

MAIN FEATURES

- 10-bit resolution.
- 2 GSPS sampling rate.
- 3 GHz full power input bandwidth.
- Band flatness: ± 0.2 dB (from DC up to 1.5 GHz).
- Very low input VSWR : 1.15 max from DC to 2GHz (packaged device).
- Phase error: 0.2° (from 750MHz to 1.5GHz)
- Power consumption : 4.6 W.
- SFDR= 59 dBc ; 7.6 Effective Bits @ $F_s = 1.4$ GSPS, $F_{IN} = 700$ MHz [-1dBFS].
- SFDR = 52dBc ; 7.2 Effective Bits @ $F_s = 1.4$ GSPS, $F_{IN} = 1950$ MHz [-1dBFS].
- SFDR= 56 dBc ; 6.4 Effective Bits @ $F_s = 2$ GSPS, $F_{IN} = 950$ MHz [-1dBFS].
- DNL = ± 1.1 LSB, INL = ± 2.3 LSB.
- Low Bit Error Rate (10^{-12}) @ 2 GSPS and $T_j = 110^\circ\text{C}$
- 500 mVpp differential 100Ω or single-ended 50Ω ($\pm 1\%$) analog inputs.
- Differential 100Ω or single-ended 50Ω ECL compatible clock inputs.
- ECL or LVDS output compatibility.
- 50Ω differential outputs with common mode independent on temperature.
- Data ready output with asynchronous reset.
- Out-of-Range output bit.
- Gray or Binary selectable output data ; NRZ output mode.
- Pattern generator output (for acquisition system monitoring).
- ADC gain adjust.
- Sampling delay adjust.
- Offset control capability.
- Radiation tolerance oriented design (more than 100Krad (Si) expected).

APPLICATION

- Direct RF down conversion.
- Wide band satellite receiver.
- High speed instrumentation.
- High speed acquisition systems.
- High energy physics.
- Automatic test equipment.

SCREENING

- Standard die flow
- Package Temperature range : To be defined

DESCRIPTION

The TS83102G0 is a monolithic 10-bit analog-to-digital converter, designed for digitizing wide bandwidth analog signals at very high sampling rates of up to 2 Gsps.

The TS83102G0 is using an innovative architecture, including an on-chip Sample and Hold (S/H), and is fabricated with an advanced high speed bipolar SiGe heterojunction process, featuring 75GHz cutoff frequency.

The 3 GHz full power input bandwidth and the band flatness performances enables the digitizing of high IF and large bandwidth signals.



CBGA 148 Packaged device



ADC 10-bit 2 Gsps Converter

TS83102G0

1/ CBGA148 down
TS83102G0CGL

2/ Die form : JTS83102G0

3/ Hermetic ceramic package :
to be defined on request

4/ DMUX 10 bit 1:4/1:8 2Gsps
TS81102G0 :
Companion device available

5/ CBGA package Evaluation
Board TSEV83102G0GL