

# Wireless Audio Link IC

## BH1417F

The BH1417F is a FM stereo transmitter IC that transmits simple configuration. The IC consists of a stereo modulator for generating stereo composite signals and a FM transmitter for broadcasting a FM signal on the air. The stereo modulator generates a composite signal which consists of the MAIN, SUB, and pilot signal from a 38kHz oscillator. The FM transmitter radiates FM wave on the air by modulating the carrier signal with a composite signal. Frequency is set for North America.

### ●Applications

Wireless speakers, Personal computer(sound board), Game machine, CD changer, Car TV, Car navigation

### ●Features

- 1) It is possible to improve the timbre because it has the pre-emphasis circuit, limiter circuit, and the low-pass filter circuit.
- 2) Built-in pilot-tone system FM stereo modulator circuit.
- 3) The transmission frequency is stable because it has a PLL system FM transmitter circuit.
- 4) PLL controls data input in parallel (4bits, 14ch for North America).

### ●Absolute maximum ratings (Ta = 25°C, In measurement circuit.)

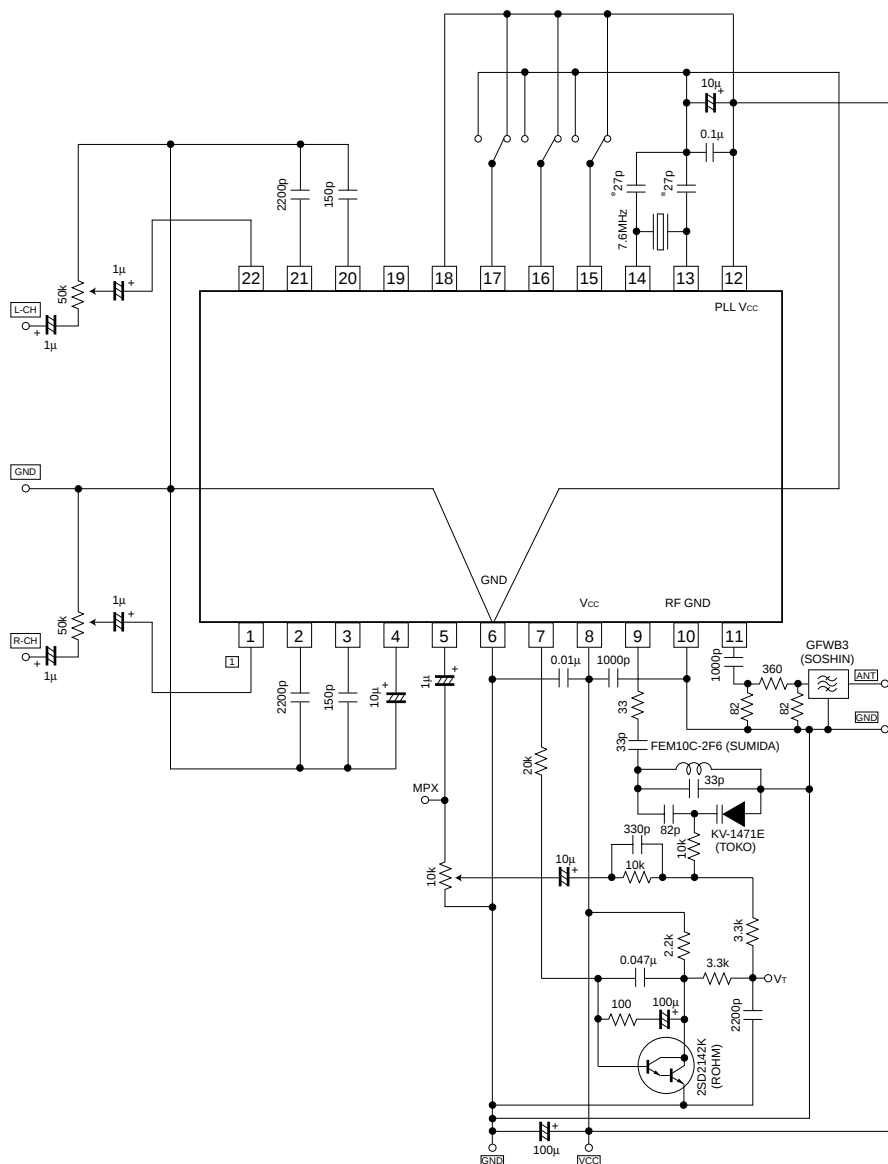
| Parameter                       | Symbol             | Limits                       | Unit | Conditions     |
|---------------------------------|--------------------|------------------------------|------|----------------|
| Supply voltage                  | V <sub>CC</sub>    | +7.0                         | V    | Pin8,12        |
| Data input voltage              | V <sub>IN-D</sub>  | -0.3 to V <sub>CC</sub> +0.3 | V    | Pin15,16,17,18 |
| Phase comparator output voltage | V <sub>OUT-P</sub> | -0.3 to V <sub>CC</sub> +0.3 | V    | Pin7           |
| Power dissipation               | P <sub>d</sub>     | 450*                         | mW   |                |
| Storage temperature             | T <sub>stg</sub>   | -55 to +125                  | °C   |                |

\* Derating : 4.5mW/°C for operation above Ta=25°C.

