

# FMM5107VD

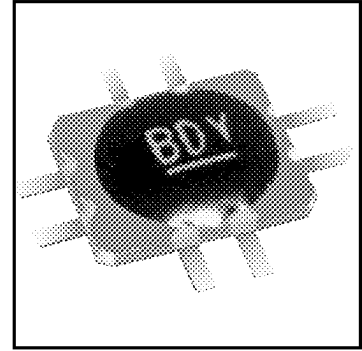
## MMIC X/Ku-Band DBS Downconverter

### FEATURES

- Integrated Monolithic Downconverter
- Small Size SMT Package
- Single Supply Voltage Operation
- High Reliability

### DESCRIPTION

The FMM5107VD is a MMIC downconverter for use in all FSS and DBS applications. It consists of a low noise mixer and IF amplifier and is designed to operate with the FMM5201ML or FMM5202ML low phase noise oscillator MMICs.



Fujitsu's stringent Quality Assurance Program assures the highest reliability and consistent performance.

### ABSOLUTE MAXIMUM RATINGS (Ambient Temperature Ta=25°C)

Parameter	Symbol	Rating	Unit
DC Bias Voltage	V <sub>DD</sub>	8	V
Storage Temperature	T <sub>stg</sub>	-55 ~ +125	°C
Operating Temperature	T <sub>op</sub>	-40 ~ +85	°C

### ELECTRICAL CHARACTERISTICS (Ambient Temperature Ta=25°C)

Parameter	Symbol	Conditions	Limits			Unit
			Min.	Typ.	Max.	
Usable RF Frequency Range	f <sub>RF</sub>	—	10.7	-	12.75	GHz
Usable LO Frequency Range	f <sub>LO</sub>		9.75	-	11.5	GHz
Usable IF Frequency Range	f <sub>IF</sub>		950	-	2150	MHz
Conversion Gain	G <sub>c</sub>	V <sub>DD</sub> = 6V f <sub>LO</sub> = 10.6GHz P <sub>LO</sub> = +3dBm f <sub>IF</sub> = 950 ~ 2050MHz	32	35	40	dB
SSB Noise Figure	NF		-	7.5	9.0	dB
Gain Flatness	ΔG		-	2.0	4.0	dB
Supply Current	I <sub>DD</sub>		-	60	80	mA
RF Return Loss (Z <sub>O</sub> =50Ω)	RF RL		-	8	-	dB
IF Return Loss (Z <sub>O</sub> =75Ω)	IF RL		-	8	-	dB
Output Third Order IP	OIP <sub>3</sub>		-	16.5	-	dBm
LO-RF Leakage	LO-RF		-	-25	-	dBm
LO-IF Leakage	LO-IF		-	-25	-	dBm

CASE STYLE: VD

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### Measurement Circuit Design

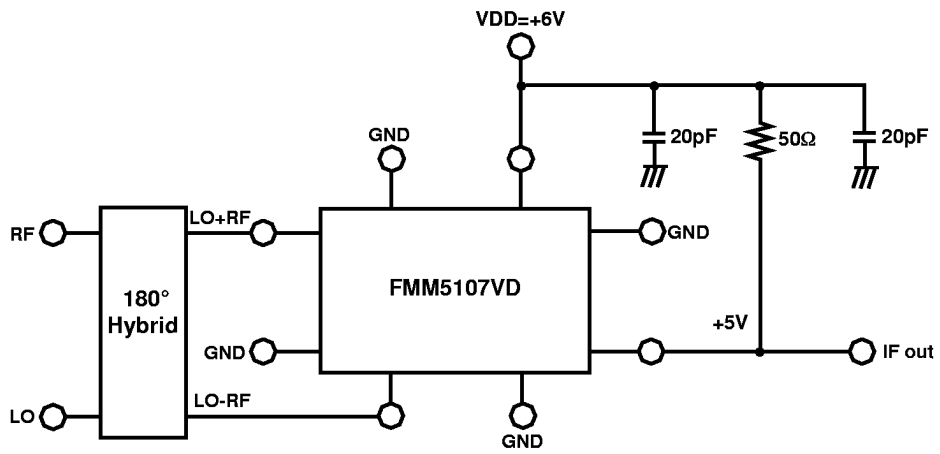
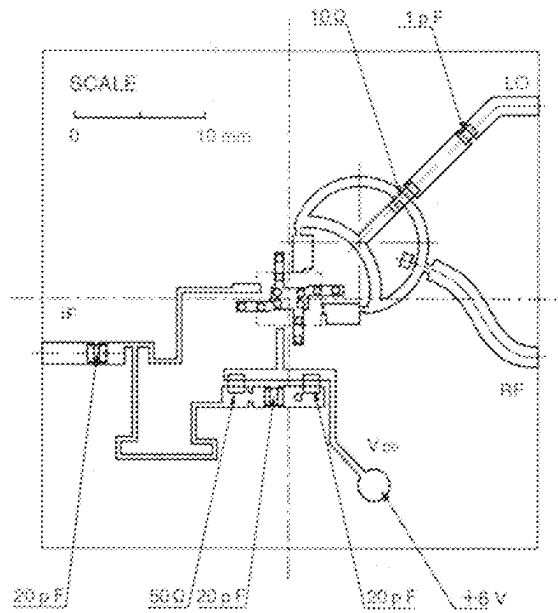


