RFM83C Series ASK/OOK Super-heterodyne receiver module

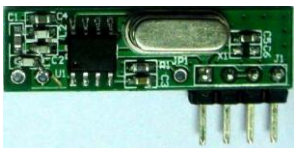
1. General Information

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.

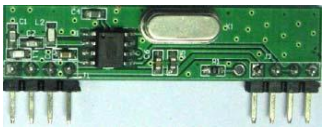

Standard shape SMD


Standard Shape DIP


Shape A DIP


Shape B DIP


Shape C DIP


Shape D DIP

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

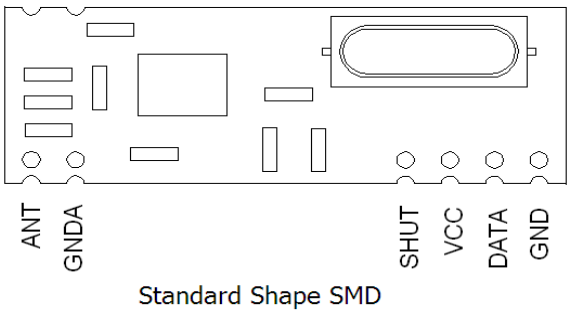
2. Main Features

- 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

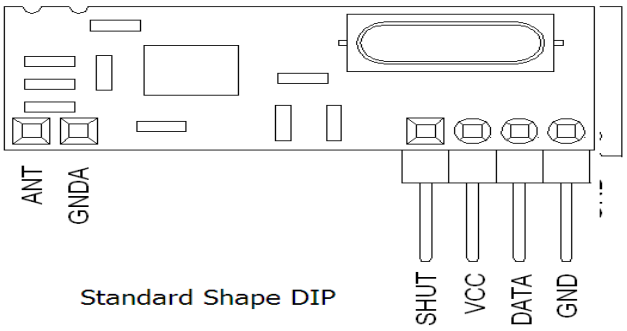
3. Applications

- Wireless data transmission
- Home Automation
- Remote Alarm System

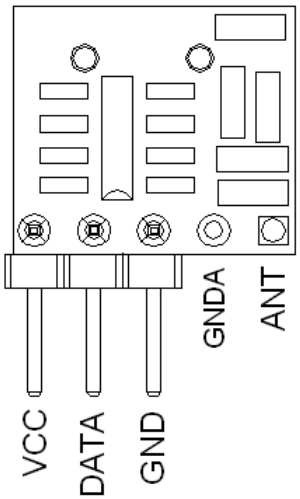
4. Pin definition



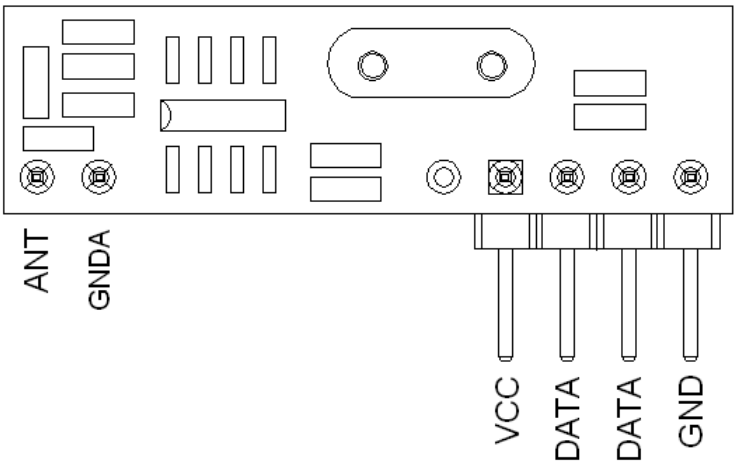
Standard Shape SMD



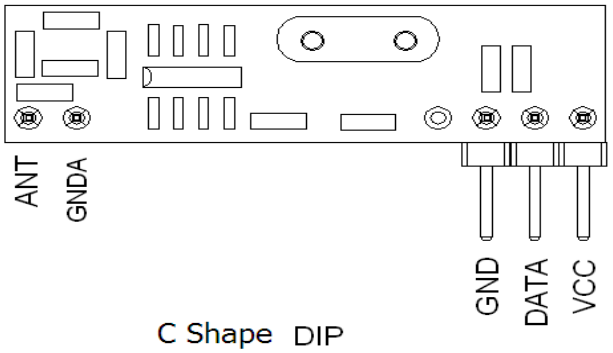
Standard Shape DIP



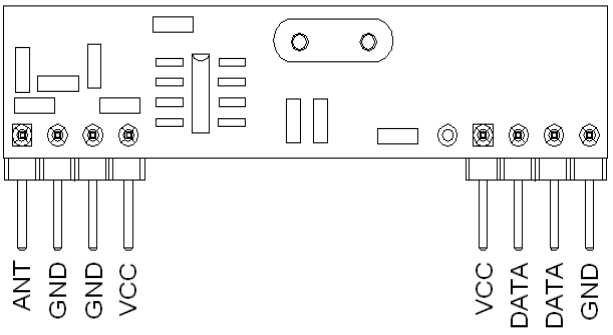
A Shape DIP



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 ouput 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/433.92MH		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 Date Rate 1K		-108		dBm
	433.92MHz Date Rate 1K		-108		dBm
Receive bandwidth			300		KHz
Data rate		0.3		2.5	KHz
Operating temperature		-20		+70	℃

