



### GENERAL DESCRIPTION

SM5032A/B is an infrared remote control decoder utilizing CMOS technology, paired with SM5021 for transmitter. The remote control system is capable of controlling eight functions and CP1 to CP6 can multi-decode. There is an option for two toggle signal outputs in these data control functions. Also there are two custom codes for user to separate different products.

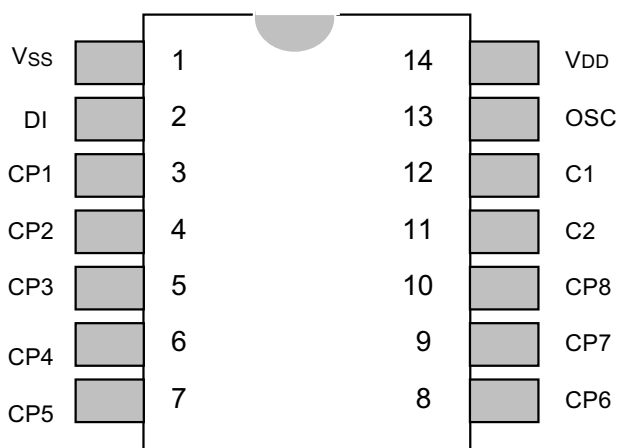
### FEATURES

- \*Wide operation voltage range, 2.5V to 6V
- \*Infrared remote control receiver
- \*Two custom code to separate products
- \*Eight control functions for continuous signal
- \*Multi-key control outputs
- \*Two toggle signal can be optioned in outputs
- \*A single terminal type oscillator by means of RC is provided
- \*Low power consumption
- \*High noise immunity
- \*14 pin DIP or SO package

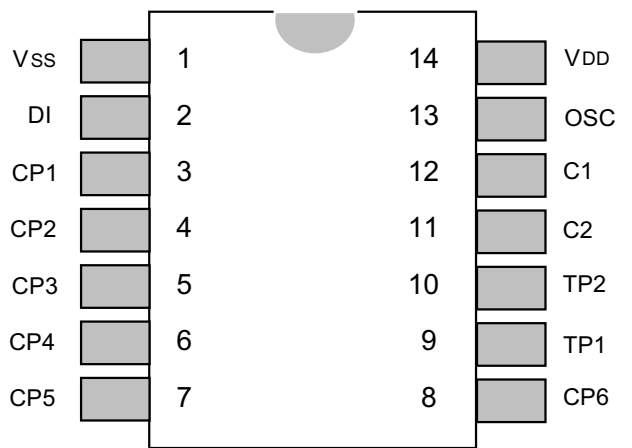
### APPLICATIONS

- \* Consumer Products Remote Control
- \* Toy Remote Control
- \* Audio Remote Control

