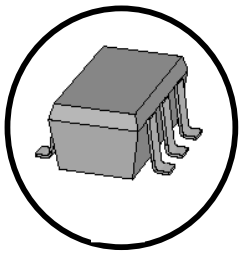
FMM5107MLT4E1

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℃)

Parameter	Symbol	Rating	Unit
DC Bias Voltage	V_{DD}	8	V
Storage Temperature	T_{stg}	-55 ～ +125	℃
Operating Temperature	T_{op}	-40 ～ +85	℃

ELECTRICAL CHARACTERISTICS (Ambient Temperature Ta = 25℃)

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 = 50Ω) *1)	RF RL	*2)	—	8	—	dB
LO Return Loss (Z0 = 50Ω) *1)	LO RL	*3)	—	8	—	dB
IF Return Loss (Z_0 = 50Ω) *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

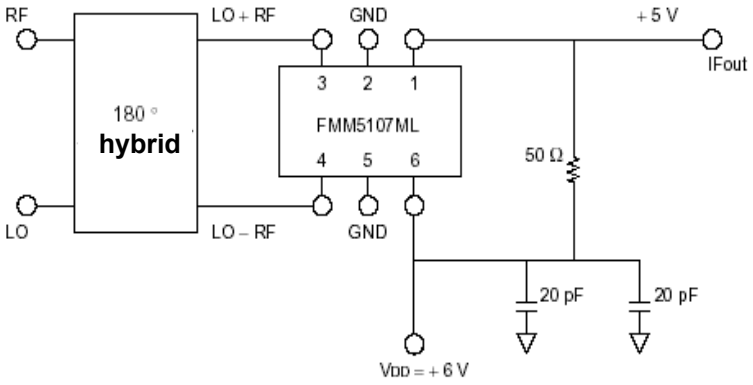
*5) f_{IF}=-1550MHz, V_{DD}=6V

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

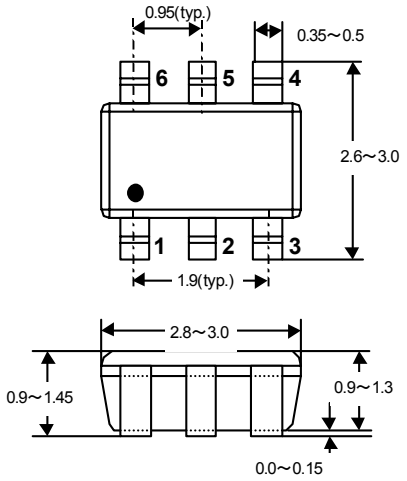
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Evaluation Circuit

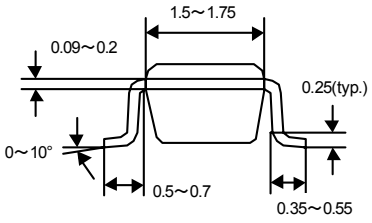


Package Dimensions



1. IF
2. GND
3. LO/RF1
4. LO/RF2
5. GND
6. VDD

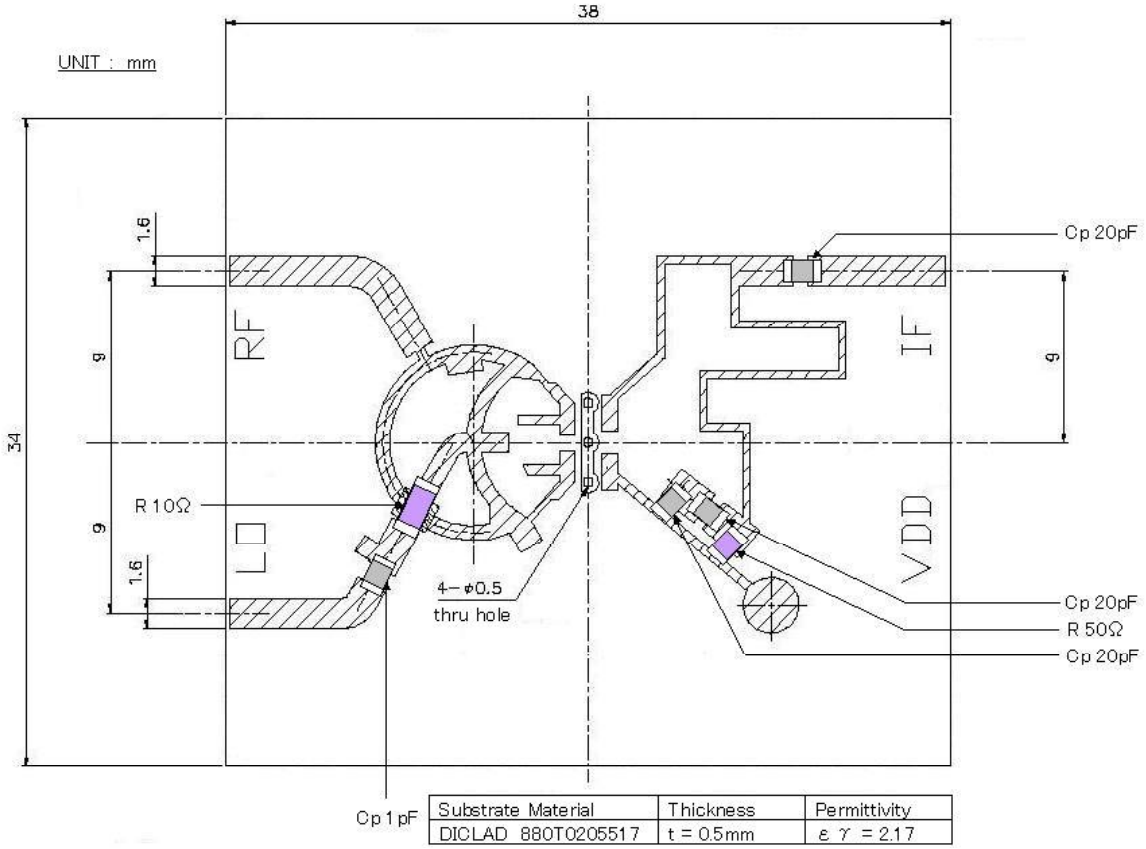
Unit : mm



FMM5107MLT4E1

MMIC X/Ku-Band DBS Downconverter

Evaluation Board Drawing



Substrate Material	Thickness	Permittivity
DICLAD 880T0205517	t = 0.5mm	ε γ = 2.17