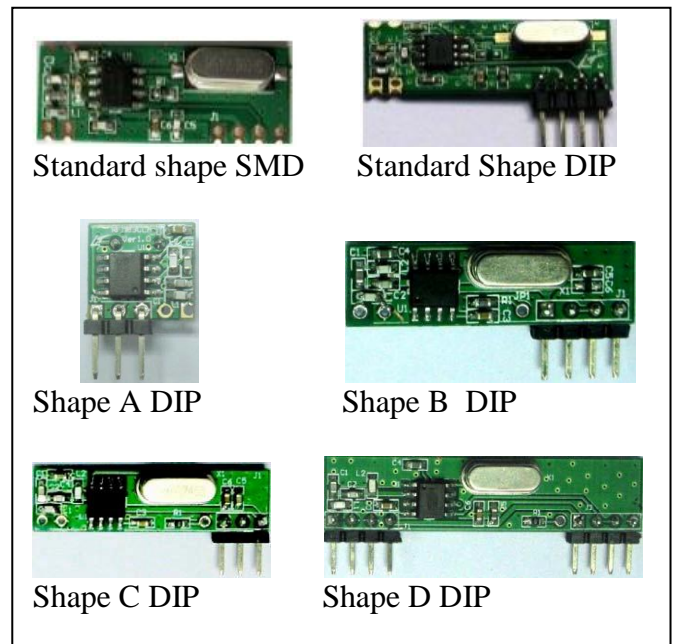


RFM83C Series ASK/OOK Super-heterodyne receiver module

1. General Information

RFM83C series module are low cost super-heterodyne receiver module based on RF83C chip, working at frequency 315Mhz and 433.92Mhz(We can customize other frequency 300Mhz and 440Mhz). The operating voltage is 2.1V-3.6V(RFM83CL) and 3.6V-5.5V(RFMC83). There are 5 pinout shapes for options: standad shape, Shape A, Shape B, Shape C and Shape D. The standard shape has Enable(SHUT)function, which enable module to switch between work status and sleep status, other shape modules don't have this function. This module features stable RF performance, low power consumption, high sensibility, cost-effective, widely applied in various types of data transmission system.



(This datasheet only describes the basic functions and Electrical Characteristics of the module. For more details , please refer to the RF83C chip datasheet .)

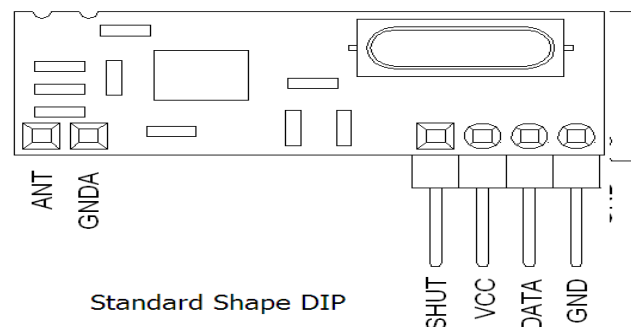
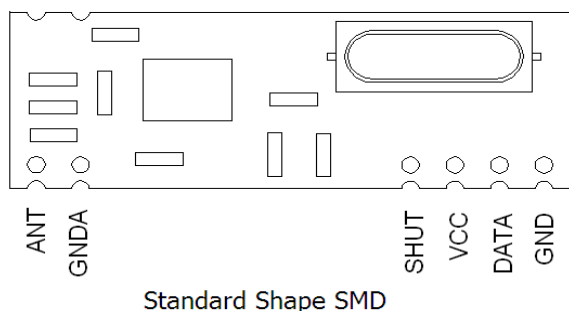
2. Main Features

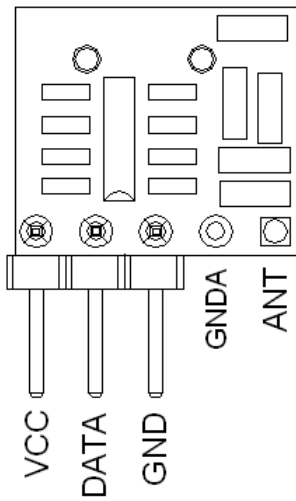
- Low cost, low power consumption, Cost-effective
- Transmission Data Rate: 0.3-2.5KHz
- The operating voltage: RFM83C :3.6V-5.5V
RFM83CL:2.1V-3.6V
- The operating current: 3mA@RFM83C 315MHZ
- Sleep current: ≤0.9uA
- Sensibility:-108dBm
- The operating frequency:315MHZ, 433.92MHZ
- SMD(only for standard shape module) and DIP Package

