

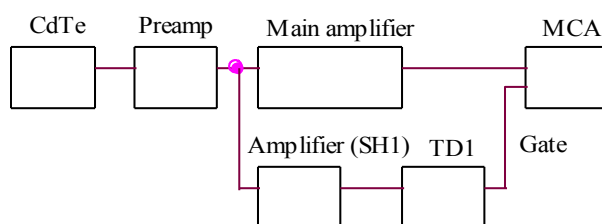
## RISE TIME DISCRIMINATOR MODEL TD 1

Energy resolution and Peak-Valley ratio of CdTe detectors are degraded by charge trapping effects. The TD1 module has been designed to overcome this problem. The TD1 module is a rise time discriminator able to greatly improve the spectroscopy from CdTe detectors. In association with the shaper module SH1, it permits to obtain a simple, low cost pulse processor.

### MAIN FEATURE

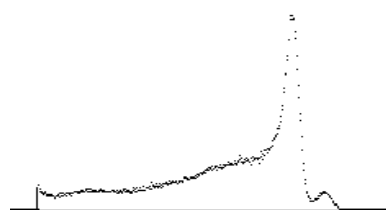
- Easy to set
- Single supply +5V, low power
- Only one external part.
- Complementary logic outputs.
- User settable rise time threshold.
- Compact (23mm\*20mm)
- Can be furnished with SH1(SHTD1).

### TYPICAL ARRANGEMENT



### RESULTS (CdTe detector)

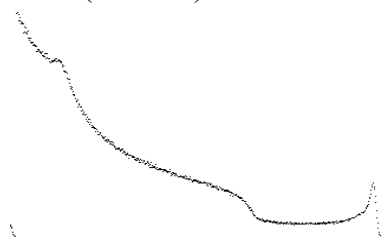
Co<sup>57</sup>(122Kev) Without TD1



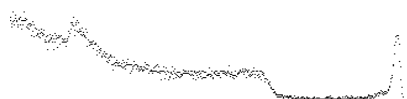
With TD1



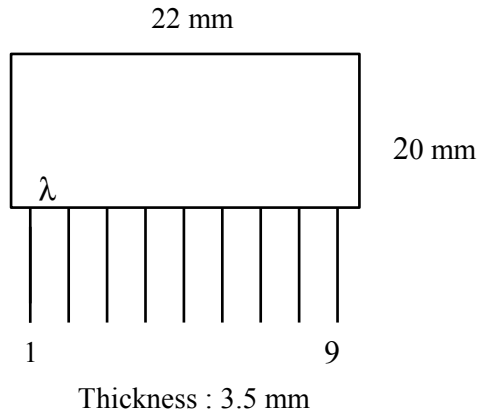
Cs<sup>137</sup> (661Kev) Without TD1



With TD1



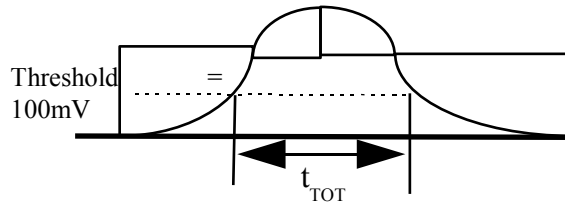
## PIN ASSIGNMENT



- |   |   |
|---|---|
| 1 | Vcc (+5V)                                 |
| 2 | Input (-0.2V to 3.5V)                     |
| 3 | GND                                       |
| 4 | GND                                       |
| 5 | Vcc (+5V)                                 |
| 6 | Time set (0.8μs to 4μs with $R_T = 22K$ ) |
| 7 | GND                                       |
| 8 | OUT/ (10μs length, 0/5V level)            |
| 9 | OUT                                       |

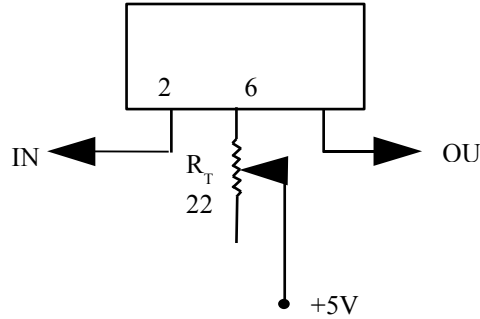
## PRINCIPLE

Input



An output pulse generated is  $t_{TOT} < \text{Time set}$

## SCHEMATIC



## TIMING