### PIN DIAGRAM



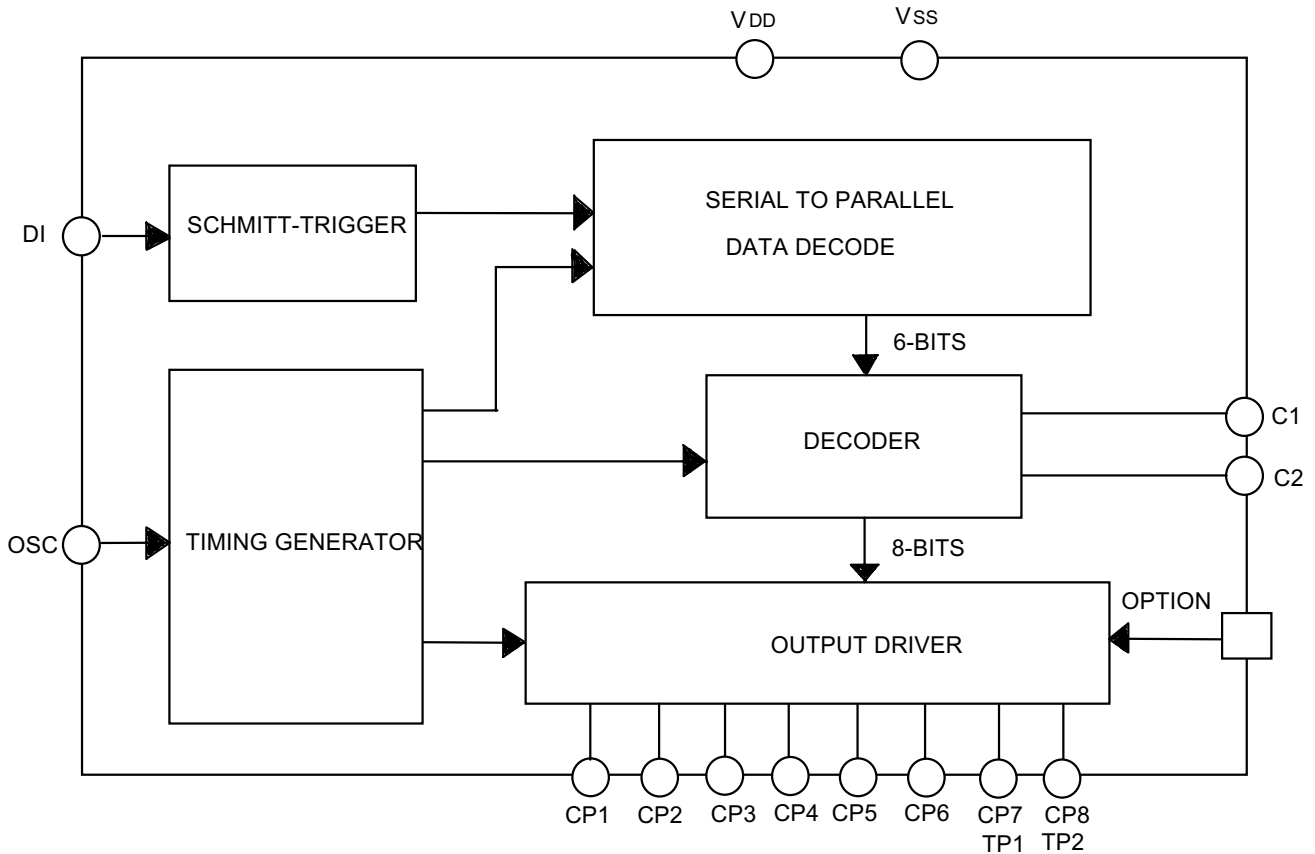
**SM5032A**



**SM5032B**



## BLOCK DIAGRAM



## PIN DESCRIPTION

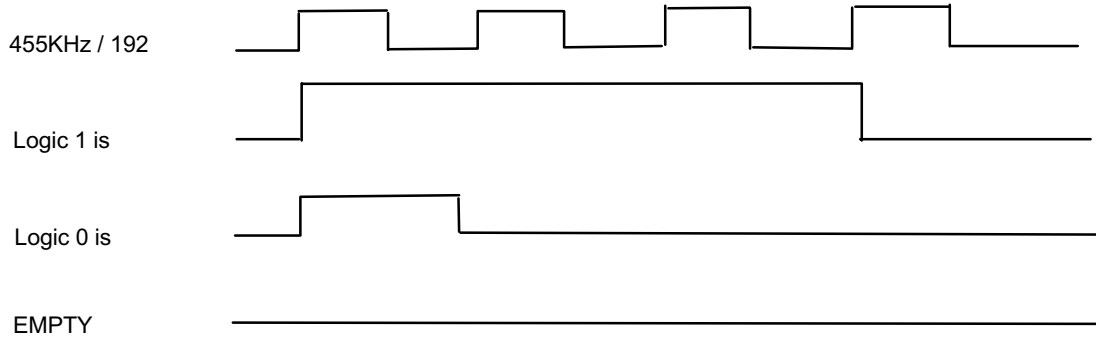
PIN NAME	I/O	FUNCTION
VSS	POWER	NEGATIVE POWER SUPPLY
DI	I	SIGNAL INPUT
CP1 ~ CP6	O	MULTI-KEY CONTROL OUTPUTS
CP7,CP8(TP1/TP2)		SINGLE-DEY CONTROL OUTPUTS (TOGGLE FUNCTION OPTION)
C1,C2	I	CUSTOM CODE
OSC	I	38K Hz OSC PIN
VDD	POWER	POSITIVE POWER SUPPLY



