## General Description

SSF103 is a small 8pin DFN packaged customized ASIC with configurable parameters. It supports frequency division and in-phase output function.

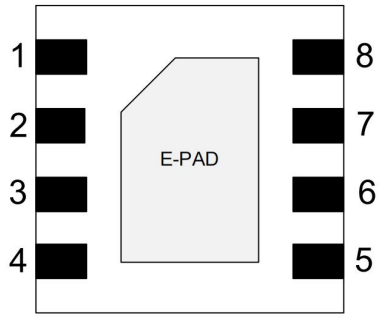
## Features

- Power supply input: 2.3V~5.5V
- OUT1, 1x Push Pull Digital Output, 24.576Mhz output
- OUT2, 1x Push Pull Digital Output, 3.072Mhz output
- GND Power Ground
- OUT3, 1x Push Pull Digital Output 48Khz output
- NC Not Connected, Internal pull-down 1M
- IN Digital input with Schmitt, Internal pull-down 1M，24.576Mhz input
- DFN - 8 Package

## Applications

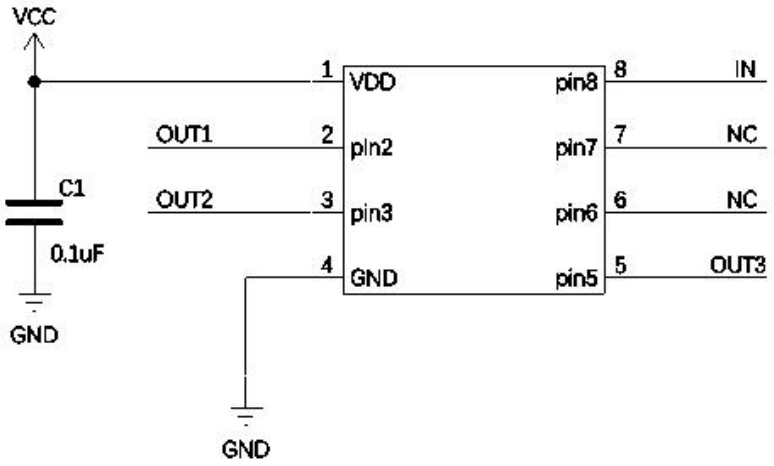
- Ultra low power consumption
- Pb - Free and RoHS Compliant and Halogen - Free

## Pin Configurations




**2.0mm x 2.0mm 8 Pin DFN**
**Top View**

## Block Diagram




Note:

1. Voltage on any pin must be with in GND to VDD.

2. ESD protect is must be considered on all Pins which connected to external interface.

## Pin name

| Pin | Pin | TYPE | Function |
|---|---|---|---|
| 1 | VDD | Power | Power supply input, 2.3V~5.5V |
| 2 | OUT1 | 1x Push Pull Digital Output | 24.576Mhz output. |
| 3 | OUT2 | 1x Push Pull Digital Output | 3.072Mhz output. |
| 4 | GND | Power | Ground |
| 5 | OUT3 | 1x Push Pull Digital Output | 48Khz output. |
| 6 | NC | Not Connected | Internal pull-down 1M |
| 7 | NC | Not Connected | Internal pull-down 1M |
| 8 | IN | Digital input with Schmitt | Internal pull-down 1M, 24.576Mhz input. |

## Absolute Maximum Ratings

| Parameter | Min. | Max. | Unit |
|---|---|---|---|
| Supply Voltage on VDD to GND | -0.3 | 7 | V |
| Maximum Voltage Input to Pins | -0.3 | 7 | V |
| VDD to GND Maximum DC Current | -- | 90 | mA |
| Input Leakage Current | -- | 1000 | nA |
| Storage Temperature Range | -65 | 150 | ℃ |
| Junction Temperature | -- | 150 | ℃ |
| ESD Protection (HBM) | 2000 | -- | V |
| ESD Protection (CDM) | 500 | -- | V |
| Moisture Sensitivity Level (MSL) | 1 | | |

## Customize Electrical Characteristics

VDD =3.3V±10%, Temp=25°C

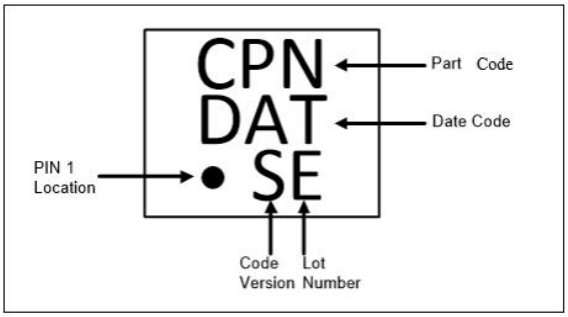
| Symbol | Parameter | Condition/Note | Min. | Typ. | Max. | Unit |
|---|---|---|---|---|---|---|
| $I_Q$ | Quiescent Current | Static inputs and floating outputs | | 0.1 | | μA |