3. Applications

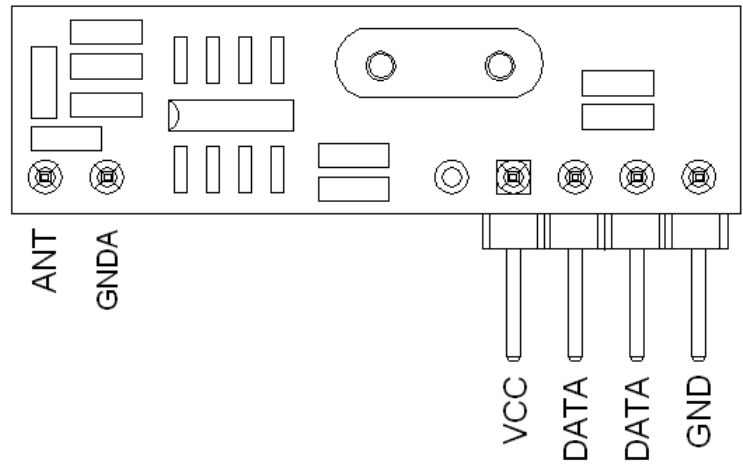
- Wireless data transmission
- Home Automation
- Remote Alarm System

4. Pin definition

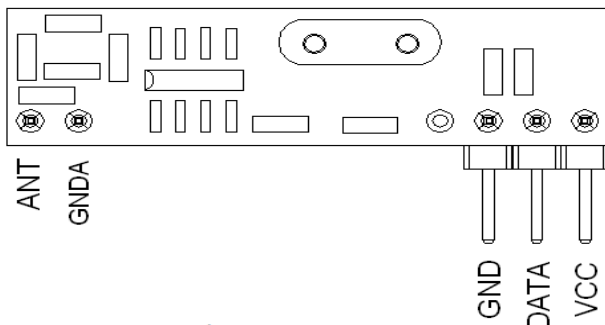




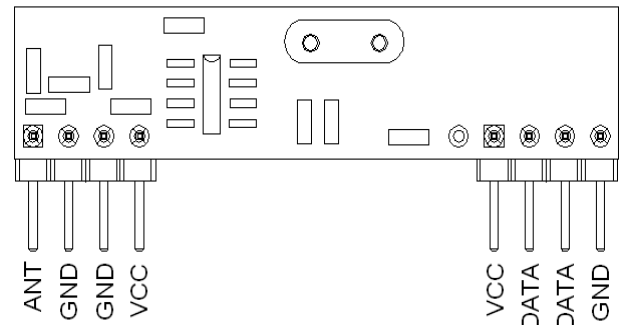
A Shape DIP



B Shape DIP



C Shape DIP



D Shape DIP

| Pin Name | Pin definition |
|----------|---|
| ANT | RF signal input pin, connect antenna |
| GND | connect with negative |
| GNDA | unconnected or connect with negative |
| SHUT | Enable pin, when low logic level, the module work, when high logic level, the module sleep. (only standard shape module has this function.) |
| VCC | Connect with Positive |
| DATA | Data output pin |

