

## Driver Amplifier for Transmission

### Description

The CXG1027TM is a two-stage driver amplifier for 800 MHz and 1.5 GHz PDC. This is used to amplify the transmission-side power of the RF signal.

### Features

- Ultraminiature package (10 pin TSSOP)
- Low voltage operation
  - : 2.9 V (Min.)
- Low current consumption
  - : 45 mA (Typ.)
- High gain
  - : 27.5 dB (Typ.) (for 1.5 GHz)
  - 29.5 dB (Typ.) (for 800 MHz)
- Low distortion (Adjacent channel leak power ratio)
  - : -50 dBc (Typ.) (30 kHz offset)
  - 69 dBc (Typ.) (50 kHz offset)
- Positive power supply operation  
(Adjustment-free for  $V_{GG}$ )
- Supports both 800 MHz and 1.5 GHz by the external matching circuit

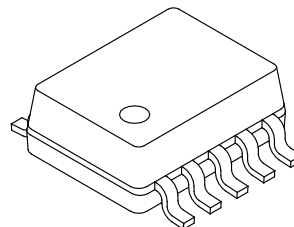
### Applications

Power amplification between the quadrature modulator IC for 800 MHz/1.5 GHz PDC transmitter (approx. -15 dBm output) and the power module or power amplifier MMIC (approx. +10 dBm input)

### Structure

GaAs MMIC

10 pin TSSOP (Plastic)



### Absolute Maximum Ratings (Ta=25 °C)

• Supply voltage	$V_{DD}$	6	V
• Operating temperature	$T_{opr}$	-35 to +85	°C
• Storage temperature	$T_{stg}$	-65 to +150	°C
• Allowable power dissipation	$P_D$	550	mW
• Voltage between gate and source	$V_{GSO}$	15	V
• Drain current		150	mA

### Operating Condition

Supply voltage	$V_{DD}$	3.4	V
	$V_{GG}$	0.2	V

**Electrical Characteristics**

V<sub>GG</sub>=0.2 V, V<sub>DD</sub>=3.4 V, f=941.5 MHz

(Ta=25 °C)

Item	Symbol	Min.	Typ.	Max.	Unit
*1 Current consumption	I <sub>DD</sub>		45	65	mA
Output power	P <sub>OUT</sub>	10			dBm
*1 Power gain	G <sub>P</sub>	27	29.5	32	dB
*2 Adjacent channel leak power ratio (30 kHz offset)	ACPR30		-50	-47	dBc
*2 Adjacent channel leak power ratio (50 kHz offset)	ACPR50		-69	-65	dBc

V<sub>GG</sub>=0.2 V, V<sub>DD</sub>=3.4 V, f=1.441 GHz

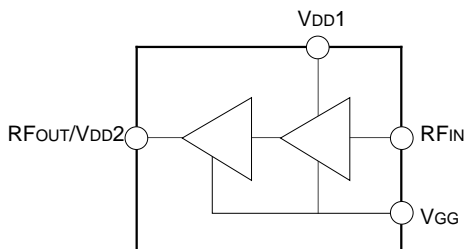
(Ta=25 °C)

Item	Symbol	Min.	Typ.	Max.	Unit
*1 Current consumption	I <sub>DD</sub>		45	65	mA
Output power	P <sub>OUT</sub>	10			dBm
*1 Power gain	G <sub>P</sub>	25	27.5	30	dB
*2 Adjacent channel leak power ratio (30 kHz offset)	ACPR30		-50	-47	dBc
*2 Adjacent channel leak power ratio (50 kHz offset)	ACPR50		-69	-65	dBc

