

## HT4188 Transmission IC for RFID read only

### Summary

HT4188 is the RFID read transmission circuit that is formed by CMOS. The electronic power is provided by the electronic coil of HT4188's 2 pins, and the operation pulse is provided through the same path. HT4188's application is to adjust radio frequency to make 64 bits data loading on RF. This is the reason that HT4188 can transfer data by RFID.

### Outside circuit

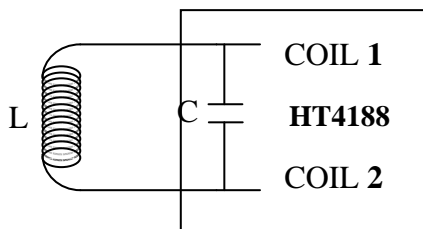
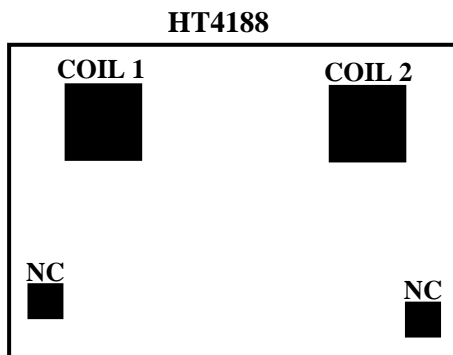


Fig.(一)  
IC capacitor 480pF

### HT4188's pin Assignment



COIL1 / CLOCK INPUT  
COIL2 / DATA TRANSMISSION  
PAD size 90um\*90um  
Chip size 579umx470um  
Fig.(二)

### Electronic condition

Table (一)

Parameter	Min	Typical	Max	Unit
operation temperature	-40		+85	°C
operation voltage	3.5	5		V
operation frequency	100		150	MHz
storage temperature	-55		+200	°C
ESD capability		2000		V

### Code Format

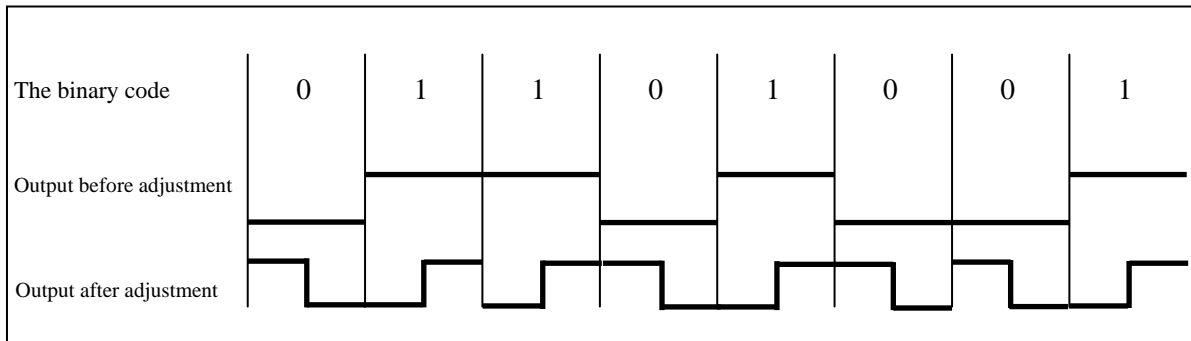


Fig.(三)

