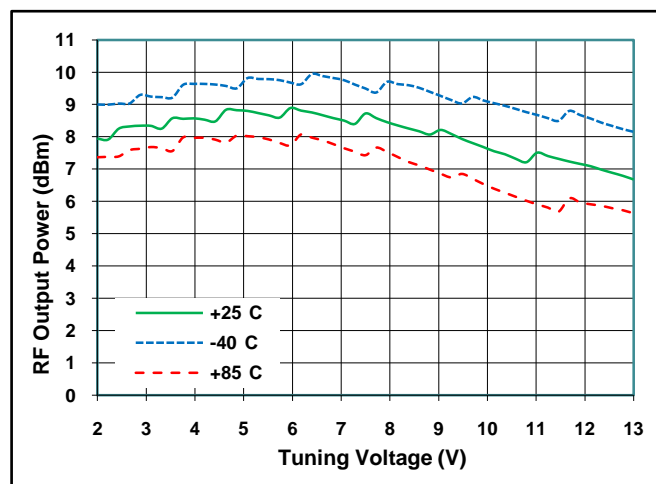
RF Sensitivity vs. Tuning Voltage, $V_{cc} = 5V$



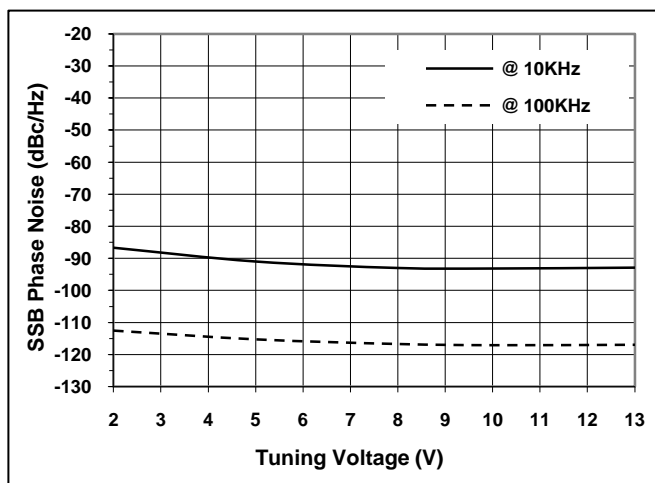
RF Output Power vs. Tuning Voltage, $V_{cc} = 5V$



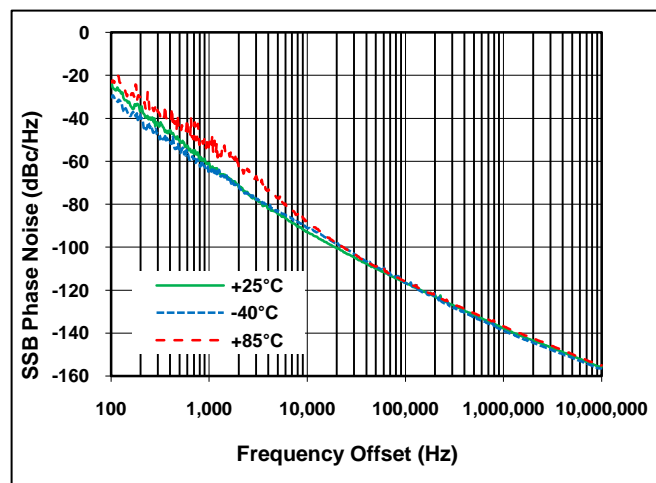
RF/2 Output Power vs. Tuning Voltage, $V_{cc} = 5V$



SSB Phase Noise @ RF Output vs. Tuning Voltage



SSB Phase Noise @ RF Output vs. $V_{tune} = 8V$



Voltage Controlled Oscillators - Packaged

EWV0802YF

September 2009 – Rev 7

Production

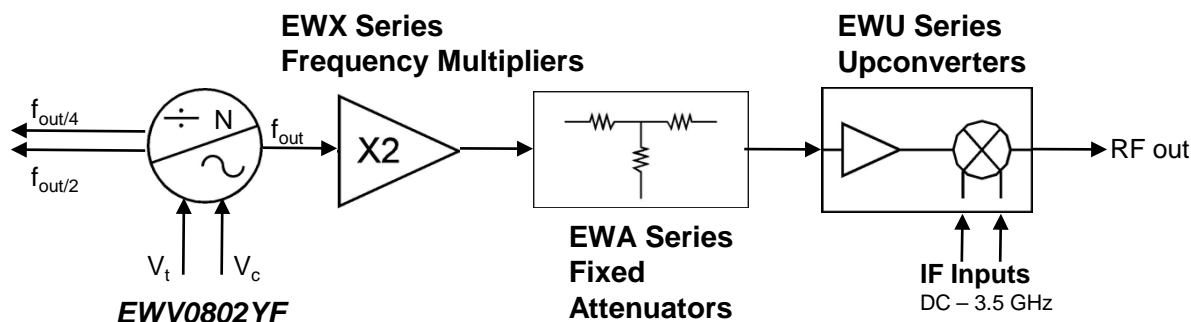
Absolute Maximum Ratings

Supply Voltage, V_{cc}	+5.5V
Tune Voltage, V_t	+0 to +15 V
Channel Temperature	135°C
Continuous Power Dissipation at 25°C	1.32 W
Supply Current, VCO	330 mA
Supply Current, Prescaler	60 mA
Storage Temperature	-65 to +150°C
Operating Temperature	-40 to +85°C

Typical Supply Current

V_{cc}	I_{cc}
4.8 V	237 mA
5.0 V	260mA
5.2 V	283 mA

Typical Application



Support Documentation

Support documentation including Assembly Notes, Application Notes and Qualification Procedures can be found on our website at www.endwave.com.

Ordering Information

Part Number	Description
EWV0802YF	RoHS compliant, 5 x 5mm, 32 lead, QFN "F" Package
EWV0802YF-EV	EWV0802YF on an Evaluation Board
EWV0802ZZ	RoHS compliant bare die in waffle or gel packs
EWV0802ZZ-EV	EWV0802ZZ in a connectorized test fixture