## Electrical Characteristics

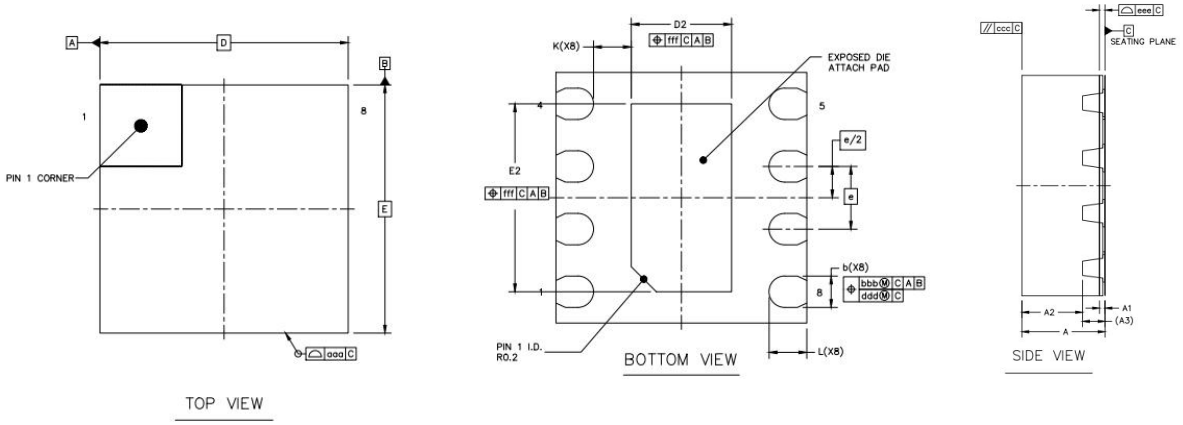
VDD =3.3V±10%, Temp: -40~85°C

| Symbol | Parameter | Condition/Note | Min. | Typ. | Max. | Unit |
|---|---|---|---|---|---|---|
| $V_{DD}$ | Supply Voltage | | 1.71 | 3.3 | 5.5 | V |
| $T_A$ | Operating Temperature | | -40 | 25 | 85 | °C |
| $C_{VDD}$ | Capacitor Value at VDD | | -- | 0.1 | -- | µF |
| $I_{IH}$ | HIGH-Level Input Current | Logic Input PINs; $V_{IN}$ = VDD | -1.0 | -- | 1.0 | µA |
| $I_{IL}$ | LOW-Level Input Current | Logic Input PINs; $V_{IN}$ = 0V | -1.0 | -- | 1.0 | µA |
| **POR** | | | | | | |
| $PON_{THR}$ | Power On Threshold | VDD Level Required to Start Up | 1.67 | 1.80 | 1.92 | V |
| $POFF_{THR}$ | Power Off Threshold | VDD Level Required to Switch Off | 0.95 | 1.25 | 1.54 | V |
| $T_{SU}$ | Startup Time | From VDD rising past $PON_{THR}$ | -- | 1.2 | 1.6 | mS |
| $I_{stand\_by}$ | | T=+25℃ | -- | 97 | -- | nA |
| **IO PIN** | | | | | | |
| $V_{IH}$ | HIGH-Level Input Voltage | Logic Input | 1.90 | -- | -- | V |
| | | Logic Input with Schmitt Trigger | 2.11 | -- | -- | V |
| | | Low-Level Logic Input | 0.92 | -- | -- | V |
| $V_{IL}$ | LOW-Level Input Voltage | Logic Input | -- | -- | 1.30 | V |
| | | Logic Input with Schmitt Trigger | -- | -- | 1.16 | V |
| | | Low-Level Logic Input | -- | -- | 0.77 | V |
| $V_{HYS}$ | SchmittTrigger Hysteresis Voltage | Logic Input with Schmitt Trigger | -- | 0.45 | -- | V |
| $I_{LKG}$ | Input leakage (Absolute Value) | | -- | 1 | 1000 | nA |
| $V_{OH}$ | HIGH-Level Outpu Voltage | Push-Pull, $I_{OH}$ = 3 mA, 1X Drive | 2.60 | -- | -- | V |
| | | Push-Pull, $I_{OH}$ = 3 mA, 2X Drive | 2.80 | -- | -- | V |
| $V_{OL}$ | LOW-Level Output Voltage | Push-Pull, $I_{OL}$= 3 mA, 1X Drive | -- | -- | 0.25 | V |
| | | Push-Pull, $I_{OL}$ = 3 mA, 2X Drive | -- | -- | 0.22 | V |
| | | Open Drain, $I_{OL}$ = 3 mA, 1X Drive | -- | -- | 0.12 | V |
| | | Open Drain, $I_{OL}$ = 3 mA, 2X Drive | -- | -- | 0.089 | V |
| $I_{OH}$ | HIGH-Level Output Pulse Current (see Note) | Push-Pull, $V_{OH}$ = 2.4 V , 1X Drive | 5 | -- | -- | mA |
| | | Push-Pull, $V_{OH}$ = 2.4 V, 2X Drive | 10 | -- | -- | mA |
| $I_{OL}$ | LOW-Level Output Pulse Current (see Note) | Push-Pull, $V_{OL}$ = 0.4 V, 1X Drive | 5 | -- | -- | mA |
| | | Push-Pull, $V_{OL}$ = 0.4 V, 2X Drive | 10 | -- | -- | mA |
| | | Open Drain, $V_{OL}$ = 0.4 V, 1X Drive | 15 | -- | -- | mA |
| | | Open Drain, $V_{OL}$ = 0.4 V, 2X Drive | 30 | -- | -- | mA |
| Note: DC or average current through any pin should not exceed value given in Absolute Maximum Conditions. | | | | | | |

