

GPS Down Converter

Preliminary

Description

The CXA1951Q is an IC developed as a GPS down converter, featuring low current consumption and small package. This IC is suitable for the mobile GPS (Global Positioning System).

Features

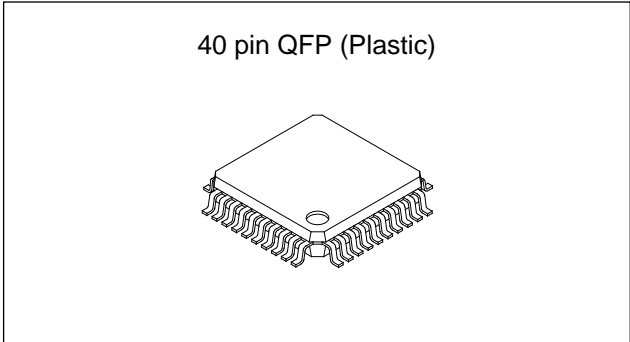
- Includes all functions required for the GPS converter.
- Total gain: 110dB or more
- Operating supply voltage range: 2.7 to 5.5V
- Low current consumption:
I_{cc} = 30mA (Typ. at V_{cc} = 3V)
- Excellent temperature characteristics

Applications

GPS (Global Positioning System)

Structure

Bipolar silicon monolithic IC



Absolute Maximum Ratings (T_a = 25°C)

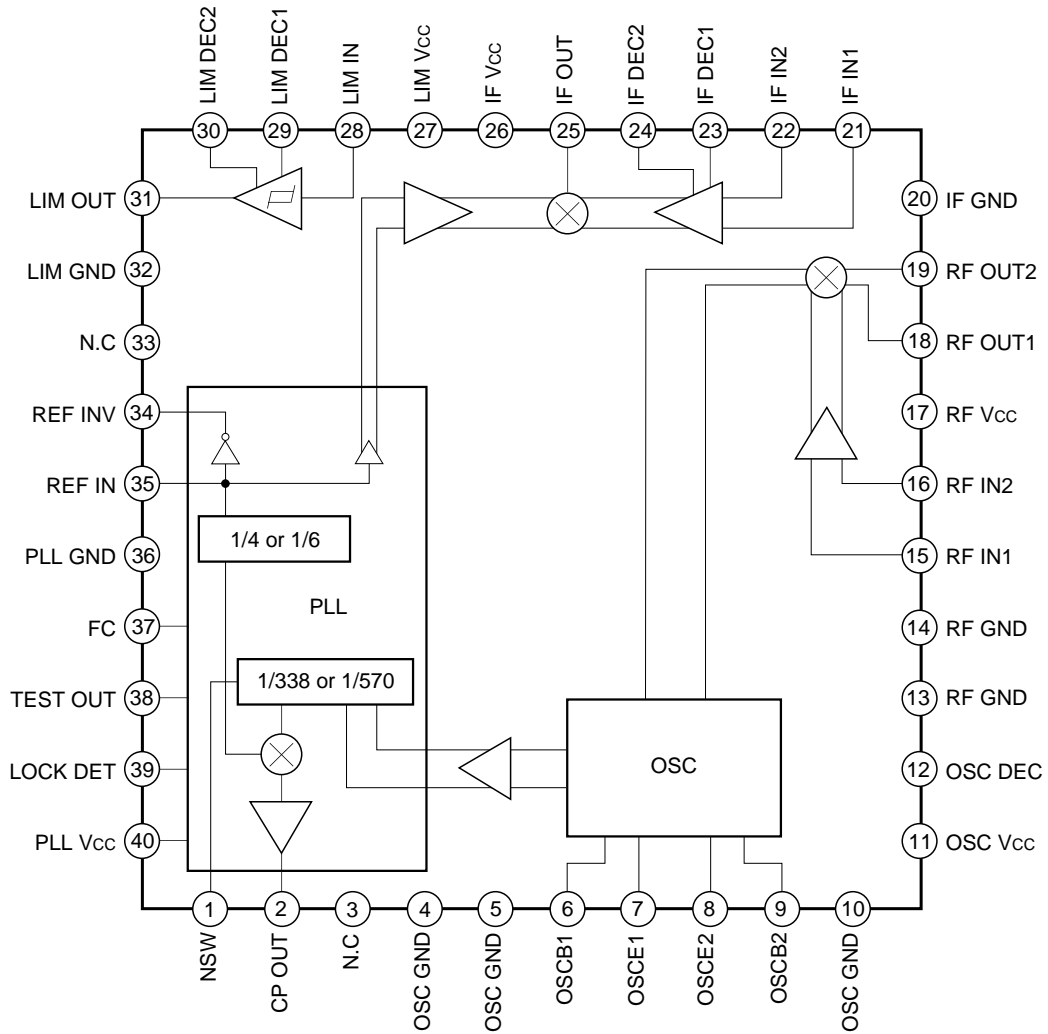
• Supply voltage	V _{CC}	7.0	V
• Operating temperature	T _{opr}	-40 to +85	°C
• Storage temperature	T _{stg}	-65 to +150	°C
• Allowable power dissipation	P _D	200	mW