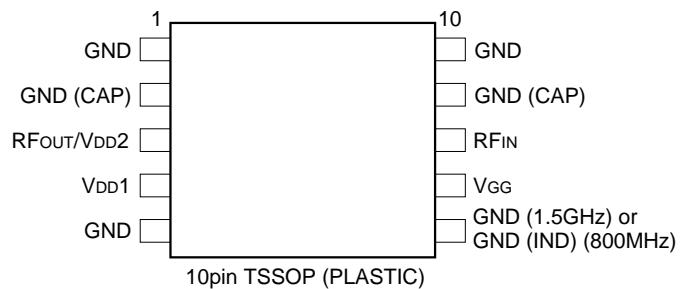
\*1 : When +10 dBm output

\*2 : When +10 dBm output, 21 kHz band width

**Block Diagram**

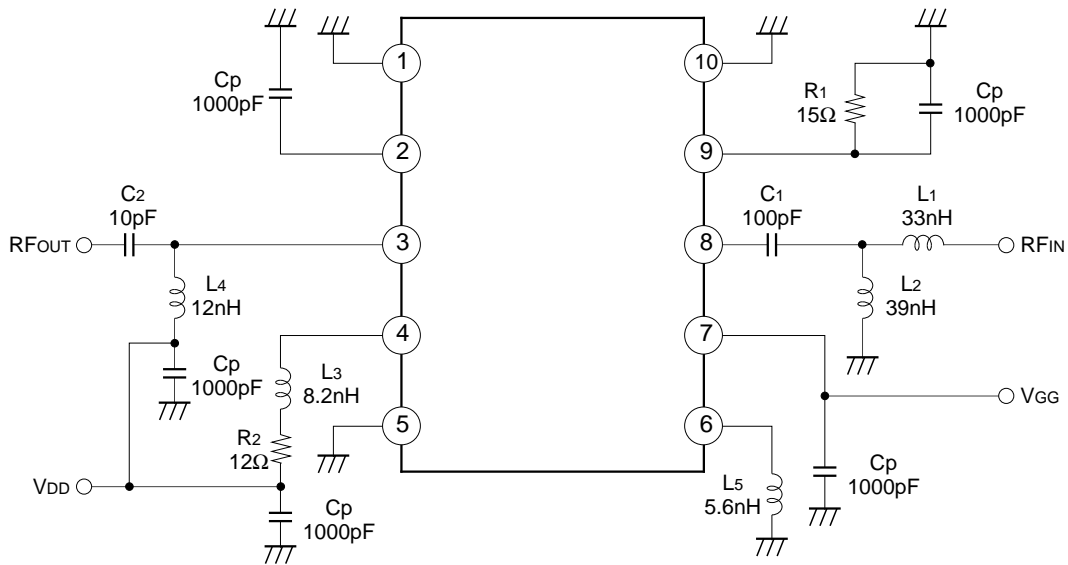