5. Electrical Characteristics

| Parameter | Condition | Min. | Typical | Max. | Unit |
|------------------------|------------------------------------|------|---------|------|------|
| Operating Voltage (DC) | RFM83C (A, B, C, D) | 3.6 | 5 | 5.5 | V |
| | RFM83CL (A, B, C, D) | 2.1 | 3 | 3.6 | V |
| Operating Current | RFM83C (A, B, C, D) /5V/315MHz | | 3 | 4 | mA |
| | RFM83C (A, B, C, D) /5V/433.92MHz | | 5 | 6 | mA |
| | RFM83CL (A, B, C, D) /3V/315MHz | | 2.2 | 3.2 | mA |
| | RFM83CL (A, B, C, D) /3V/433.92MHz | | 3.2 | 4.2 | mA |
| Sleep current | | | 3 | | uA |
| Operating Frequency | RFM83C (A, B, C, D) -315 | | 315 | | MHz |
| | RFM83CL (A, B, C, D) -315 | | | | |
| | RFM83C (A, B, C, D) -433 | | 433.92 | | MHz |
| | RFM83CL (A, B, C, D) -433 | | | | |
| Sensitivity | 315MHz Data Rate 1K | | -108 | | dBm |
| | 433.92MHz Data Rate 1K | | -108 | | dBm |
| Receive bandwidth | | | 300 | | KHz |
| Data rate | | 0.3 | | 2.5 | KHz |
| Operating temperature | | -20 | | +70 | °C |