Operating Conditions

Supply voltage	V _{CC}	2.7 to 5.5	V
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Block Diagram and Pin Configuration

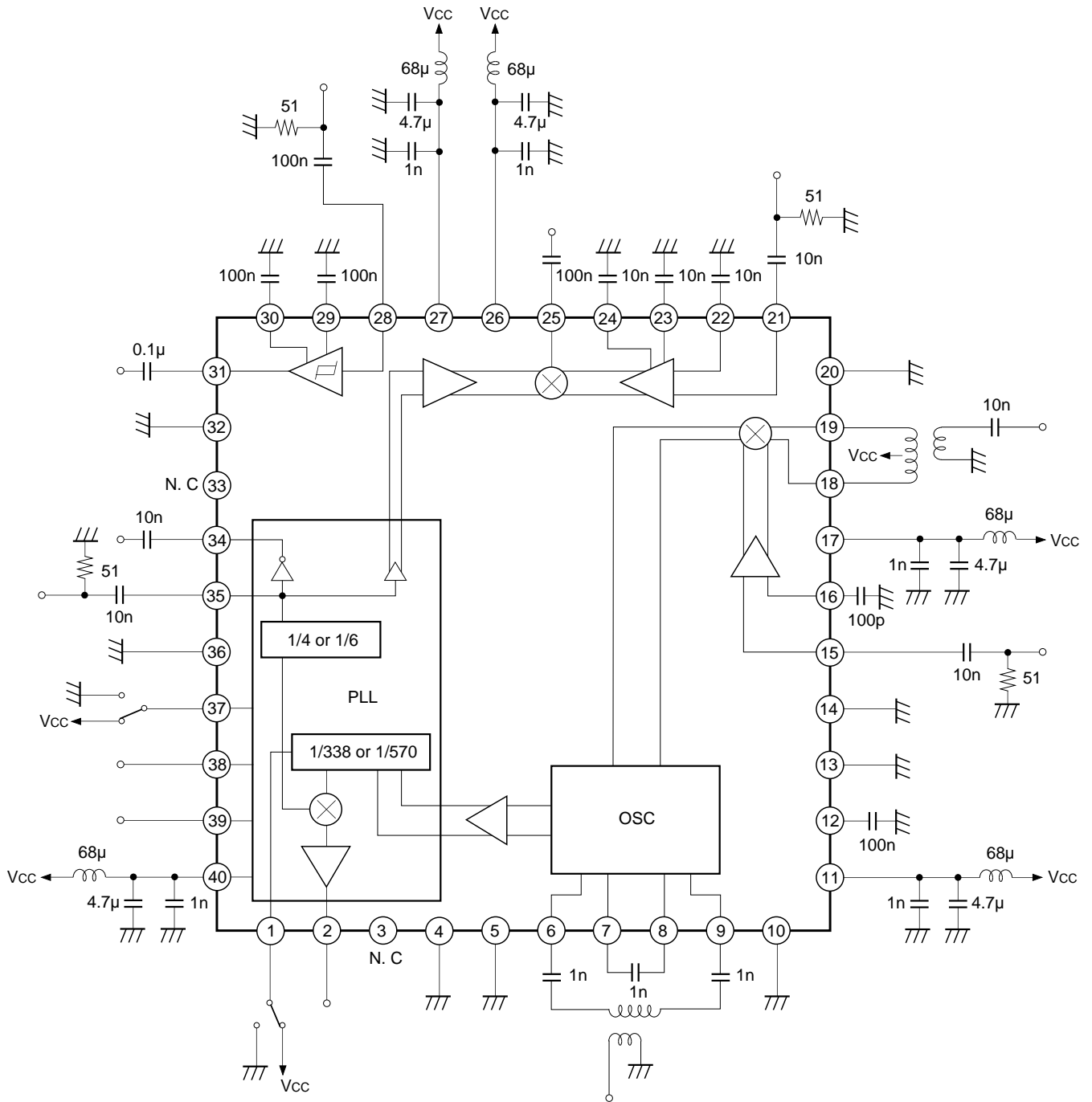


Electrical Characteristics

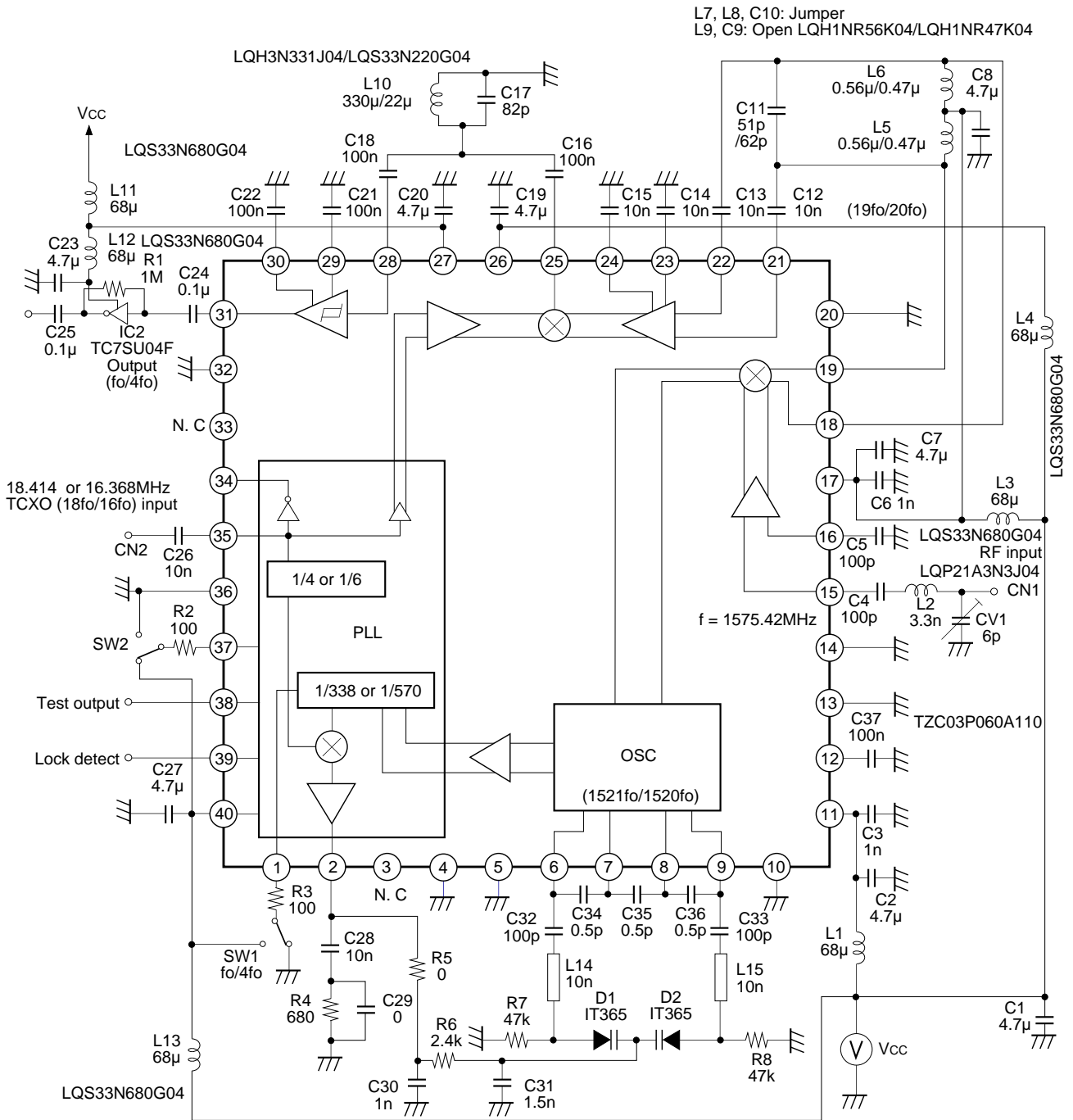
(V_{CC} = 3V, T_a = 25°C)

