



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.

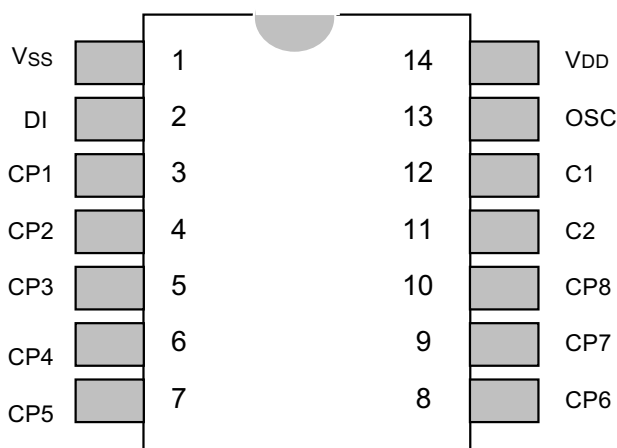
APPLICATIONS

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

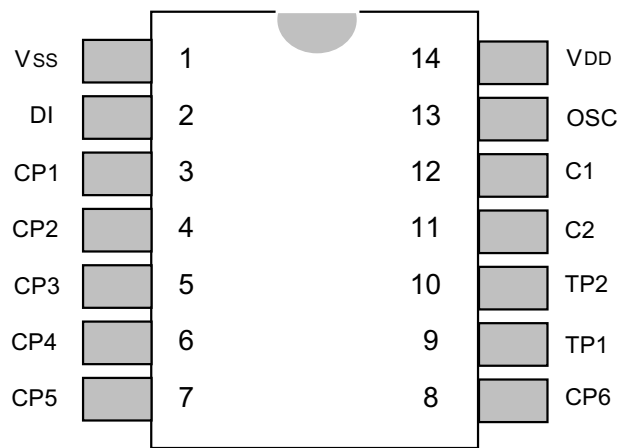
FEATURES

- *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

PIN DIAGRAM



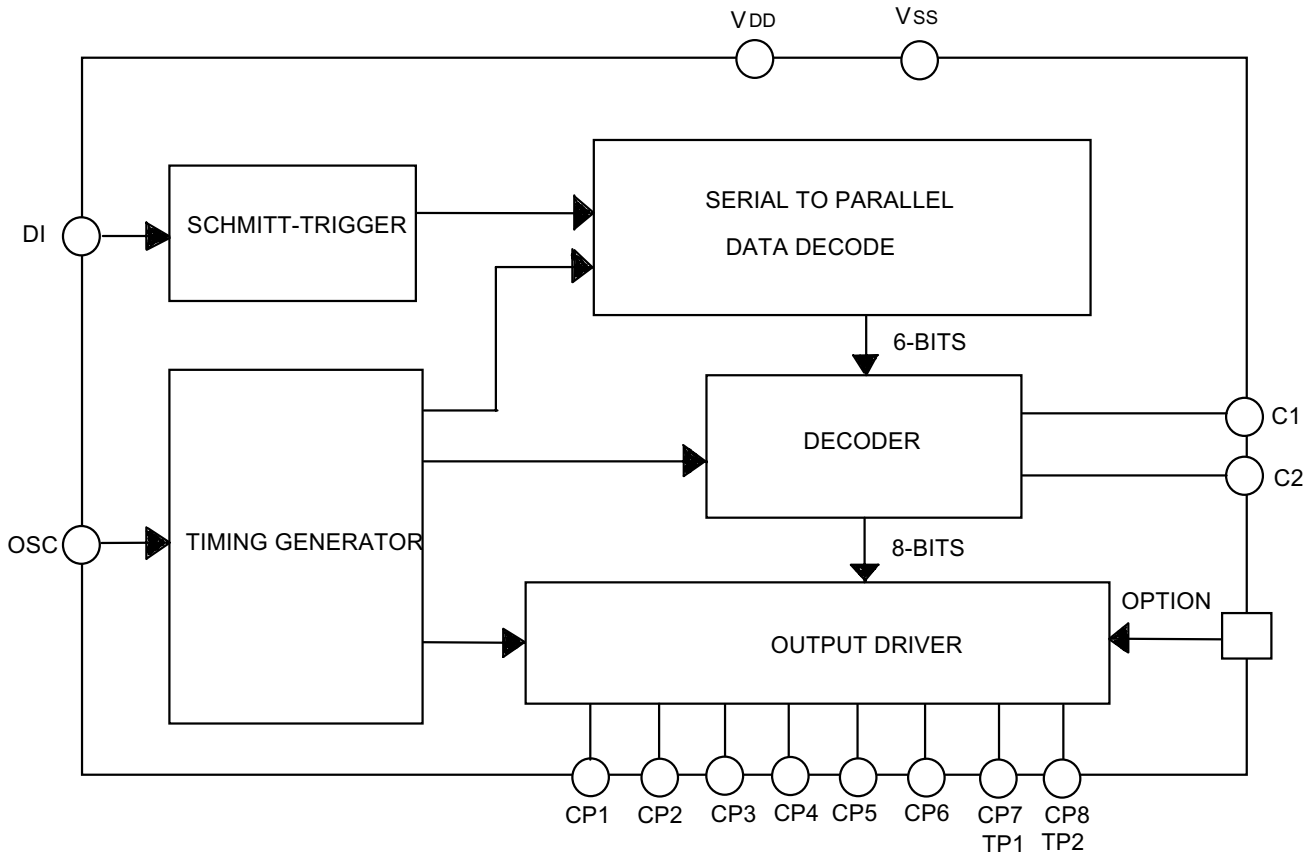
SM5032A



SM5032B