6. Mechanical dimension (unit: mm)

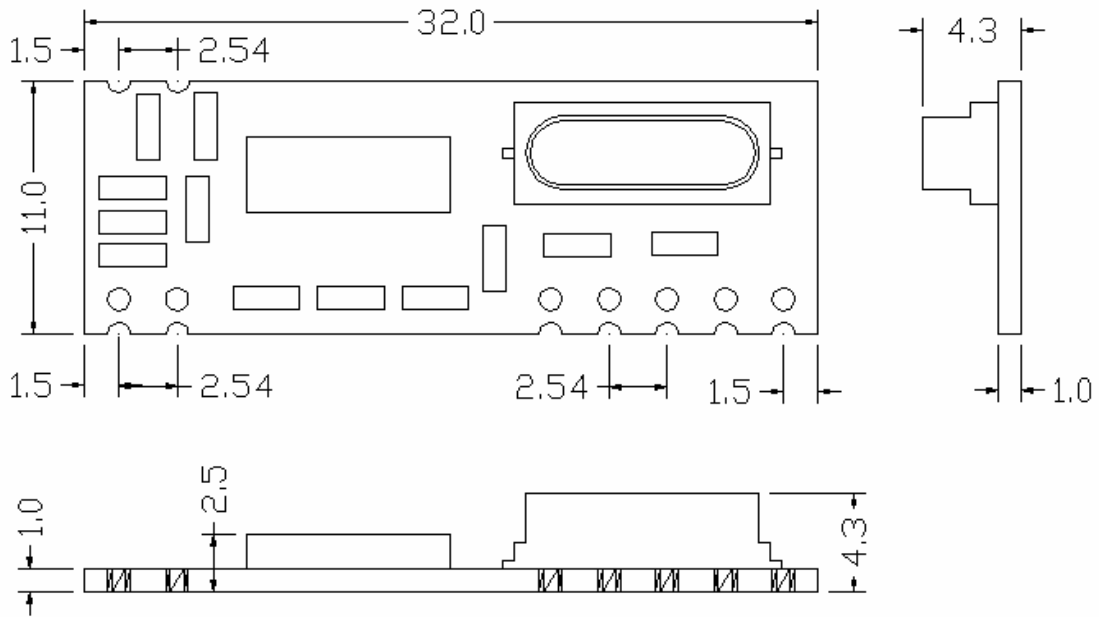


Figure 1 Standard Shape SMD

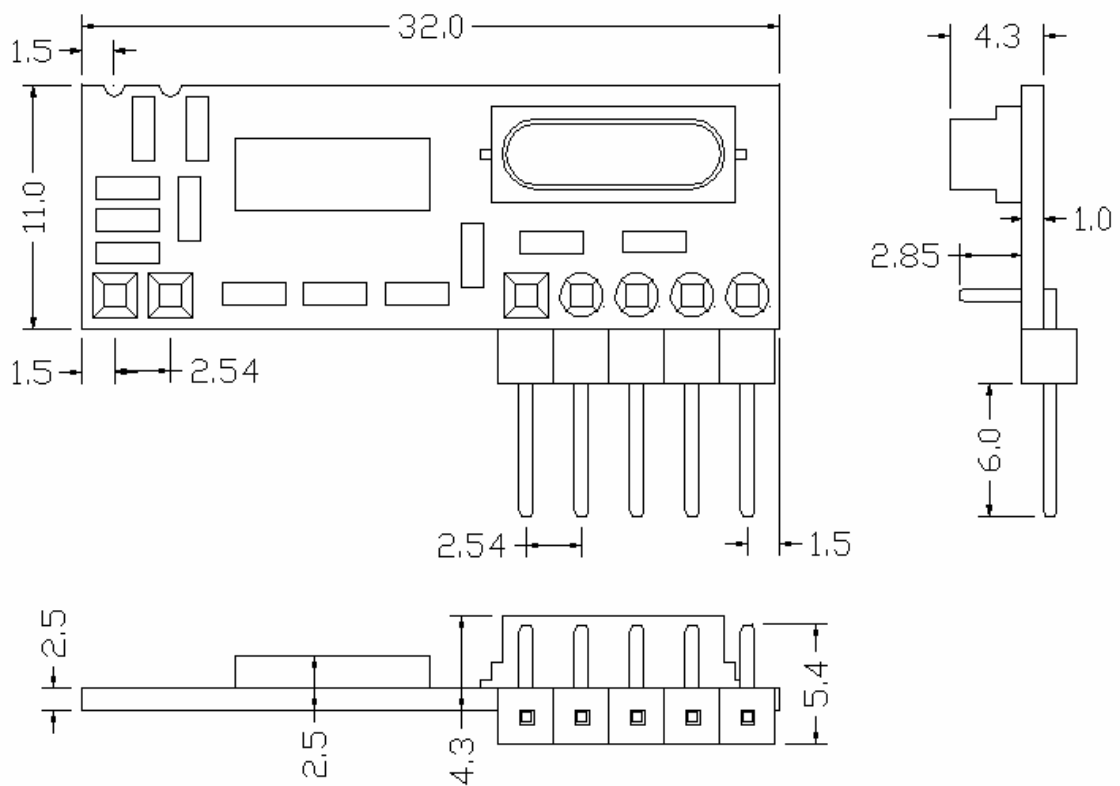