### TIMING

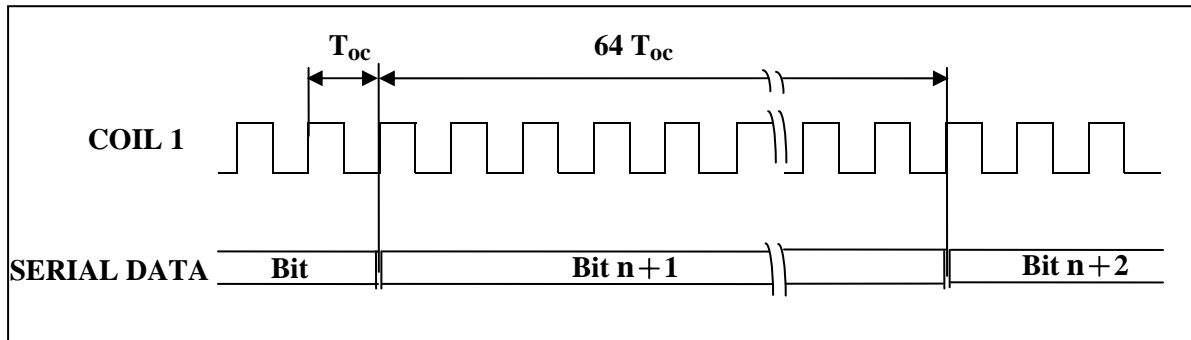


Fig.(四)

### IC BLOCK

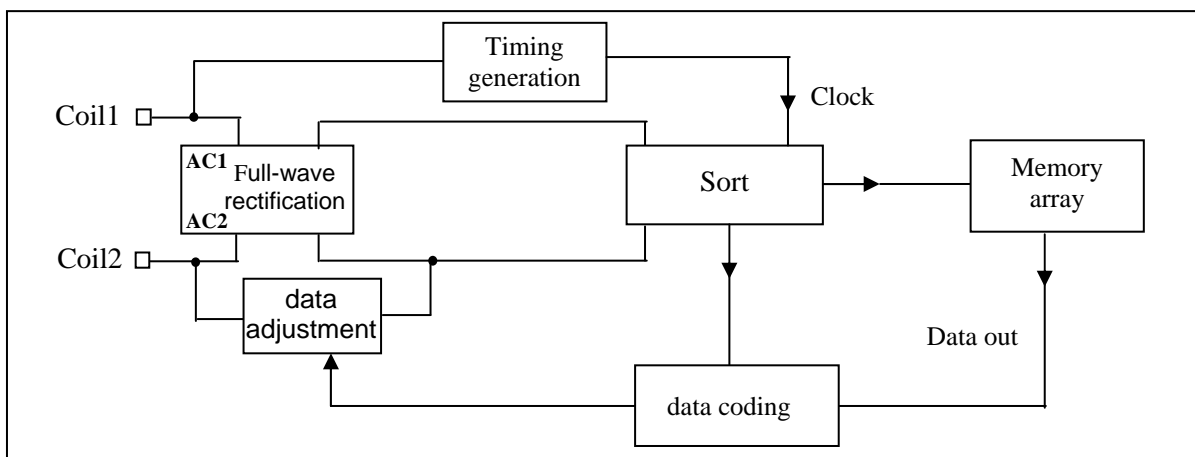


Fig.(五)

**MEMORY ARRAY**

THE HT4188 CONTAINS 64 BITS DIVIDED IN FIVE GROUPS OF INFORMATION. 9 BITS ARE USED FOR THE HEADER, 10 ROW PARITY BITS (P0-P9), 4 COLUMN PARITY BITS (PC0-PC3), 40 DATA BITS (D00-D93), AND 1 STOP BIT SET TO LOGIC 0.

1 1 1 1	1 1 1 1 1	<b>- 9 BITS HEADER</b>		
<b>8 VERSION BITS OR CUSTOMER ID</b>	D00 D01 D02 D03	P0	<b>- 4 DATA BITS AND ASSOCIATED EVEN ROW PARIY BIT</b>	
	D10 D11 D12 D13	P1		
<b>32 DATA BITS ALLOWING 4 BILLION OF COMBINATIONS</b>	D20 D21 D22 D23	P2		
	D30 D31 D32 D33	P3		
	D40 D41 D42 D43	P4		
	D50 D51 D52 D53	P5		
	D60 D61 D62 D63	P6		
	D70 D71 D72 D73	P7		
	D80 D81 D82 D83	P8		<b>- 4 COLUMN EVEN PARITY BITS, NO ROW PARITY BIT</b>
	D90 D91 D92 D93	P9		
	PC0 PC1 PC2 PC3	0		

Fig.(六)