6. Mechanical dimension (unit: mm)

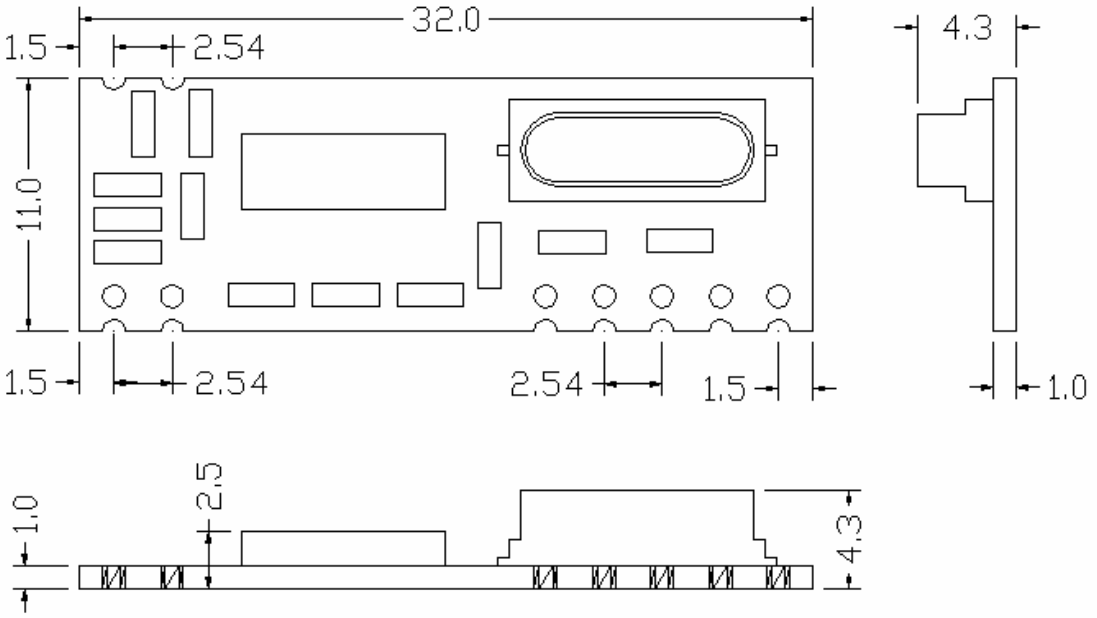


Figure 1 Standard Shape SMD

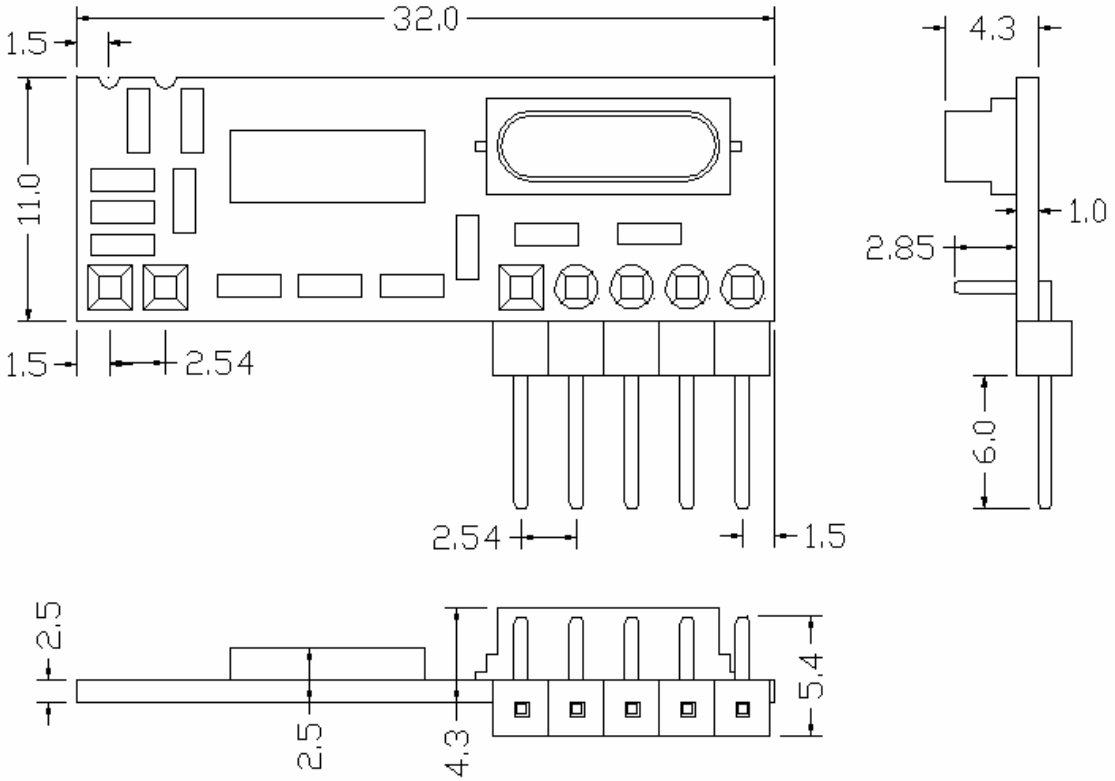


