

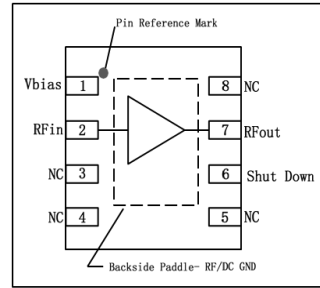
Performance Features

- Single +5V power supply
- 50ohm input & output matching
- 0.55dB NF typical at 1900MHz
- 2x2mm 8PIN DFN Package
- RoHS* compliant
- MSL level 1

Typical Applications

- Repeaters
- Wireless Infrastructure
- LTE/WCDMA/CDMA
- TDD & FDD Systems

Functional Block Diagram



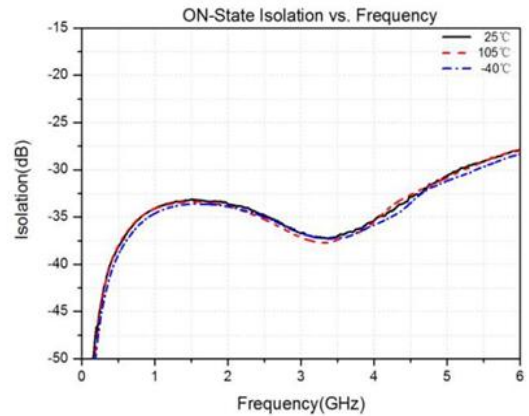
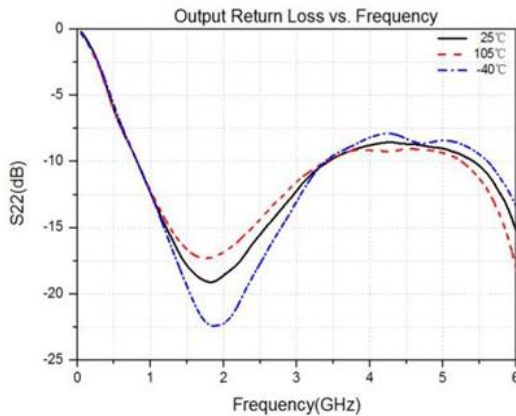
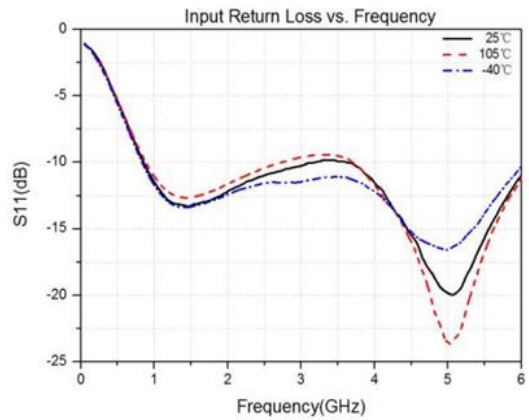
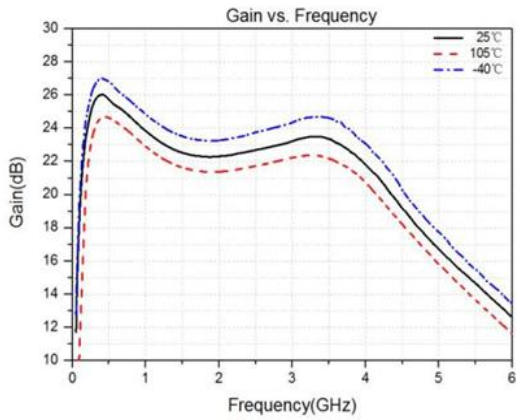
Overview

The CWLA9057 is internally matched using a high performance pHEMT process and only requires few external components for operation from a single positive supply: an external RF choke and blocking/bypass capacitors. This low noise amplifier contains an internal active bias to maintain high performance over temperature and integrates a shut-down biasing capability to allow for operation for TDD applications.

