

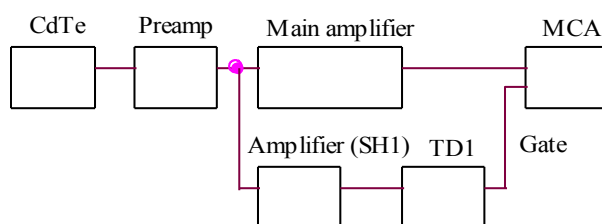
RISE TIME DISCRIMINATOR MODEL TD 1

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

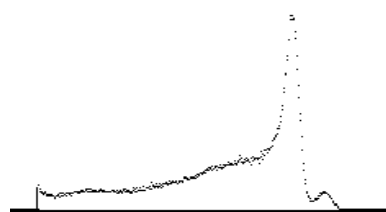
- Easy to set
- Single supply +5V, low power
- Only one external part.
- Complementary logic outputs.
- User settable rise time threshold.
- Compact (23mm*20mm)
- Can be furnished with SH1(SHTD1).

TYPICAL ARRANGEMENT



RESULTS (CdTe detector)

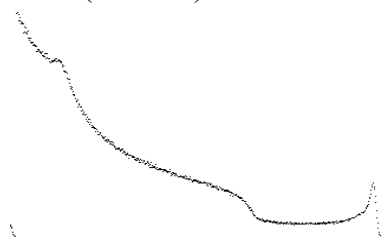
Co⁵⁷(122Kev) Without TD1



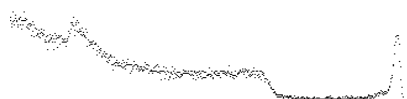
With TD1



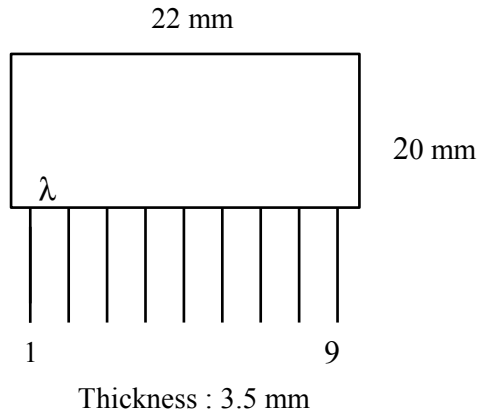
Cs¹³⁷ (661Kev) Without TD1



With TD1



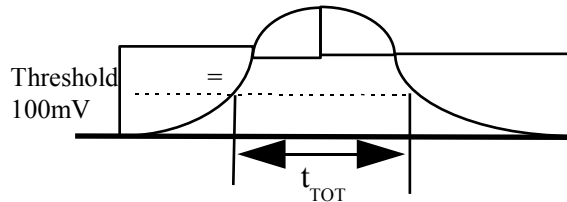
PIN ASSIGNMENT



- | | |
|---|---|
| 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 |

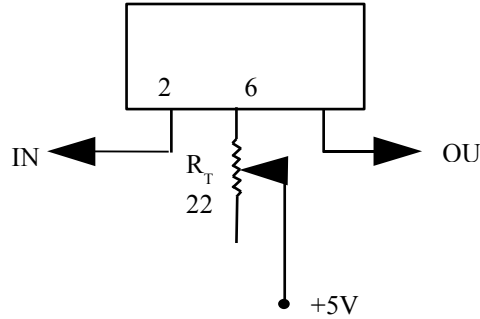
PRINCIPLE

Input



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

SCHEMATIC



TIMING