Figure 2 Standard Shape DIP

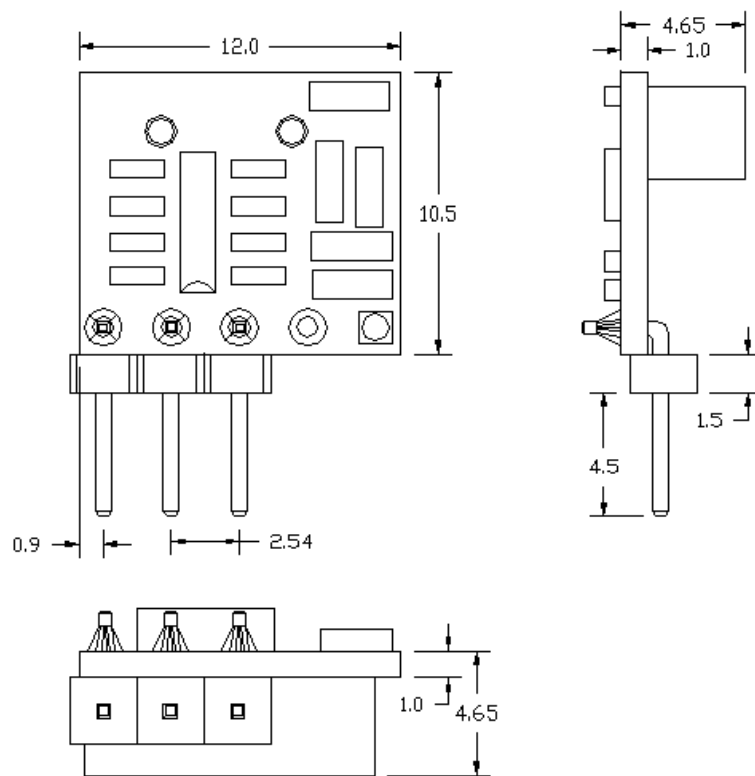


Figure 3 Shape A DIP

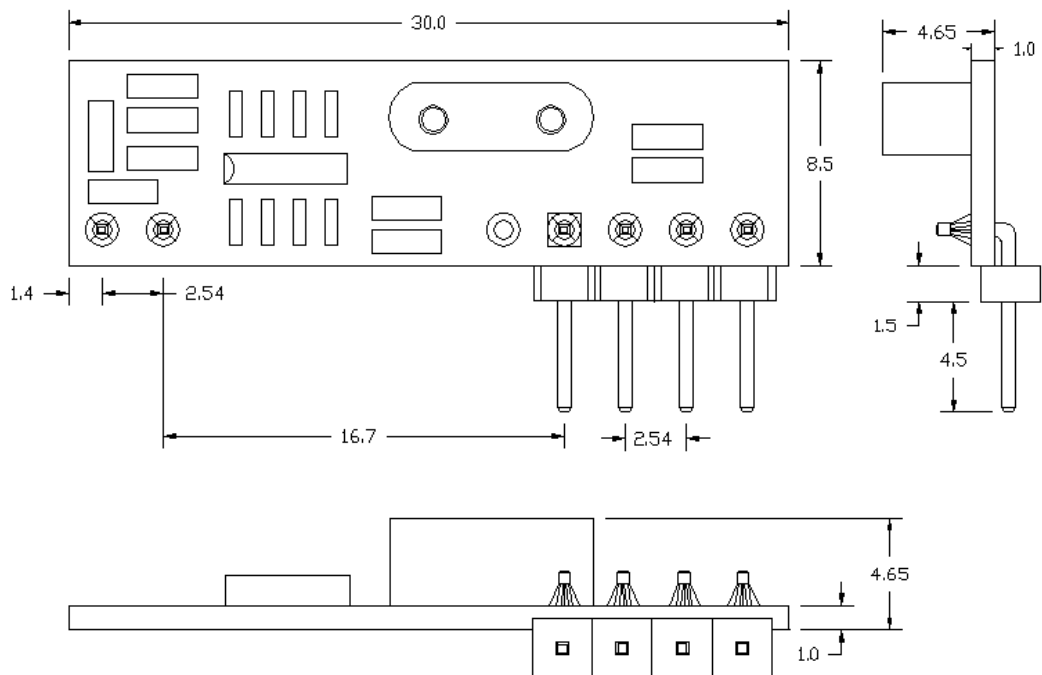


Figure 4 Shape B DIP