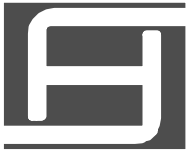


BLOCK DIAGRAM



PIN DESCRIPTION

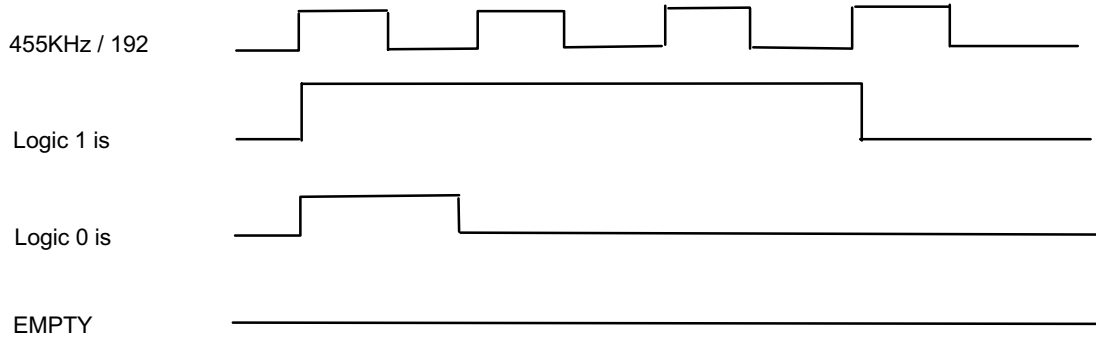
PIN NAME	I/O	FUNCTION
VSS	POWER	NEGATIVE POWER SUPPLY
DI	I	SIGNAL INPUT
CP1 ~ CP6	O	MULTI-KEY CONTROL OUTPUTS
CP7,CP8(TP1/TP2)		SINGLE-DEY CONTROL OUTPUTS (TOGGLE FUNCTION OPTION)
C1,C2	I	CUSTOM CODE
OSC	I	38K Hz OSC PIN
VDD	POWER	POSITIVE POWER SUPPLY