THE HEADER IS COMPOSED BY THE 9 FIRST BITS WHICH ARE MASK PROGRAMMED TO 1 1 1 1 1 1 1 1 1. DUE TO THE DATA AND PARITY ORGANISATION, THIS SEQUENCE CANNOT BE REPRODUCED IN THE DATA STRING. THE HEADER IS FOLLOWED BY 10 GROUPS OF 4 DATA BITS AND 1 EVEN ROW PARITY BIT. THEN, THE LAST GROUP CONSISTS OF 4 EVEN COLUMN PARITY BITS WITHOUT ROW PARITY BIT. BITS D00 TO D03 AND BITS D10 TO D13 ARE CUSTOMER SPECIFIC IDENTIFICATION.

THESE 64 BITS ARE OUTPUTTED SERIALLY IN ORDER TO CONTROL THE MODULATOR USED TO MODIFY THE CURRENT AT ONE OF THE COIL TERMINALS. WHEN THE 64 BITS DATA STRING IS OUTPUTTED, THE OUTPUT SEQUENCE IS REPEATED CONTINUOUSLY UNTIL POWER GOES OFF.

**CHIP DIMENSIONS**

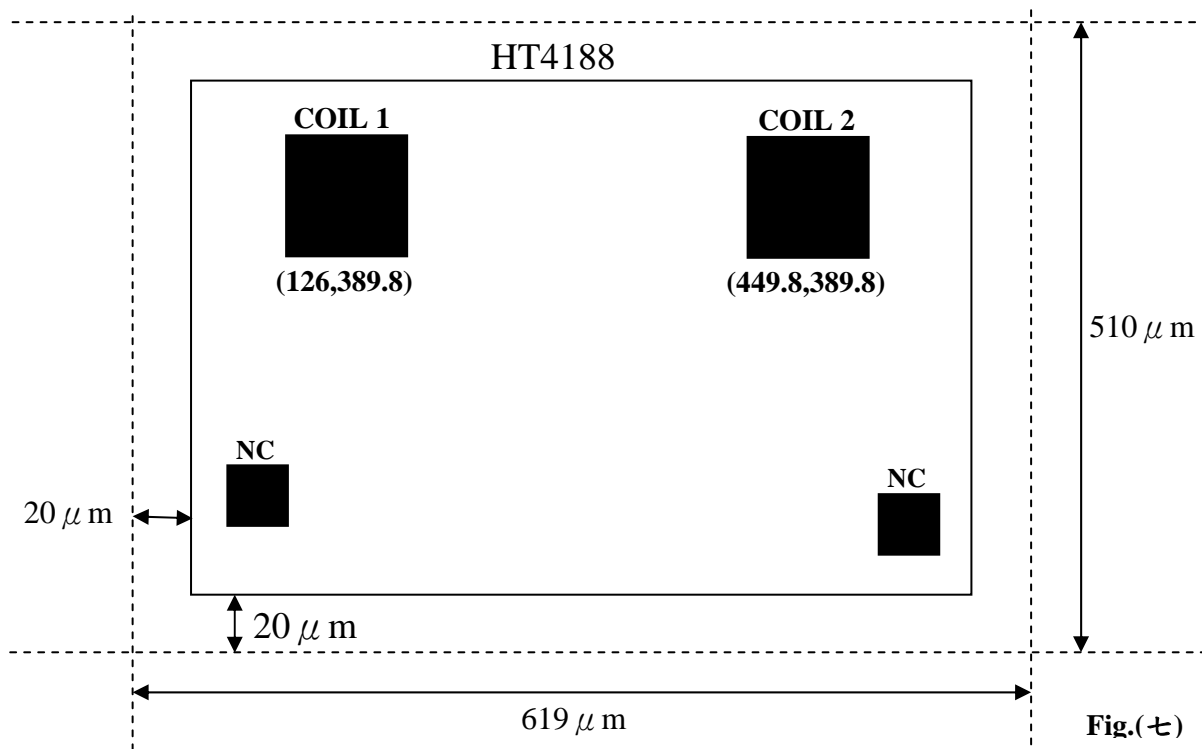


Fig.(七)