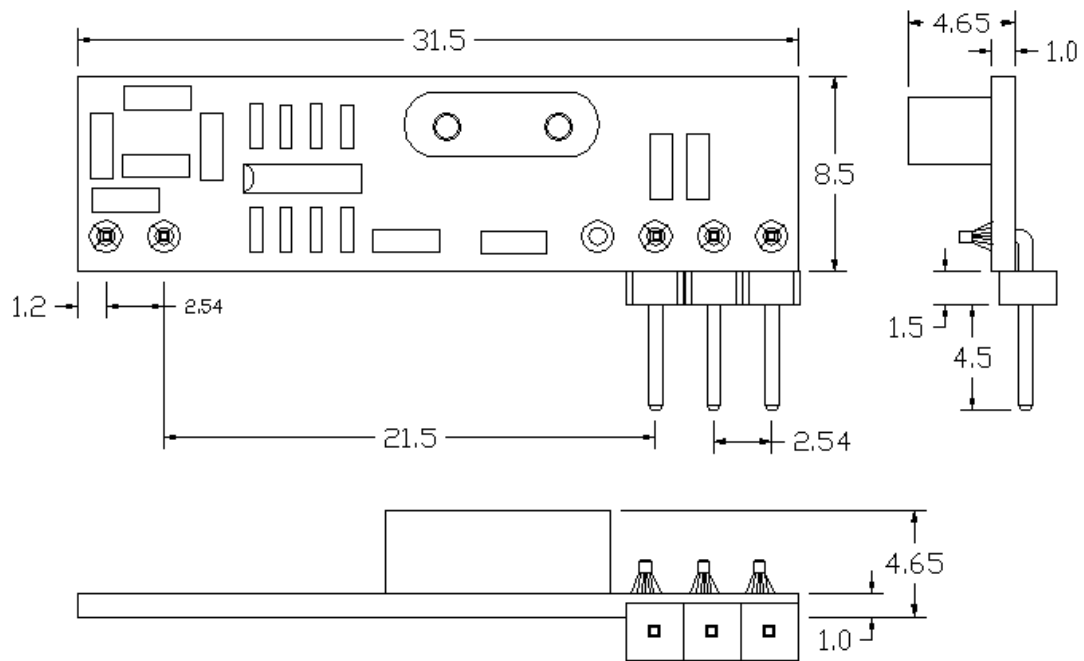


Figure 5 Shape C DIP

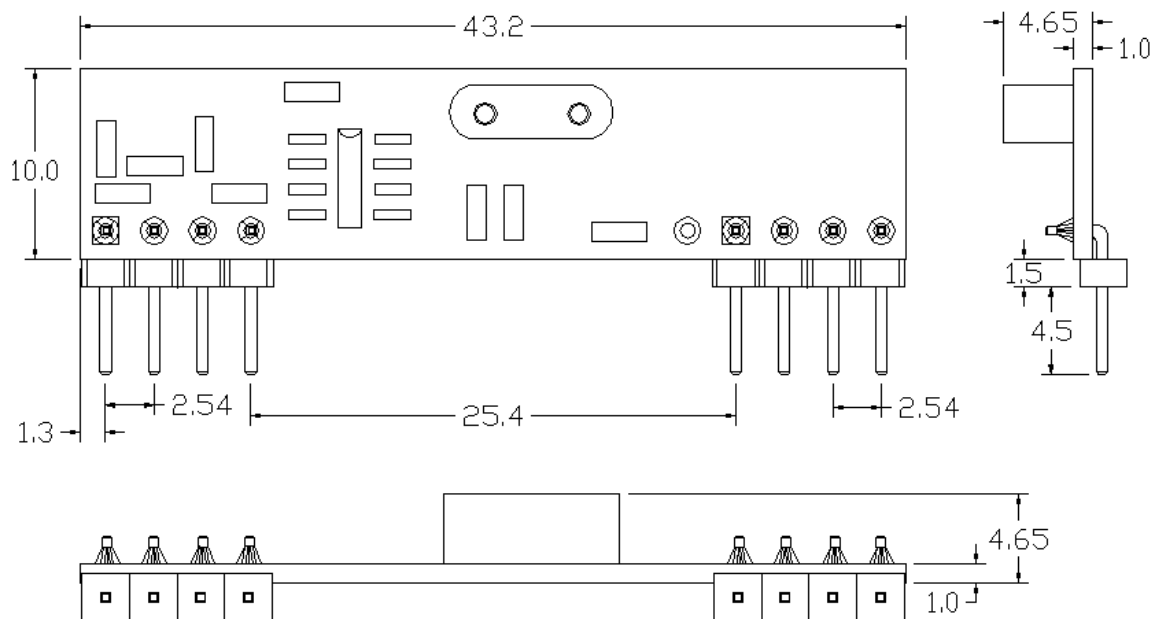
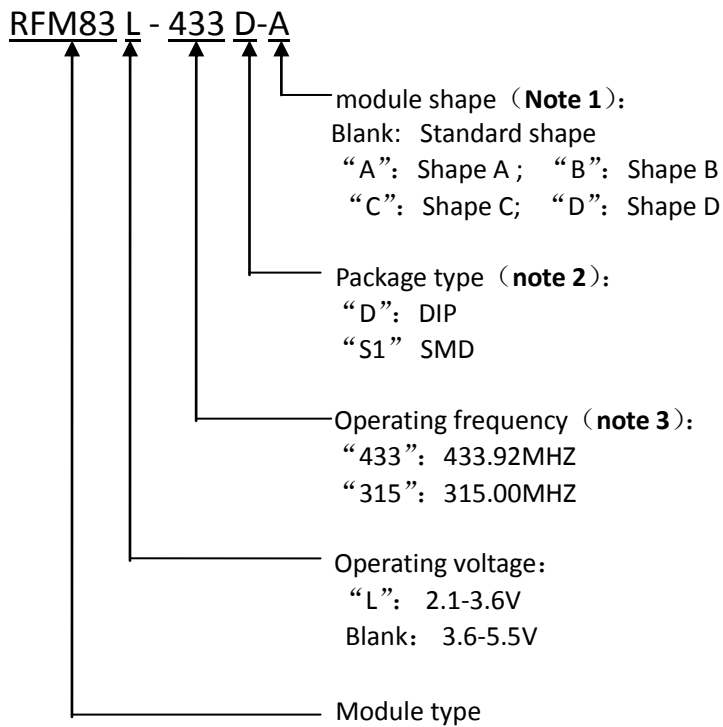


