Double Balanced Mixers
18 - 40 GHz

5 (WG) 790 Series

V2.00

Features

- Broad Bandwidth
- Planar Construction
- Beam Lead Diodes
- High Reliability
- Small and Lightweight

Description

These mixers are broadband, double-balanced downconverters utilizing a unique planar MIC approach in a waveguide package. This technique provides excellent electrical performance in a compact format. Operation over the specified instantaneous bandwidth is provided for the Signals and LO simultaneously. The double-balanced feature provides inherent isolation between ports due to symmetry without the necessity of filtering which results in a wide instantaneous IF bandwidth. The four diodes required provide yet another advantage by lowering the IF impedance to the desirable 50 ohm level during normal operation. These diodes are glass passivated to provide a positive seal against humidity as well as to add mechanical strength to the beam leads. Each mixer is thoroughly screened to further enhance reliability and longevity. Another fundamental advantage of this mixer approach is that the Signal and LO ports are co-planar. This feature enables other devices to be readily integrated with the mixer either as discrete, individual components or as an integrated assembly, custom designed on the same substrate. Special performance or custom features can be provided on request.

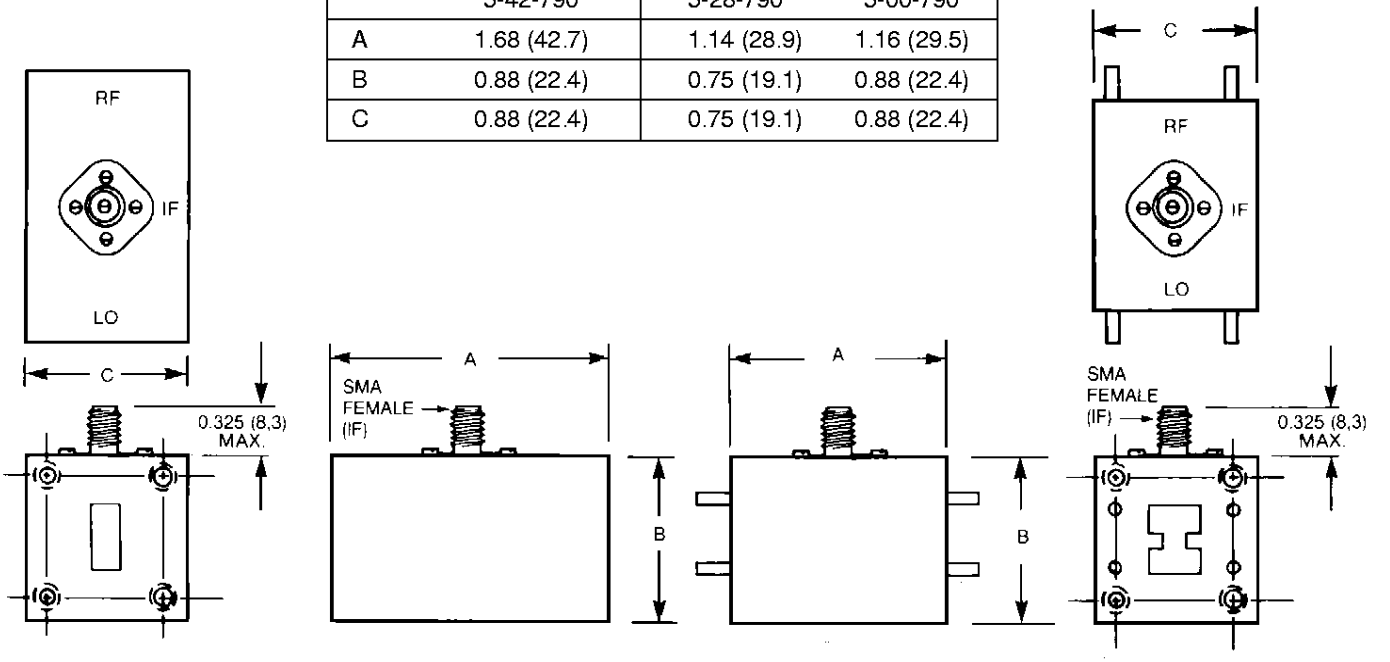
Part Number

5-42-790
5-28-790

Dimensions Inches	Part Number		
	5-42-790	5-28-790	5-00-790
A	1.68 (42.7)	1.14 (28.9)	1.16 (29.5)
B	0.88 (22.4)	0.75 (19.1)	0.88 (22.4)
C	0.88 (22.4)	0.75 (19.1)	0.88 (22.4)