**Package Description/Pin Configuration**

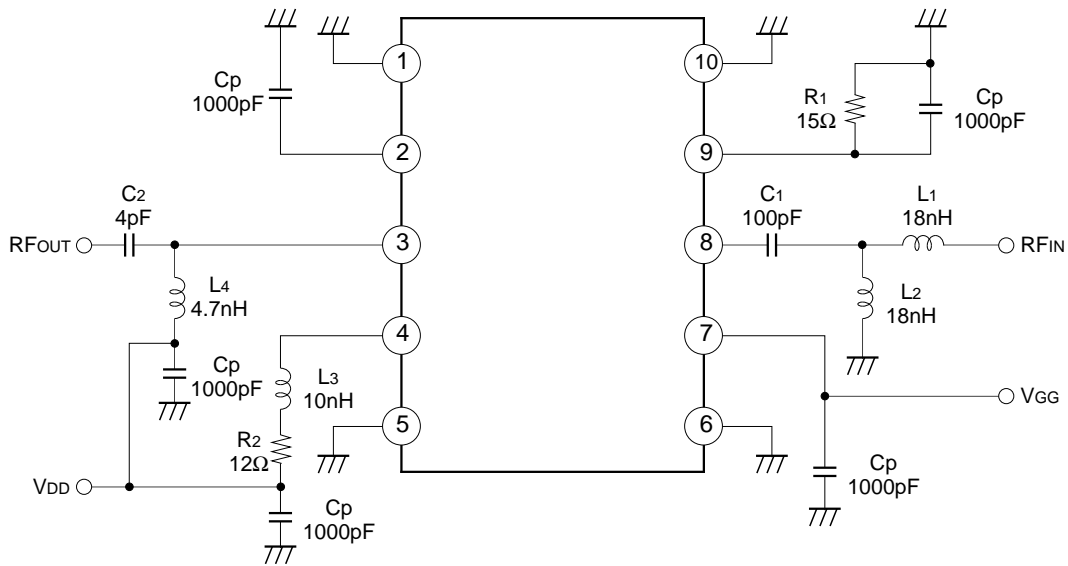


Recommended Circuit

(For 800 MHz)

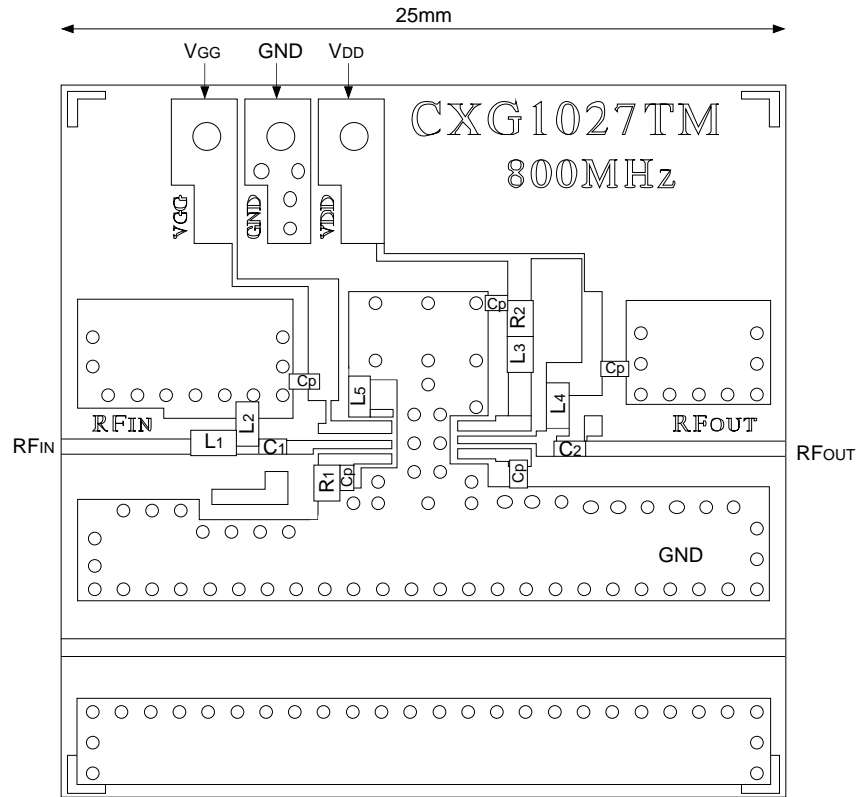


(For 1.5 GHz)