Item		Symbol	Measurement conditions	Min.	Typ.	Max.	Unit
Current consumption		I _{CC}			30		mA
Front-end conversion gain		CG _{mix1}	f _{in} = 1575.42MHz		21		dB
IF amplifier band width		BW _{if}			41		MHz
2nd mixer conversion gain		CG _{mix2}			30		dB
Limiter gain		PGL _{im}			67		dB
Limiter output level		Vol _{im}			0.8		V _{p-p}
1st IF output impedance		Zo _{mix1}			1		kΩ
1st IF input impedance		Zi _{mix2}			1		kΩ
2nd IF output impedance		Zo _{mix2}			1		kΩ
Limiter input impedance		Zi _{lim}			1		kΩ
FC	Input High current	I _{IH}			30		μA
	Input Low current	I _{IL}			30		μA
NSW	Input High current	IFC _{in}			30		μA
	Input Low current	IFC _{in}			30		μA
Charge pump output current	High	I _{OH}				-1	mA
	Low	I _{OL}		1			mA
LOCK DET output voltage	High	V _{OH}	I _{RL} = 0.1mA	2			V
	Low	V _{OL}	I _{RL} = 0.1mA			500	mV

Electrical Characteristics Measurement Circuit



Application Circuit



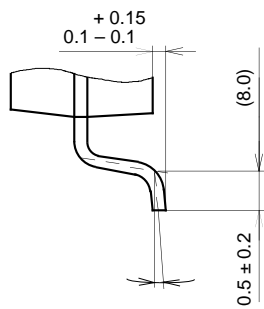
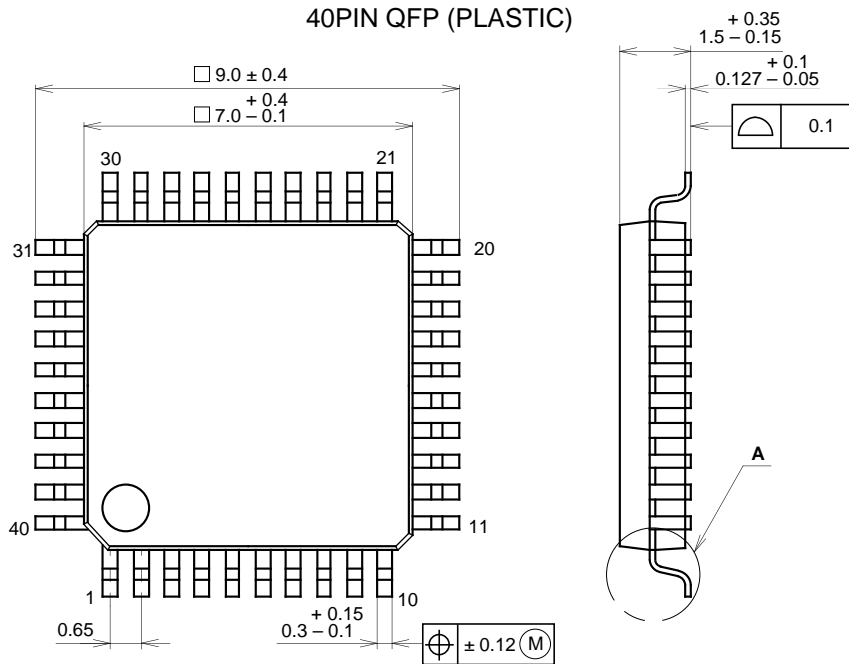
Notice: Two component values are indicated, the order is depending on the output frequency.
The first value is as for 'fo output' and the second value is as for '4fo output'.

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Package Outline

Unit: mm

40PIN QFP (PLASTIC)



DETAIL A

SONY CODE	QFP-40P-L01
EIAJ CODE	*QFP040-P-0707
JEDEC CODE	_____

PACKAGE STRUCTURE

PACKAGE MATERIAL	EPOXY RESIN
LEAD TREATMENT	SOLDER / PALLADIUM PLATING
LEAD MATERIAL	COPPER / 42 ALLOY
PACKAGE WEIGHT	0.2g