### ●Recommended operating conditions (Ta = 25°C)

| Parameter                                | Symbol            | Min.               | Typ. | Max.               | Unit | Conditions     |
|------------------------------------------|-------------------|--------------------|------|--------------------|------|----------------|
| Operating supply voltage                 | V <sub>CC</sub>   | 4.0                | —    | 6.0                | V    | Pin8,12        |
| Operating temperature                    | T <sub>opr</sub>  | -40                | —    | +85                | °C   |                |
| Audio input level                        | V <sub>IN-A</sub> | —                  | —    | -10                | dBV  | Pin1,22        |
| Audio input frequency band               | f <sub>IN-A</sub> | 20                 | —    | 15k                | Hz   | Pin1,22        |
| Pre-emphasis time constant set up range  | τ <sub>PRE</sub>  | —                  | —    | 155                | μs   | Pin2,21        |
| Transmission frequency(200kHz step)      | f <sub>TX</sub>   | 87.7<br>106.7      | —    | 88.9<br>107.9      | MHz  | Pin9,11        |
| Control terminal "H" level input voltage | V <sub>IH</sub>   | 0.8V <sub>CC</sub> | —    | V <sub>CC</sub>    | V    | Pin15,16,17,18 |
| Control terminal "L" level input voltage | V <sub>IL</sub>   | GND                | —    | 0.2V <sub>CC</sub> | V    | Pin15,16,17,18 |

## US BAND (88.0MHz~89.2MHz)



The drawing illustrates the mechanical specifications of an SOP22 package. The top view shows a rectangular body with a width of  $13.6 \pm 0.2$  and a height of  $7.8 \pm 0.3$ . The pin pitch is  $5.4 \pm 0.2$ . Pin 1 is located at the bottom-left corner, and pin 22 is at the top-right corner. The side view shows a maximum height of  $1.8 \pm 0.1$  and a base thickness of  $0.11$ . The detail view of the pins shows a pin width of  $1.27$ , a pin thickness of  $0.4 \pm 0.1$ , and a fillet radius of  $0.1$ . The pin length is specified as  $0.15 \pm 0.1$  with a minimum length of  $0.3 \text{ Min.}$ .

### Notes

- No technical content pages of this document may be reproduced in any form or transmitted by any means without prior permission of ROHM CO.,LTD.
- The contents described herein are subject to change without notice. The specifications for the product described in this document are for reference only. Upon actual use, therefore, please request that specifications to be separately delivered.
- Application circuit diagrams and circuit constants contained herein are shown as examples of standard use and operation. Please pay careful attention to the peripheral conditions when designing circuits and deciding upon circuit constants in the set.
- Any data, including, but not limited to application circuit diagrams information, described herein are intended only as illustrations of such devices and not as the specifications for such devices. ROHM CO.,LTD. disclaims any warranty that any use of such devices shall be free from infringement of any third party's intellectual property rights or other proprietary rights, and further, assumes no liability of whatsoever nature in the event of any such infringement, or arising from or connected with or related to the use of such devices.
- Upon the sale of any such devices, other than for buyer's right to use such devices itself, resell or otherwise dispose of the same, no express or implied right or license to practice or commercially exploit any intellectual property rights or other proprietary rights owned or controlled by
- ROHM CO., LTD. is granted to any such buyer.
- Products listed in this document use silicon as a basic material.  
Products listed in this document are no antiradiation design.

The products listed in this document are designed to be used with ordinary electronic equipment or devices (such as audio visual equipment, office-automation equipment, communications devices, electrical appliances and electronic toys).

Should you intend to use these products with equipment or devices which require an extremely high level of reliability and the malfunction of which would directly endanger human life (such as medical instruments, transportation equipment, aerospace machinery, nuclear-reactor controllers, fuel controllers and other safety devices), please be sure to consult with our sales representative in advance.

#### About Export Control Order in Japan

Products described herein are the objects of controlled goods in Annex 1 (Item 16) of Export Trade Control Order in Japan.

In case of export from Japan, please confirm if it applies to "objective" criteria or an "informed" (by MITI clause) on the basis of "catch all controls for Non-Proliferation of Weapons of Mass Destruction.