Simple One-button Light Dimmer with Intruder Deterrent

Author:	C. R. Tolken
	Pace Teletronic Components
	Arcadza South Africa
	ctolken@pixie.co.za

INTRODUCTION

Simple light dimmer replacing electromechanical devices using one button for off/on and dimming. On special mode setting a random pseudo/random program is started switching the connected light on and off after dawn. PWM output drives the Diac & Triac. Zero crossing detection as enhancement.

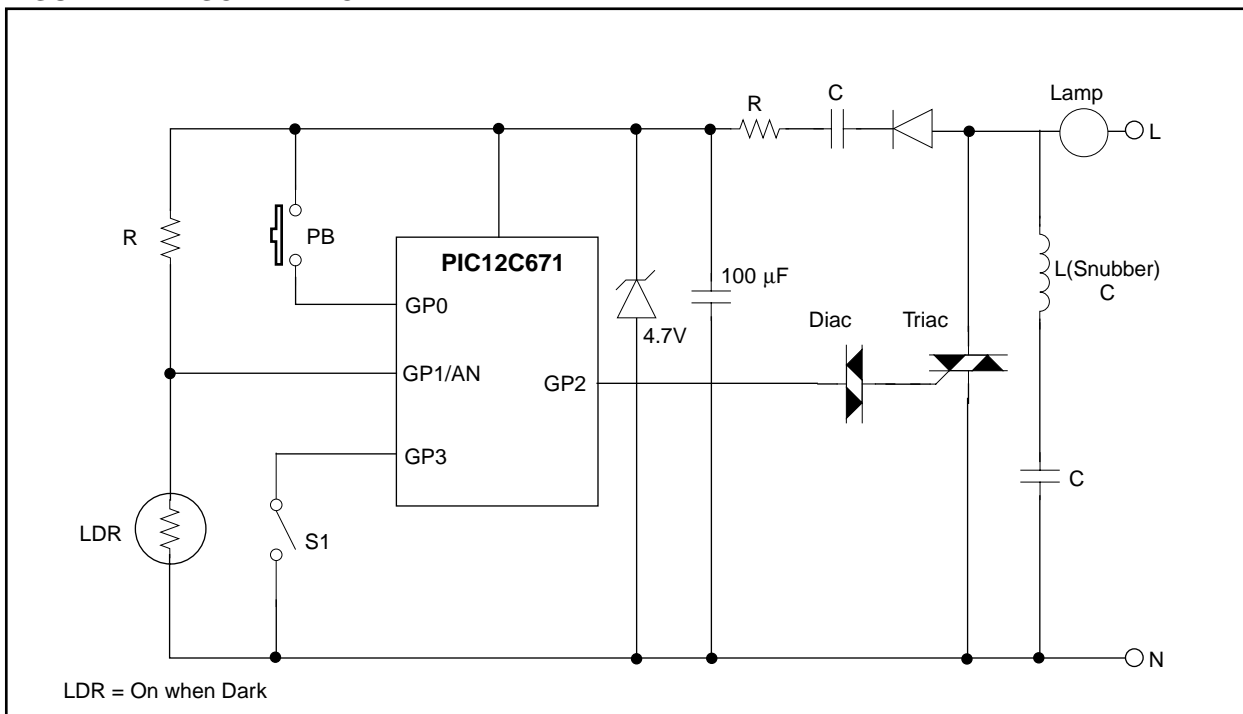## Quick Operation

On press of the push-button, the PICmicro™ checks the duration of the press. If the press is < 500 ms, then the lamp status is changed. If the press is > 500 ms, the PICmicro reverts to cycling mode. If the cycle is upwards, the lamp brightens until it reaches maximum, upon which the lamp dims until minimum. This continues until the push-button is released.

Deterrent Mode

When darkness triggers the LDR and S1 is closed, then a random time is generated - from 1 to 3 hours. Within this time, another random timer (minutes) switches the lamp "on and off", thus creating the impression there is activity in the room. After the hour timer terminates, the lamp stays off permanently.

FIGURE 1:   SCHEMATIC

LDR = On when Dark

SimpleCircuit™