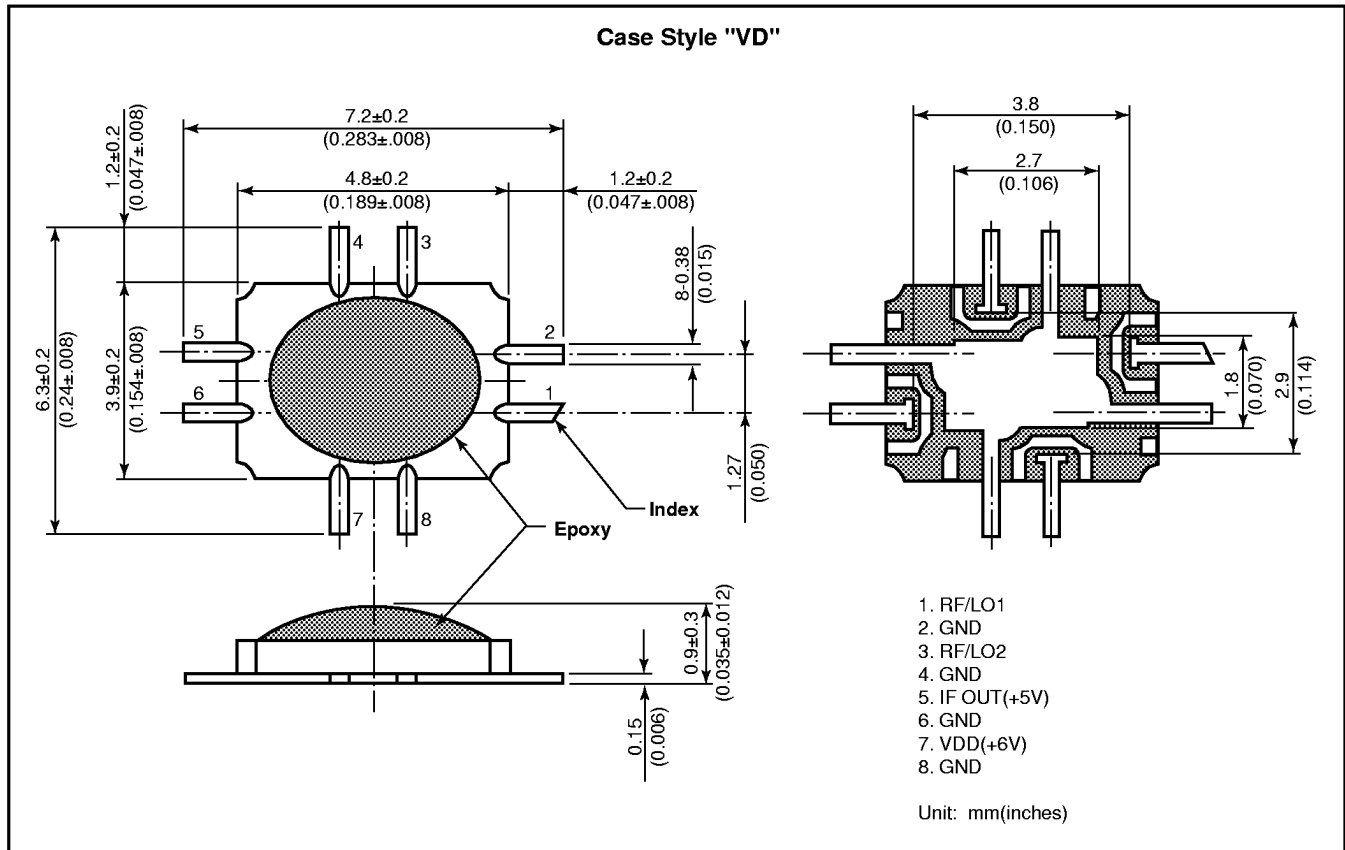
Figure 1

### Measurement Circuit PCB



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Fujitsu Compound Semiconductor Products contain **gallium arsenide (GaAs)** which can be hazardous to the human body and the environment. For safety, observe the following procedures:

- Do not put these products into the mouth.
- Do not alter the form of this product into a gas, powder, or liquid through burning, crushing, or chemical processing as these by-products are dangerous to the human body if inhaled, ingested, or swallowed.
- Observe government laws and company regulations when discarding this product. This product must be discarded in accordance with methods specified by applicable hazardous waste procedures.

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