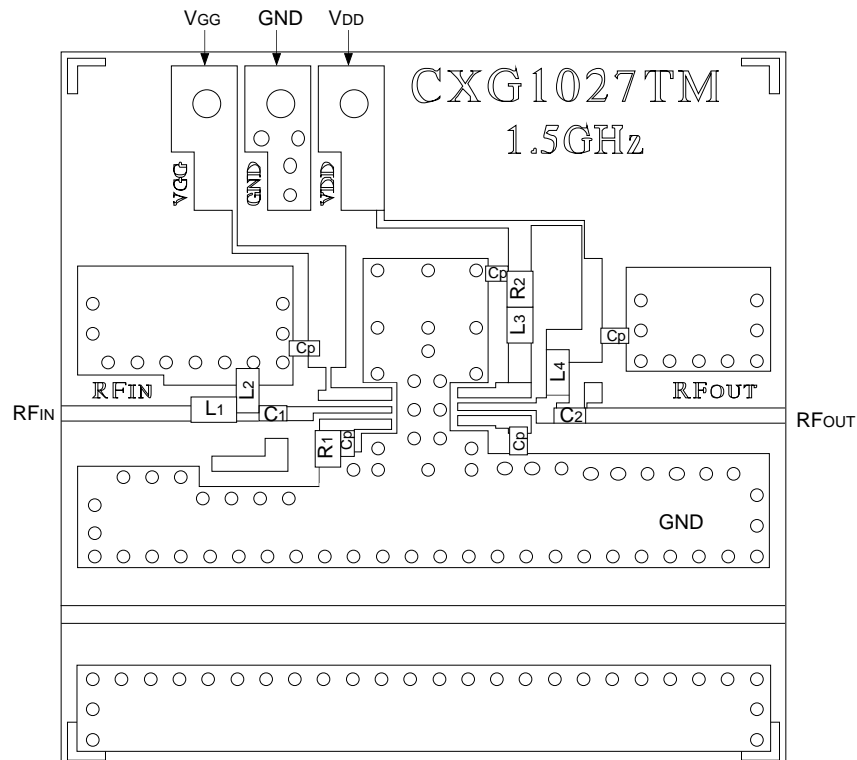


Recommended Evaluation Board

(For 800 MHz)

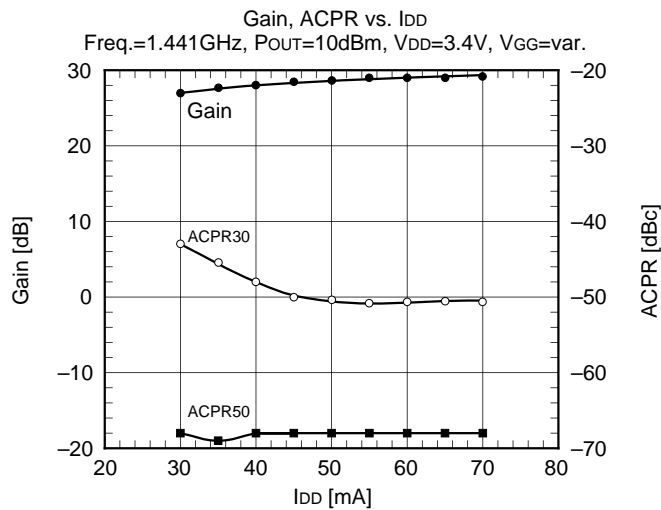
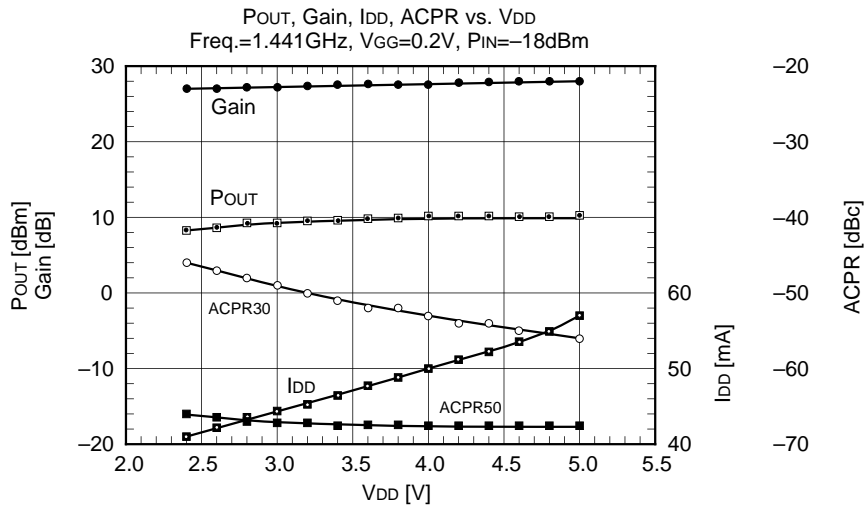
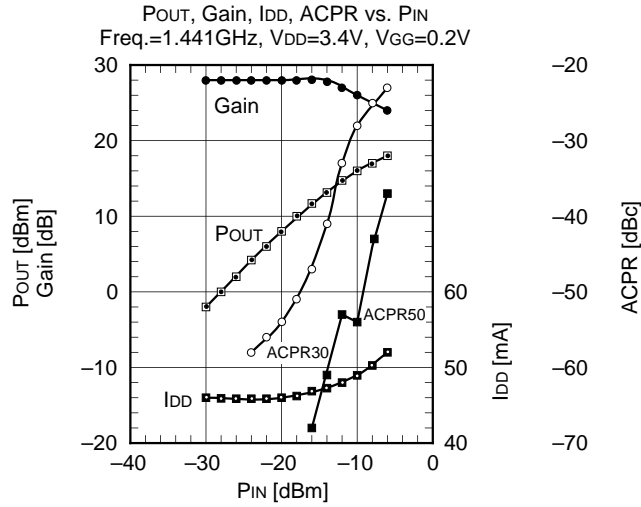