Figure 2 Standard Shape DIP

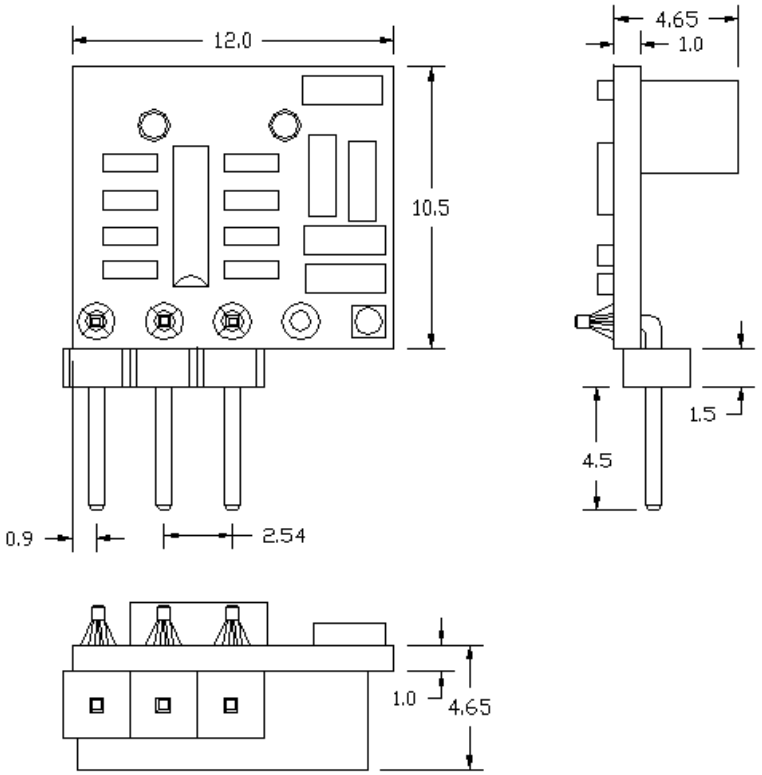


Figure 3 Shape A DIP

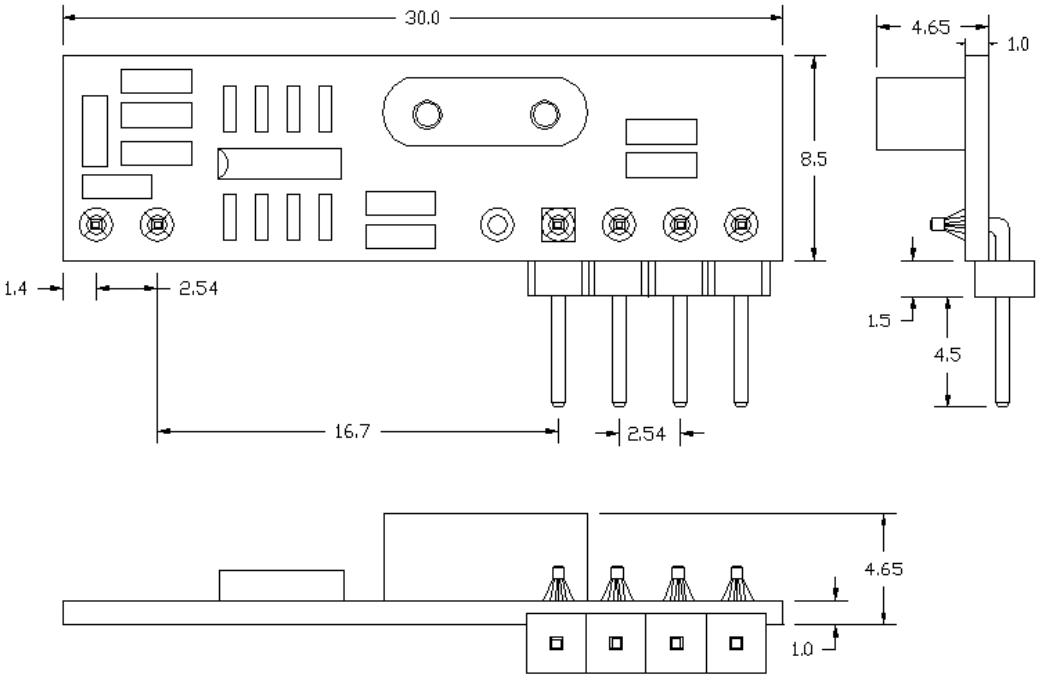


Figure 4 Shape B DIP