## FUNCTION DESCRIPTION

### A. Decoder Signal Input Format

#### Bit Format



#### Frame Format

There are four frames, each frame contains four fields while receiving:

- a) Frame Head / Three-Bits                      1 1 0 (Metal Option )
- b) Custom Code / Two-Bits                      C1 C2
- c) Control Word / Seven-Bits                    0 0 0 0 0 1 ~ 1 0 0 0 1 1 0
- d) Synch Filed / Four-Bits of Empty

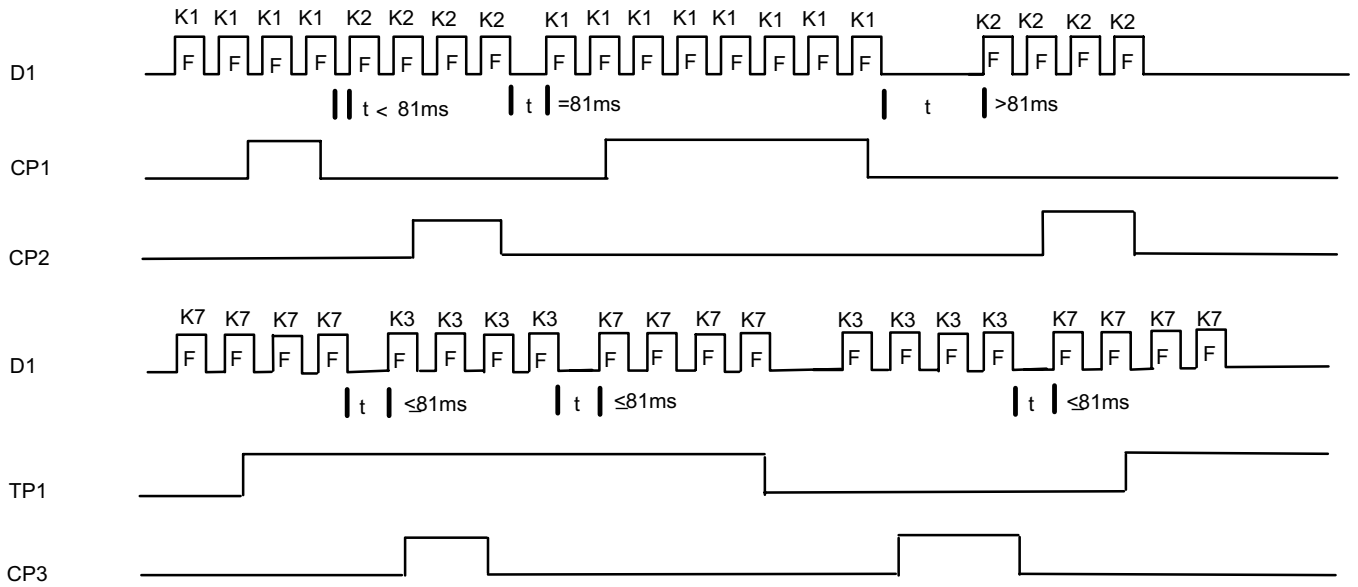
### B. Receiver Code Table

START WORD	CUSTOM CODE	B1	B2	B3	B4	B5	B6	B7	RECEIVER
1 1 0	C1 C2	0	0	0	0	0	0	1	CP1
1 1 0	C1 C2	0	0	0	0	0	1	0	CP2
1 1 0	C1 C2	0	0	0	0	1	0	0	CP3
1 1 0	C1 C2	0	0	0	1	0	0	0	CP4
1 1 0	C1 C2	0	0	1	0	0	0	0	CP5
1 1 0	C1 C2	0	1	0	0	0	0	0	CP6
1 1 0	C1 C2	1	0	0	0	0	1	1	CP7/TP1
1 1 0	C1 C2	1	0	0	0	1	1	0	CP8/TP2