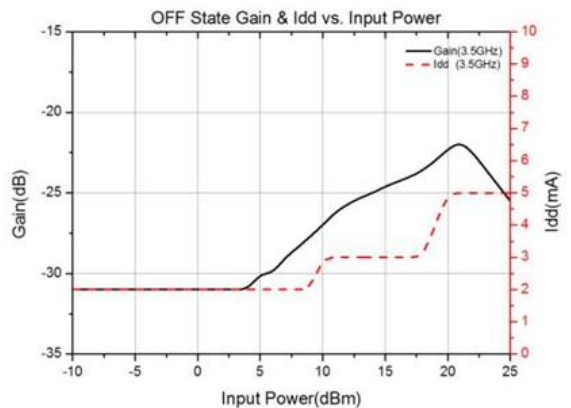
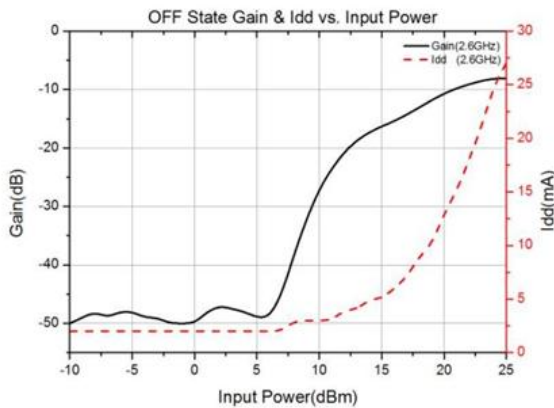
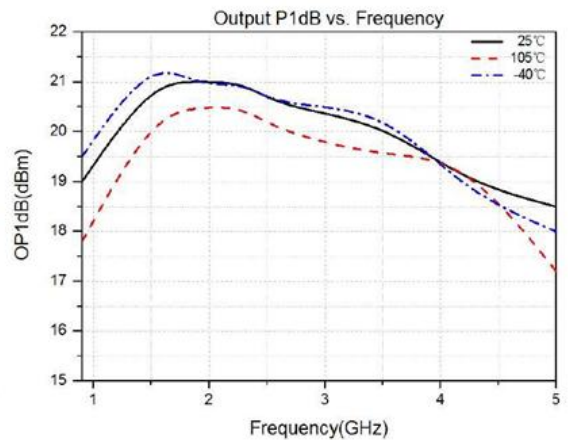
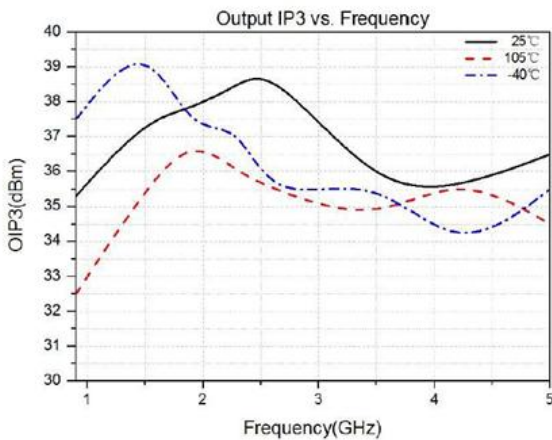
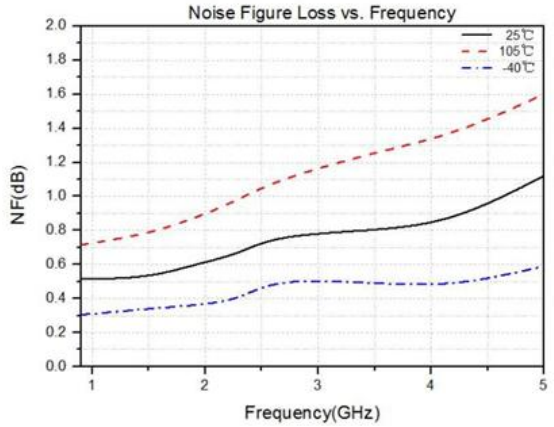
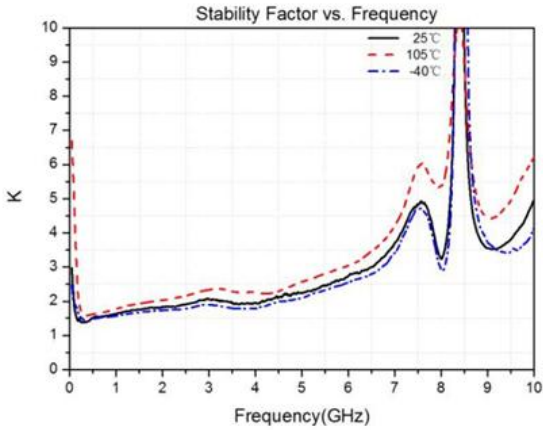
Electrical Specifications: TA = 25° C, Frequency: 600MHz-6000MHz, VDD= 5 V, ZO = 50Ω

Parameter	Test Condition	Unit	Min	Typ.	Max
Frequency		MHz	600	3500	6000
Gain		dB		23.5	
S11		dB		10	
S22		dB		10	
NF	EVB Input loss de-embeded	dB		0.8	
OIP3	Pout=5dBm/Tone, Spacing =1MHz	dBm		35.5	
P1dB		dBm	19	20.2	
Switching OFF Time	50% V _{PD} to 10% RF output	nS		60	
Switching ON Time	50% V _{PD} to 90% RF output	nS		50	
VDD		V		5.0	5.5
IDD		mA		65	