## Package Top Marking




## Package Drawing and Dimensions




| | | SYMBOL | MIN | NOM | MAX |
|---|---|---|---|---|---|
| TOTAL THICKNESS | | A | 0.7 | 0.75 | 0.8 |
| STAND OFF | | A1 | 0 | 0.02 | 0.05 |
| MOLD THICKNESS | | A2 | --- | 0.55 | --- |
| L/F THICKNESS | | A3 | | 0.203 REF | |
| LEAD WIDTH | | b | 0.2 | 0.25 | 0.3 |
| BODY SIZE | X | D | | 2 BSC | |
| | Y | E | | 2 BSC | |
| LEAD PITCH | | e | | 0.5 BSC | |
| EP SIZE | X | D2 | 0.7 | 0.8 | 0.9 |
| | Y | E2 | 1.4 | 1.5 | 1.6 |
| LEAD LENGTH | | L | 0.2 | 0.3 | 0.4 |
| LEAD TIP TO EXPOSED PAD EDGE | | K | | 0.3 REF | |
| PACKAGE EDGE TOLERANCE | | aaa | | 0.1 | |
| MOLD FLATNESS | | ccc | | 0.1 | |
| COPLANARITY | | eee | | 0.05 | |
| LEAD OFFSET | | bbb | | 0.1 | |
| | | ddd | | 0.05 | |
| EXPOSED PAD OFFSET | | fff | | 0.1 | |
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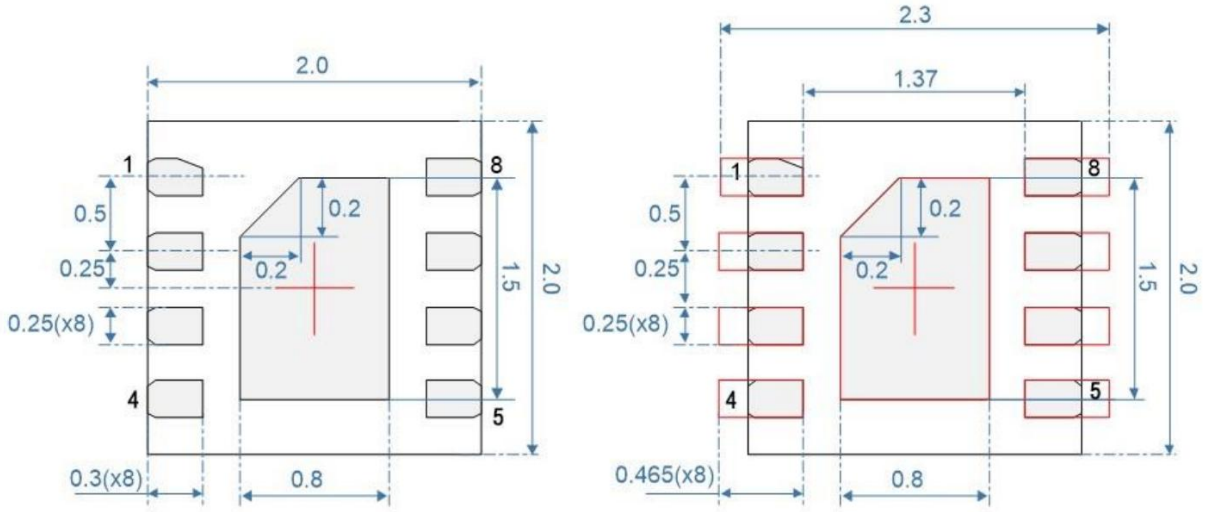
## Recommended Land Patter

Unit: mm



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