

## 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<sup>0</sup> 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 V<sub>dd</sub>=2.0V, V<sub>out</sub>=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, $\mu$ A	-40
☞ Sink current LOW (for pulse output OUT), mA	27
☞ Source current HIGT (for pulse output OUT), mA	-1.6



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**BELMICROSYSTEMS**

# YKP1568VG5

## PIN DESCRIPTION

SYMBOL	PIN	DESCRIPTION
P00	3	standard I/O Port line, generally for keypad scanning
P01	2	
P02	23	
P03	22	
P04	10	
P05	11	
P06	14	
P07	15	
P10	19	standard I/O Port line, generally for keypad scanning
P11	18	
P12	17	
P13	16	
P14	1	
P15	22	
P16	12	
P17	13	
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

