YKP1568VG5

8- BIT MICROCONTROLLER FOR REMOTE CONTROL TRANSMITTERS

The YKP1568VG5 is stand-alone microcontroller designate for use in remote control transmitters for a wide range of applications. The YKP1568VG5 for this purpose provides number of dedicated hardware functions for remote controller applications

These include the following additional blocks to the YKP1568VG X core:

- Interrupt Gate
- Hardware Modulator
- Output Driver
- Watchdog Timer.

When the transmitter is not in use the microcontroller is in STOP mode and the oscillator is HALTED. The AND gate from P1 Port line provides the wake-up to end STOP mode.

The Hardware Modulator produces pulse bursts according to the required protocol. By software the `ON-time` and the `OFF-time` of each pulse and the number of pulses are controlled.

The Output Driver can handle sufficient current to drive a single transistor, and this can provide the required current for the LED.

The Watchdog Timer will reset the YKP1568VG5 when it has not been reloaded (reset) in time, because the program has run out of sequence (endless loop, continuous IDLE mode, etc.). During STOP mode the oscillator is halted, so then the Watchdog Timer is not running.

Device is functionally identical to the PCA84c122A, Philips.

FEATURES.

- Two test input T0 (ANDed with P1 input lines), T1
- 3 single-level vectored interrupt sources: external (T0/INT and Port 1, for keypad press wake-up functions), timer/counter (T1) and hardware modulator interrupt
- 8-bit programmable timer/counter with 5-bit pre-scalier
- On-board oscillator 1MHz to 6MHz.
- Single supply voltage from 2.0 V to 5.5 V.
- Operating temperature range : -20 to $+50^0$ C
- Power saving modes: Idle and Stop modes are provided
- `Hardware Modulator` that provides pulse bursts of which the `on` time and `off` time of each pulse (i.e. duty cycle) and the number of pulses are programmable
- One output line from the `Hardware Modulator` to control the driver transistor for the IR-LED. Capable of sinking 27 mA at Vdd=2.0V, Vout=1.0V
- Watchdog Timer to keep the transmitter from being locked or malfunction.

Automatic system reset is generated by the WDT if the timer is not reset before overflow from counting within a certain period of time.

DC CHARESTERISTICS.

Supply voltage, V	2.0 ... 5.5
Supply current operating mode, mA	1.8
Operating crystal frequency, MHz	6.0
Sink current LOW, mA	1.6
Pull-up output source current HIGT, μA	-40
Sink current LOW (for pulse output OUT), mA	27
Source current HIGT (for pulse output OUT), mA	-1.6

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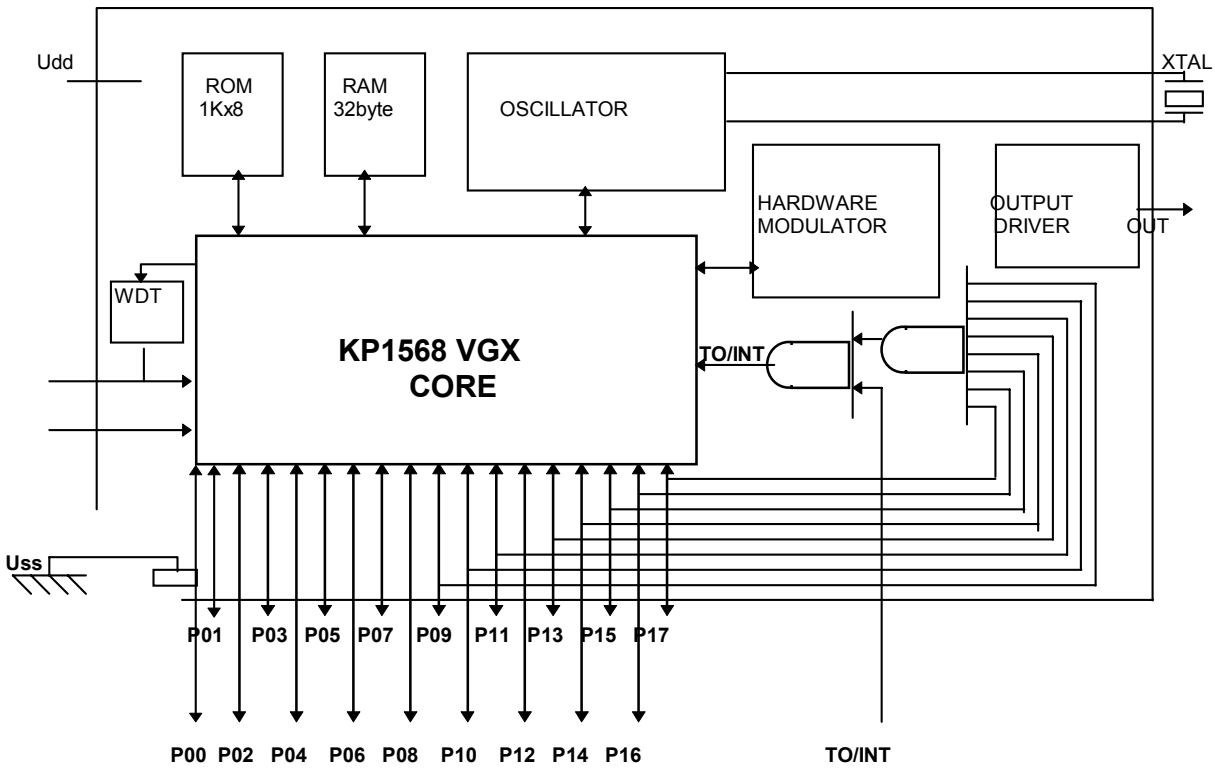
PIN DESCRIPTION

SYMBOL	PIN	DESCRIPTION
P00 P01 P02 P03 P04 P05 P06 P07	3 2 23 22 10 11 14 15	standard I/O Port line, generally for keypad scanning
P10 P11 P12 P13 P14 P15 P16 P17	19 18 17 16 1 22 12 13	standard I/O Port line, generally for keypad scanning
TO/INT	4	test TO and external interrupt input
T1	5	test T1 input
RESET	6	active HIGH reset, normally tied to Vss
XTAL 1/2	9,8	crystal or ceramic resonator
OUT	21	pulse train output pin, capable of sinking 27 mA
Vdd	7	power supply
Vss	20	ground

BLOCK DIAGRAM



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