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

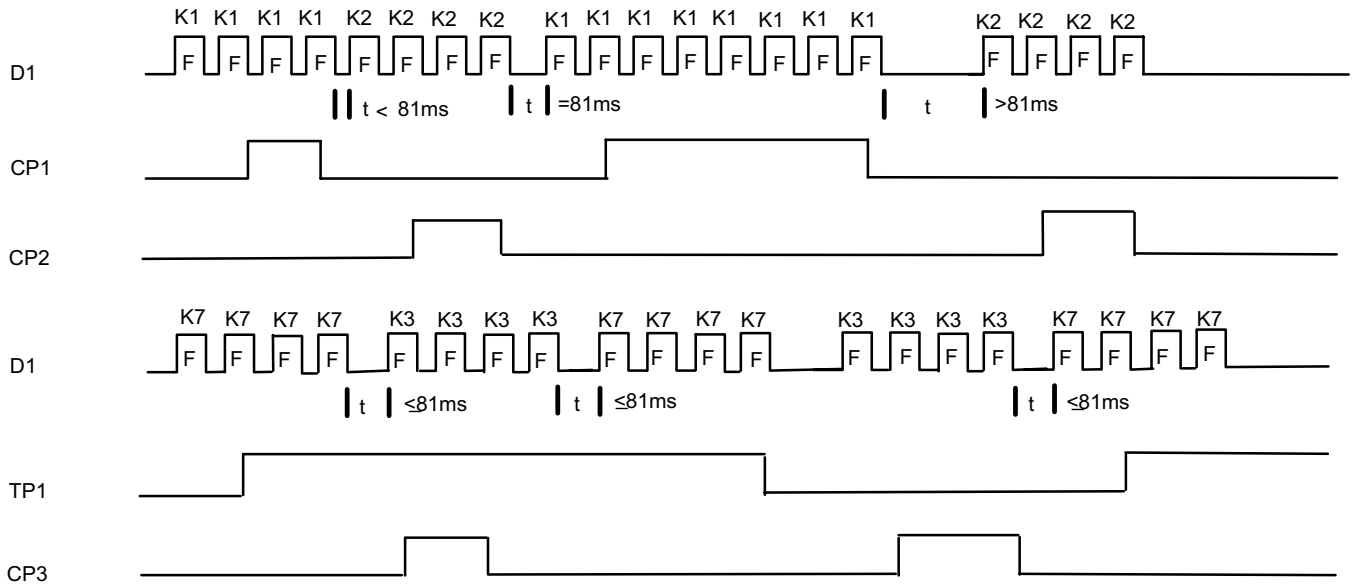
B. Receiver Code Table

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



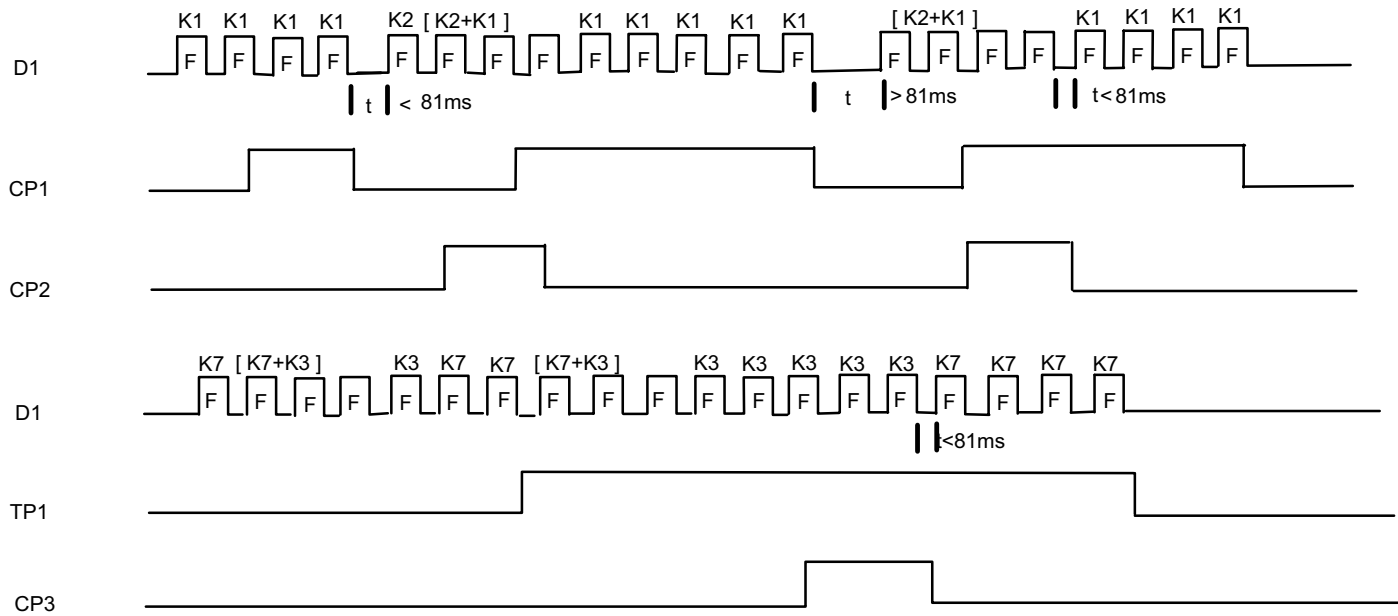
C. Receiver Waveform

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

