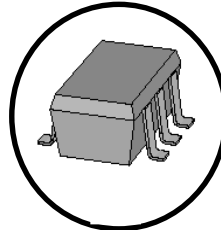




FMM5107MLT4E1

MMIC X/Ku-Band DBS Downconverter



SOT Package

FEATURES

- Integrated Monolithic Downconverter
- Small Size SOT Package
- High Gain
- Pb Free

DESCRIPTION

The FMM5107MLT4E1 is a MMIC downconverter for use in all DBS application. It consists of a low noise mixer and IF amplifier and is designed to operate with the FMM5201MLT(4E1) or FMM5202ML low phase noise oscillator MMICs.

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

Parameter	Symbol	Rating	Unit
DC Bias Voltage	V _{DD}	8	V
Storage Temperature	T _{stg}	-55 ~ +125	°C
Operating Temperature	T _{op}	-40 ~ +85	°C

ELECTRICAL CHARACTERISTICS (Ambient Temperature Ta = 25°C)

Parameter	Symbol	Conditions	Limits			Unit
			Min.	Typ.	Max.	
Usable RF Frequency Range	f _{RF}	—	10.7	—	12.75	GHz
Usable LO Frequency Range	f _{LO}		9.75	—	11.5	GHz
Usable IF Frequency Range	f _{IF}		950	—	2150	MHz
Conversion Gain	G _c	V _{DD} = 6V	32	36	40	dB
SSB Noise Figure	NF	f _{LO} = 10.6GHz	—	8	9.5	dB
Gain Flatness	ΔG	f _{IF} = 950 ~	—	2	4	dB
Supply Current	I _{DD}	2050MHz	—	60	80	mA
RF Return Loss (Z ₀ = 50 Ω) *1)	RF RL	*2)	—	8	—	dB
LO Return Loss (Z ₀ = 50 Ω) *1)	LO RL	*3)	—	8	—	dB
IF Return Loss (Z ₀ = 50 Ω) *1)	IF RL	*4)	—	8	—	dB
Output Third Order IP *1)	OIP ₃	*5)	—	23	—	dBm
LO-RF Leakage *1)	LO-RF	*6)	—	-10	—	dBm
LO-IF Leakage *1)	LO-IF		—	-25	—	dBm