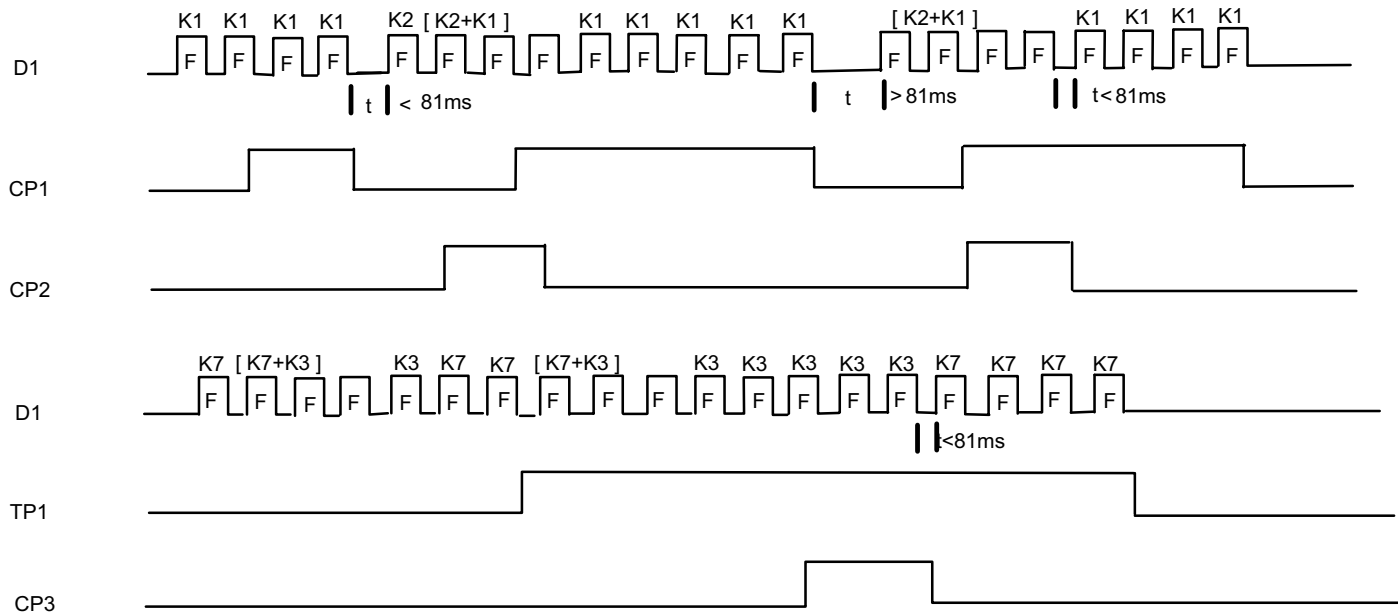
### C. Receiver Waveform

#### Normal Condition ( Paired With SM5021A )



#### Overlap Condition ( Paired With SM5021B )

When one data is received, multi-key decode available. ( Except for CP7/CP8 or TP1/TP2 )





## ABSOLUTE MAXIMUM RATINGS

Parameter	Symbol	Test Conditions	Ratings	Unit
Supply Voltage	$V_{DD} - V_{SS}$		-0.3~6	V
Input Voltage	$V_I$		$V_{SS} - 0.3 \sim V_{DD} + 0.3$	V
Output voltage	$V_O$		$V_{SS} - 0.3 \sim V_{DD} + 0.3$	V
Maximum Power Consumption	$P_a$	$V_{DD} - V_{SS} = 5V$	500	mW
Operating Temperature	$T_{opr}$		-10~70	°C
Storage Temperature	$T_{stg}$		-40~125	°C

## DC ELECTRICAL CHARACTERISTICS

Parameter	Symbol	Test Conditions	Limits			Unit
			Min.	Typ.	Max.	
Supply Voltage	$V_{DD}$		2.2	3	6	V
Stand-by Current	$I_{SB}$	$V_{DD} - V_{SS} = 3V$ OSC stop all output pins open		1		uA
		OSC operation non-loading			300	
Input-high Level	$V_{IH}$		1.5	2.1	3.5	V
Input Low Level	$V_{IL}$		0.7	1	1.5	V
CP1~CP8 Source Current	$I_{OH}$	$V_{OH} = +2.4V$			1	mA
CP1~CP8 Sink Current	$I_{OL}$	$V_{OL} = +0.8V$			1	mA



## APPLICATION CIRCUIT