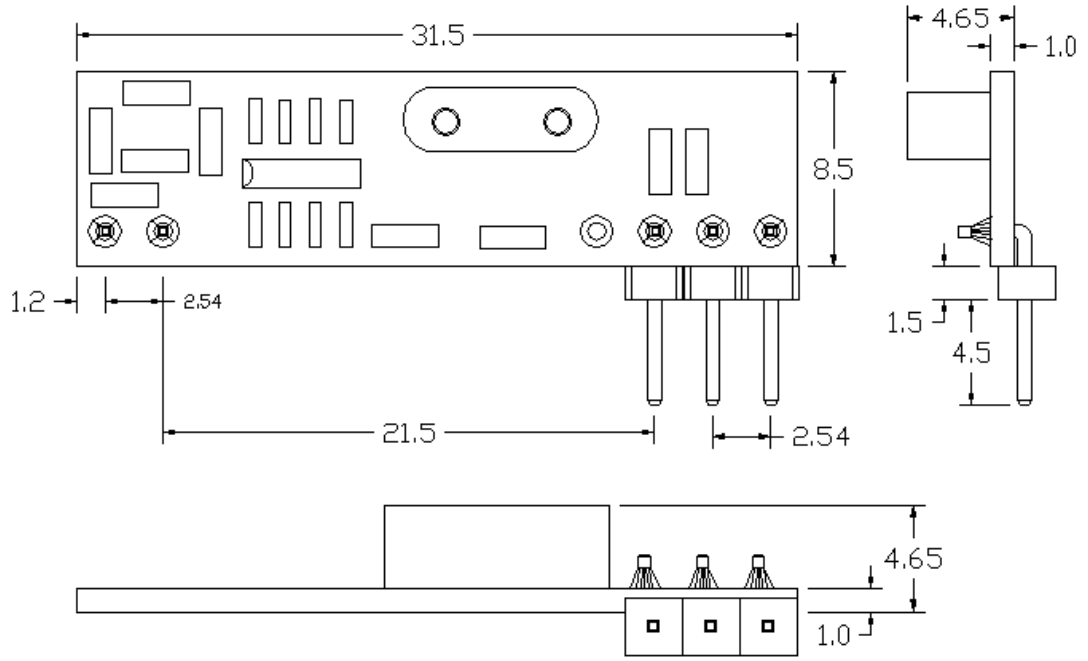


Figure 5 Shape C DIP

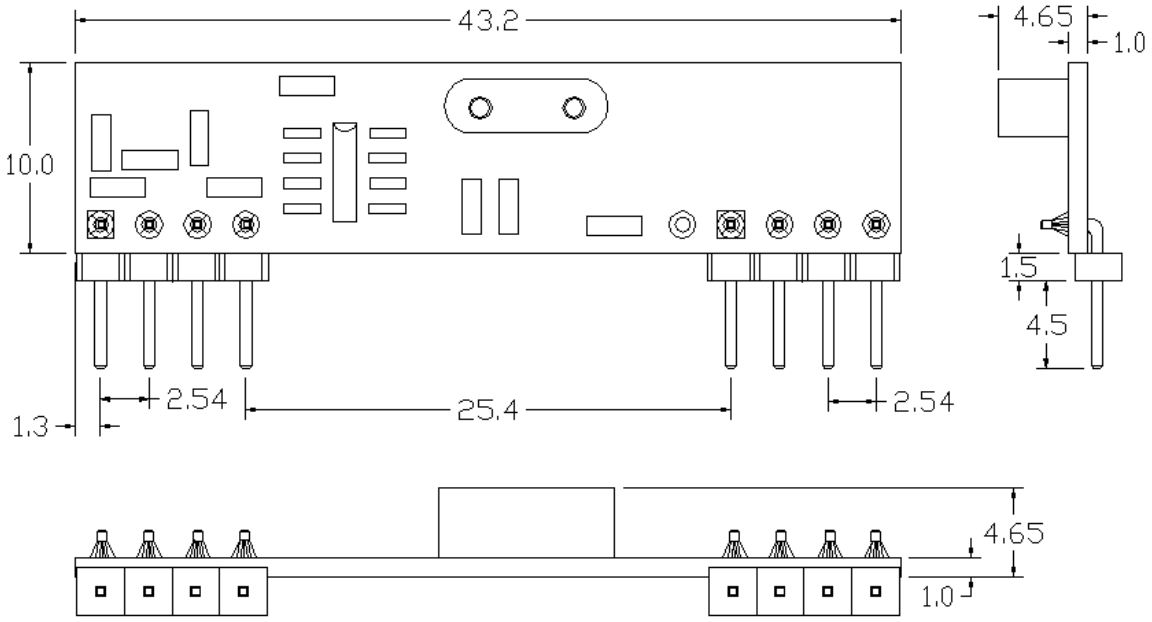
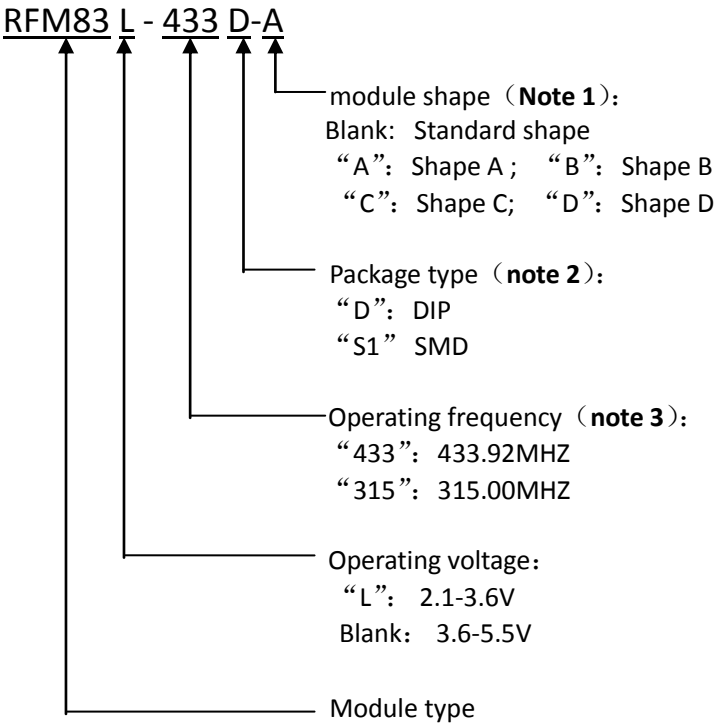


Figure 3 Shape D DIP

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 cann'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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