Part Number

5-00-790



Specifications at 25°C

Instantaneous Bandwidth (GHz) Signal/LO	IF	SSB Conversion Loss (dB Typ/Max.)	Conversion Loss Flatness (dB)	VSWR (Max.) Signal/LO	IF[1]	Part Number
18-26.5	0-6	6.0/7.0	±1.0	2.2	2.0	5-42-790
26.5-40	0-8	6.2/7.5	±1.0	2.2	2.0	5-28-790
18-40	0-8	7.5/9.5	±1.5	2.5	2.0	5-00-790

Common Specifications

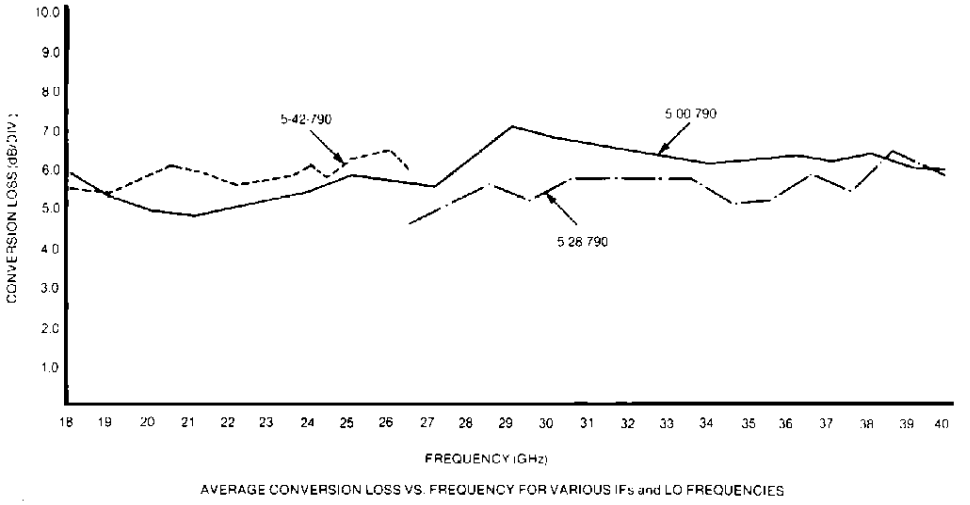
Optimum LO Drive	+10 dBm
1 dB Compression Point	+4 dBm
3rd Order IM Intercept	+14 dBm
Signal to LO Isolation	20 dB
Operating Temperature	-55°C to +70°C

Mechanical Specifications

Waveguide	5-42-790 WR-42	5-28-790 WR-28	5-00-790 WRD-180
RF Mating Flange	MIL-F-3922/54-001M	MIL-F-3922/68-002	MIL-F-39000/3B-088
UG Reference	595/U	599/U	1586/U

Notes:
1. Z_0 = 50 Ohms
2. All units can be sealed.
3. Optimization for narrow bandwidth available.
4. Higher RF frequencies available

Typical Performance



AVERAGE CONVERSION LOSS VS. FREQUENCY FOR VARIOUS IFs and LO FREQUENCIES

North America: Tel. (800) 366-2266 Fax (800) 618-8883 ■ Asia/Pacific: Tel. +81 (03) 3226-1671 Fax +81 (03) 3226-1451 ■ Europe: Tel. +44 (1344) 869 595 Fax +44 (1344) 300 020