Typical Performance Curves, VDD= 5 V, Z0 = 50Ω



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Absolute maximum rating

Parameter	Absolute Maximum
Voltage	+7V
Operating Temperature	-40°C - +105°C
Storage Temperature	-65°C - +150°C
MSL	JDEC Level 1
RF Input Power	27dBm

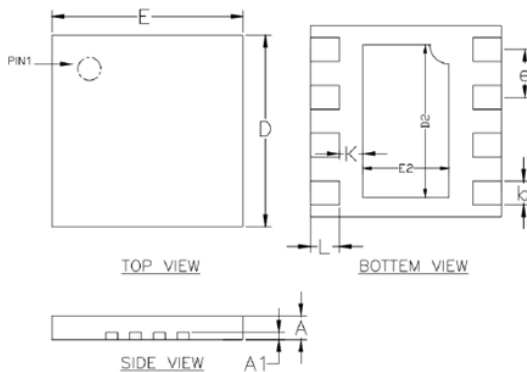
Pin Configuration

Pin No.	Pin Name	Function
1	Vbias	Bias
2	RFin	RF Input
3	N.C	NO Connected
4	N.C	NO Connected
5	N.C	NO Connected
6	Shut Down	TDD Shut Down
7	RFout	RF Output
8	N.C	NO Connected

Electrical Specifications: TA = 25° C, VDD= 5 V, ZO = 50Ω

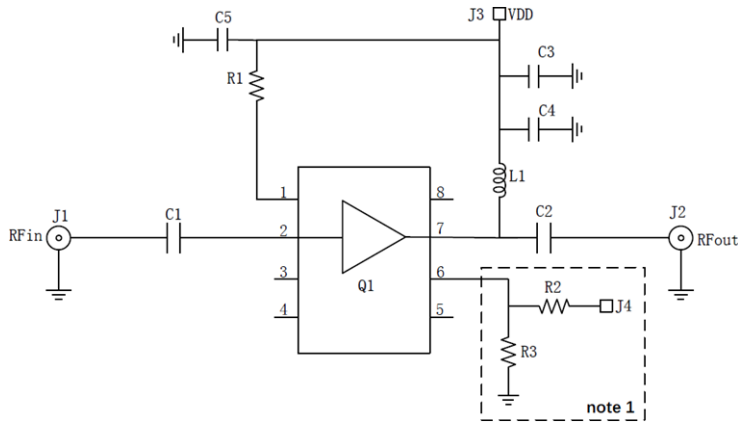
Parameter	Unit	Typical					
Frequency	MHz	900	1900	2300	2600	3500	4800
Gain	dB	24	22.2	22.5	22.5	23.5	17.5
Noise Figure	dB	0.5	0.6	0.66	0.75	0.8	1.1
Input Return Loss	dB	11	12	13	11	10	18
Output Return Loss	dB	11	17	15	14	10	9
P1dB	dBm	19	21	21	21	20.2	18.5
OIP3	dBm	35.5	37.5	38.5	39	35.5	36.5

Package Dimension



	Min	Typ.	Max	Unit
A	0.7	0.75	0.8	mm
A1	0	0.02	0.05	mm
D	1.95	2.0	2.05	mm
E	1.95	2.0	2.05	mm
D2	1.45	1.60	1.70	mm
E2	0.75	0.9	1.0	mm
L	0.2	0.30	0.40	mm
K	0.2	---	---	mm
b	0.2	0.25	0.3	mm
e	---	0.5	---	mm

Schematic Including Off-Chip Components



Notes:

1. For FDD application, R3=10Kohm, or PIN6 tied to GND,

R2=DPN or omitted.

2. For TDD application, R3=10K ohm and R2=0 ohm.

3. R1 set the static current, the current effect the OIP3 and P1dB. Typical value 3.3K ohm setting 65mA at +5V, 2.2K ohm setting 50mA at +3.3V.

CWLA

Amplifier Series

Symbol	Size	Value	Manufacturer	Description
C1、C2	0402	100pF	Murata GRM15	DC Block
C4,C5	0402	100pF	Various	Decoupling
C3	0603	0.1uF	Various	Decoupling
L1	0603	18nH	Murata LQW18	Bias Choke
R1	0603	3.3KΩ	Various	Bias Setting
R2	0603	0Ω	Various	
R3	0603	10KΩ	Various	