*1) Specification items guaranteed but not tested

*2) f_{RF}=10.7~12.75GHz, V_{DD}=6V

*3) f_{LO}=10.6GHz, V_{DD}=6V

*4) f_{IF}=950~2050MHz, V_{DD}=6V

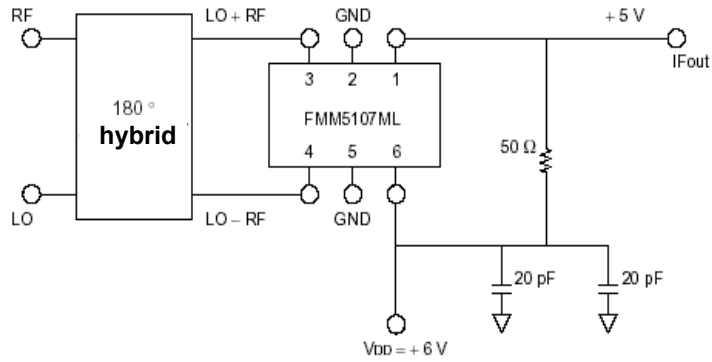
*5) f_{IF}=-1550MHz, V_{DD}=6V

*6) f_{LO}=10.6GHz, V_{DD}=6V, LO=3dBm

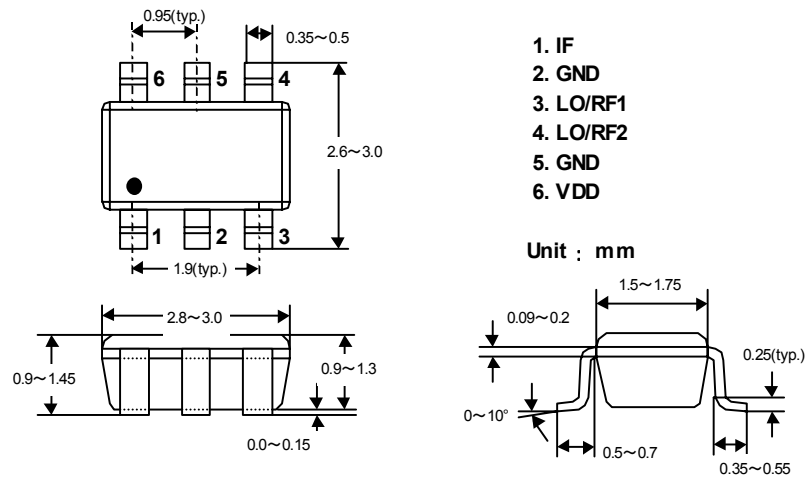
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Evaluation Circuit



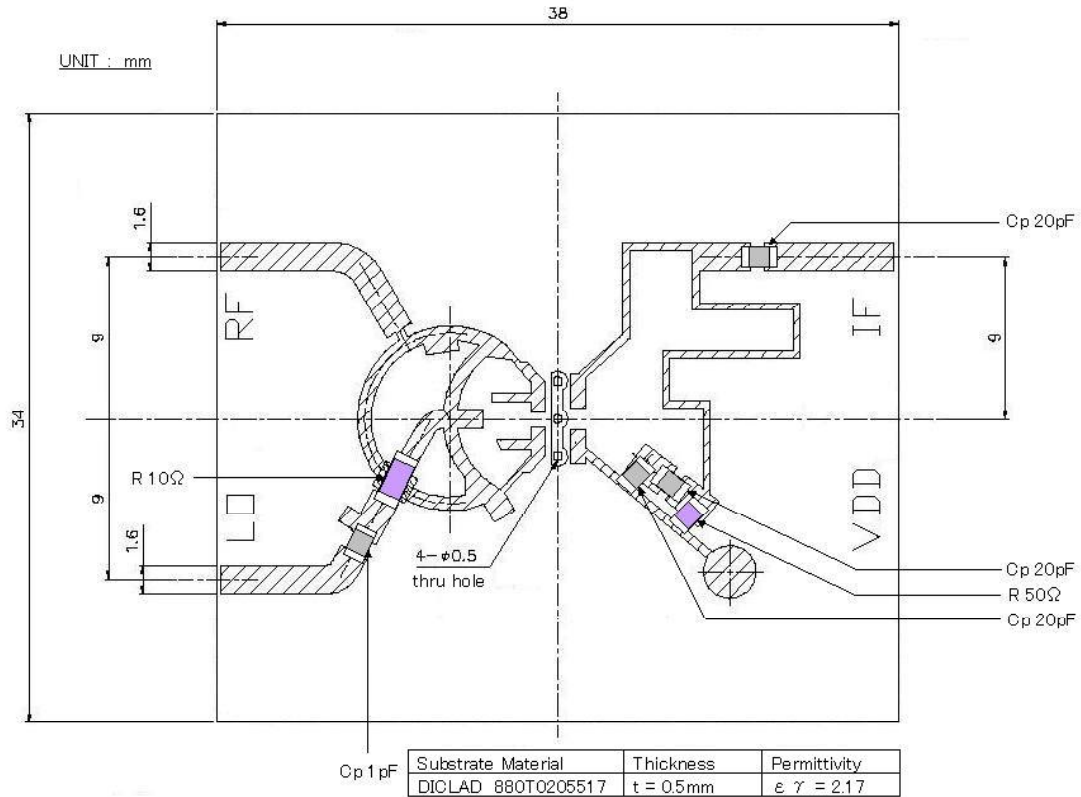
Package Dimensions



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MMIC X/Ku-Band DBS Downconverter

Evaluation Board Drawing



Rev 3.0
June 6, 2005