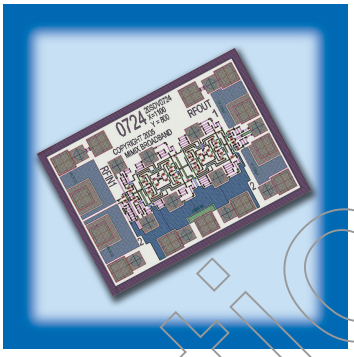
2.0-19.0 GHz GaAs MMIC Frequency Divider

December 2007 - Rev 04-Dec-07

XE1001-BD
XRoHS

Features

- X Divide-by-Four
- X +0.0 dBm Output Power
- X 35 dBc Fundamental Leakage
- X Single-ended or Differential Input & Output
- X 100% On-Wafer, DC and Output Power Testing
- X 100% Visual Inspection to MIL-STD-883 Method 2010



General Description

Mimix Broadband's 2.0-19.0 GHz GaAs MMIC freqency divider is an ECL (Emitter Coupled Logic) static frequency divider (divide-by-four) consisting of two cascaded divide-by-two circuits. Even-order harmonic levels are minimized by driving the inputs with a balanced input signal, and by taking the output differentially, but the circuit can be operated in a single-ended fashion with unused inputs & outputs open circuit. This MMIC uses Mimix Broadband's 2 um GaAs HBT device model technology to ensure high reliability and uniformity. The chip has surface passivation to protect and provide a rugged part with backside via holes and gold metallization to allow either a conductive epoxy or eutectic solder die attach process. This device is well suited for Millimeter-wave Point-to-Point Radio, LMDS, SATCOM and VSAT applications.

Absolute Maximum Ratings

Supply Voltage (Vcc)	+7.0 VDC
Supply Current (Icc)	150 mA
Input Power (Pin)	+15 dBm
Storage Temperature (Tstg)	-65 to +165 °C
Operating Temperature (Ta)	-55 to MTTF Table[1]
Junction Temperature (Tch)	MTTF Table[1]

(1) Junction temperature affects a device's MTTF. It is recommended to keep channel temperature as low as possible for maximum life.

Electrical Characteristics (Ambient Temperature T = 25 °C)

Parameter	Units	Min.	Typ.	Max.
Input Frequency Range (f)	GHz	2.0	-	19.0
Output Frequency Range (f)	GHz	0.5	-	4.75
Input Power (Pin)	dBm	-20.0	-	+5.0
Output Power (Pout)	dBm	-	+0.0	-
Fin Suppression	dBc	-	35.0	-
Fin/2 Suppression	dBc	-	25.0	-
3*Fin/4 Suppression	dBc	-	15.0	-
2*Fin Suppression	dBc	-	30.0	-
Supply Voltage (Vcc)	VDC	+4.75	+5.0	+5.5
Supply Current (Icc) (Vcc=5.0V Typical)	mA	70.0	80.0	100.0

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