

Local Oscillator/Mixer Assembly

21.20 - 23.60 GHz

MA87926

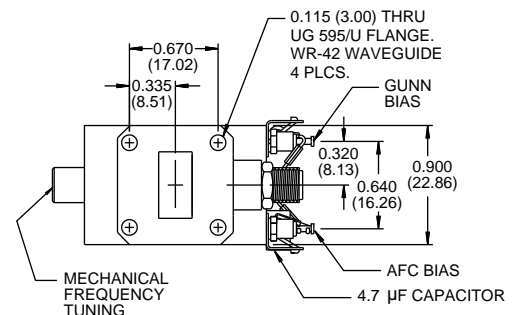
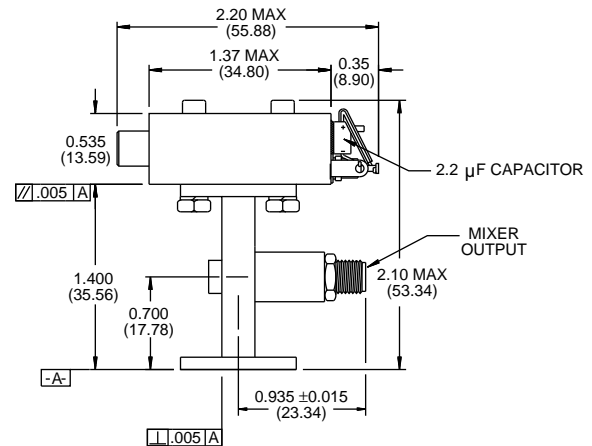
V3.00

Features

- Low AM/FM Noise
- Electronic Tuning Allows Automatic Frequency Control (AFC)
- Suitable for Digital or Analog Microwave Radio Applications
- Mounts Directly to Existing Waveguide Interfaces Such as Bandpass Filters, Isolators
- Small and Lightweight

Description

A mechanically and electronically tunable local oscillator/mixer assembly designed for operation in the 21.2 to 23.6 GHz communications band. This subassembly is suitable as the downconverter in the receive end of a point-to-point microwave radio system. A Gunn diode and GaAs varactor diode are coupled in a single high Q cavity to provide low AM/FM noise, excellent frequency/power output stability with respect to changes in operating temperature. The mixer assembly consists of a hermetically packaged silicon Schottky diode matched to an open waveguide assembly which provides reasonable conversion loss with IF frequencies to 600 MHz.



Dimensions in () are in mm.

Specifications @ 25°C

Parameter	Symbol	Units	Specification
Frequency Range ¹	F	GHz	21.200 to 23.600
Electronic Tuning Ranges	$\Delta F/\Delta V$	MHz	40 Min.
Voltage Operating Range (Gunn) ²	$V_{OP}/GUNN$	VDC	+4.5 to +8.0
Operating Current (Gunn)	I_{OP}	mA	500 Max.
Startup Current (Gunn)	I_{TH}	mA	650 Max.
Voltage Operating Range (Tuning)	$V_{OP}/TUNING$	VDC	+1.0 to +10.0
Change Frequency vs. Temperature	$\Delta F/\Delta T$	MHz	±15 Max.
Recommended Output Load Parameter	LOAD (SWR)	SWR	1.5:1 Max., Any Phase
Operating Temperature Range (Ambient) ³	T_{OP}	°C	-30 to +70
IF Frequency Ranges	F_{IF}	MHz	10 to 600
Signal Conversion Loss	L_C	dB	9.0 Max.
LO to RF Isolation	LO/RF	dB	6 Typ.
Recommended DC Return (Mixer Diode) ⁴		Ohms	< 5
Waveguide Size/Flange			WR-42, UG-595/U
IF Connector (Mixer)			SMA - Female

1. Available in 600 MHz mechanically tuned bands.
2. Specific voltage assigned by factory. Power supply voltages should be held to ± 0.10 V.
3. The ambient temperature is defined as air temperature.
4. DC return signal is not supplied in the assembly.

Specifications Subject to Change Without Notice.

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