Figure 3 Shape D DIP

7. Ordering information



Note1: Standard shape type is HopeRF's origin design. Other shape type A/B/C/D are designed in order to pin to pin replace other companies' module. If customer can't find pin to pin replacement module, we can make custom design.

Note 2: Only standard Shape type has SMD package.

Note 3: Besides 315Mhz and 433.92Mhz, we can customize other frequencies between 300mhz and 440Mhz according to customer requirements.

P/N comparison table:

| Module P/N | Chip type | Module shape type | Operating Voltage (V) | Operating frequency (MHz) | Enable Function (SHUT) | Package type |
|----------------|-----------|-------------------|-----------------------|---------------------------|------------------------|--------------|
| RFM83C-315S1 | RF83C | standard Shape | 3.6-5.5 | 315 | Yes | SMD |
| RFM83C-433S1 | RF83C | standard Shape | 3.6-5.5 | 433.92 | Yes | SMD |
| RFM83CL-315S1 | RF83CL | standard Shape | 2.1-3.6 | 315 | Yes | SMD |
| RFM83CL-433S1 | RF83CL | standard Shape | 2.1-3.6 | 433.92 | Yes | SMD |
| RFM83C-315D | RF83C | standard Shape | 3.6-5.5 | 315 | Yes | DIP |
| RFM83C-433D | RF83C | standard Shape | 3.6-5.5 | 433.92 | Yes | DIP |
| RFM83CL-315D | RF83CL | standard Shape | 2.1-3.6 | 315 | Yes | DIP |
| RFM83CL-433D | RF83CL | standard Shape | 2.1-3.6 | 433.92 | Yes | DIP |
| RFM83C-315D-A | RF83C | Shape A | 3.6-5.5 | 315 | No | DIP |
| RFM83C-433D-A | RF83C | Shape A | 3.6-5.5 | 433.92 | No | DIP |
| RFM83CL-315D-A | RF83CL | Shape A | 2.1-3.6 | 315 | No | DIP |
| RFM83CL-433D-A | RF83CL | Shape A | 2.1-3.6 | 433.92 | No | DIP |
| RFM83C-315D-B | RF83C | Shape B | 3.6-5.5 | 315 | No | DIP |
| RFM83C-433D-B | RF83C | Shape B | 3.6-5.5 | 433.92 | No | DIP |
| RFM83CL-315D-B | RF83CL | Shape B | 2.1-3.6 | 315 | No | DIP |
| RFM83CL-433D-B | RF83CL | Shape B | 2.1-3.6 | 433.92 | No | DIP |
| RFM83C-315D-C | RF83C | Shape C | 3.6-5.5 | 315 | No | DIP |
| RFM83C-433D-C | RF83C | Shape C | 3.6-5.5 | 433.92 | No | DIP |
| RFM83CL-315D-C | RF83CL | Shape C | 2.1-3.6 | 315 | No | DIP |
| RFM83CL-433D-C | RF83CL | Shape C | 2.1-3.6 | 433.92 | No | DIP |
| RFM83C-315D-D | RF83C | Shape D | 3.6-5.5 | 315 | No | DIP |
| RFM83C-433D-D | RF83C | Shape D | 3.6-5.5 | 433.92 | No | DIP |
| RFM83CL-315D-D | RF83CL | Shape D | 2.1-3.6 | 315 | No | DIP |
| RFM83CL-433D-D | RF83CL | Shape D | 2.1-3.6 | 433.92 | No | DIP |

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