



TLCM01981

Ka-Band MMIC Mixer

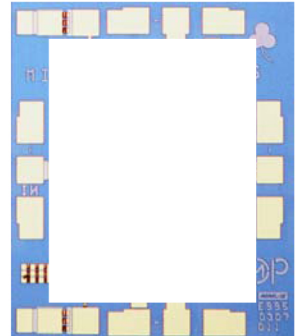
Description

The TLCM01981 is a single-stage, three port MMIC mixer. A 0.15m MHEMT process was chosen to provide lower conversion loss. This mixer can be used as a resistive or transconductance down converter. This mixer can also be used as a resistive up converter. The TLCM01981 chip is automatically tuned by TLC to customer specifications.

The low conversion loss provided by the TLCM01981 mixer makes it an excellent candidate for use in radar or communication systems.

Features

- ❑ 16 to 40 GHz RF
- ❑ 16 to 40 GHz LO
- ❑ Conversion Loss < 10 dB
- ❑ Optional up or down conversion
- ❑ Optional IF output location
- ❑ 100% Tested



Maximum Ratings

Symbol	Parameter	Rating	Units
VD	Positive Supply Voltages	6	V
VG	Negative Supply Voltage	- 2	V
ID	Positive Supply Current	200	mA
TC	Operating Temperature	- 50 to 130	° C
TSTG	Storage Temperature	- 65 to -150	° C

Performance Summary

Parameter (@ 25 °C)	Min	Typ	Max	Units
RF Frequency	16	35	45	GHz
L _O Frequency	16	35	45	GHz
IF Frequency	0.2	1	4	GHz
Conversion Loss _{DC-Resistive}	--	8	10	dB
Conversion Loss _{DC-Trans}	0	1	--	dB
Conversion Loss _{UC-Resistive}	--	10	12	dB
Noise Figure _{DC-Resistive}	--	8	10	GHz
Noise Figure _{DC-Trans}	--	12	14	GHz

Operating Conditions

Frequency input levels = 10 dBm
 $V_{gs-trans} = -3.5\text{ V}$ $V_{ds-trans} = 5\text{ V}$

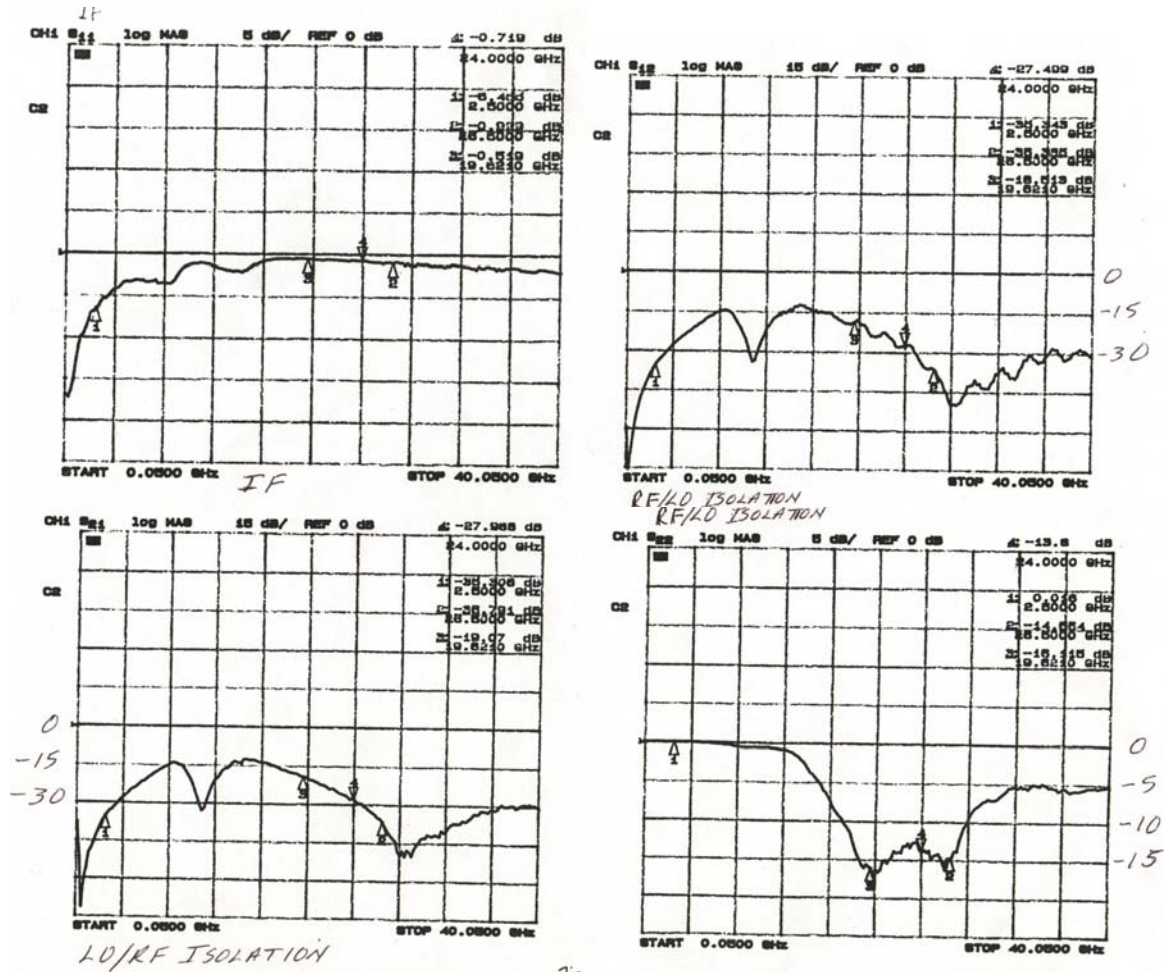
TLC reserves the right to change performance data and specifications without notice



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Performance Data



Test results shown with LO = 18 GHz and RF swept 18 to 40 GHz.

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