(For 1.5 GHz)



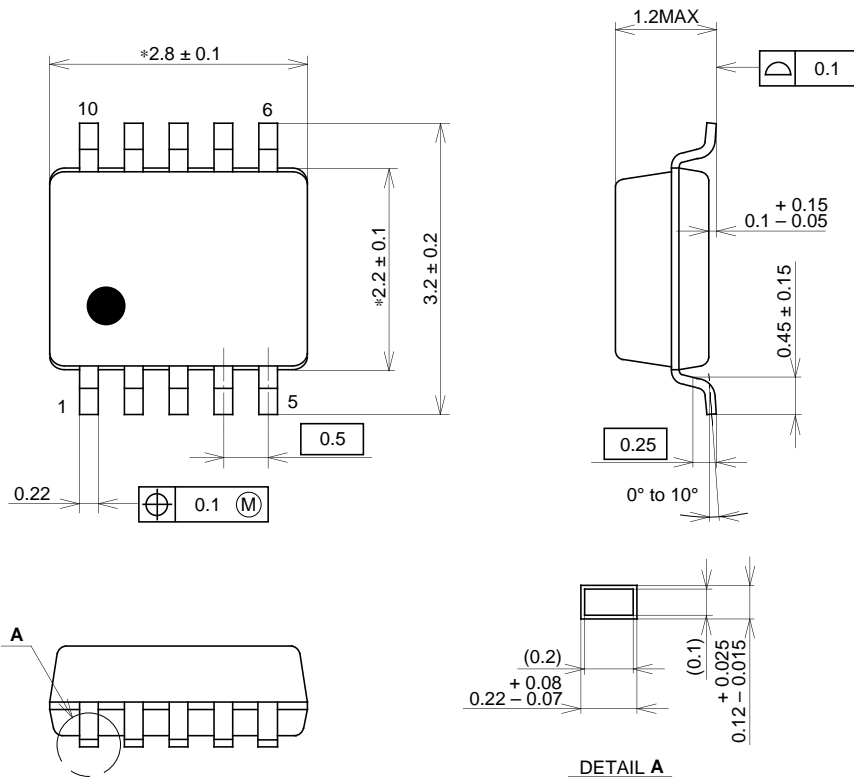
Glass fabric-base epoxy 4-layer board (Thickness : 0.3 mm × 2)  
 GND for the overall 2nd, 3rd and 4th sides

Example of Representative Characteristics (Ta=25 °C)



Package Outline Unit : mm

10PIN TSSOP(PLASTIC)



NOTE: "\*" Dimensions do not include mold protrusion.

PACKAGE STRUCTURE

SONY CODE	TSSOP-10P-L01
EIAJ CODE	_____
JEDEC CODE	_____

PACKAGE MATERIAL	EPOXY RESIN
LEAD TREATMENT	SOLDER PLATING
LEAD MATERIAL	COPPER ALLOY
PACKAGE MASS	0.02g