

# SHARP

## GA100T802MZ1

## GA100TX02MZA

## OPIC Light Detector

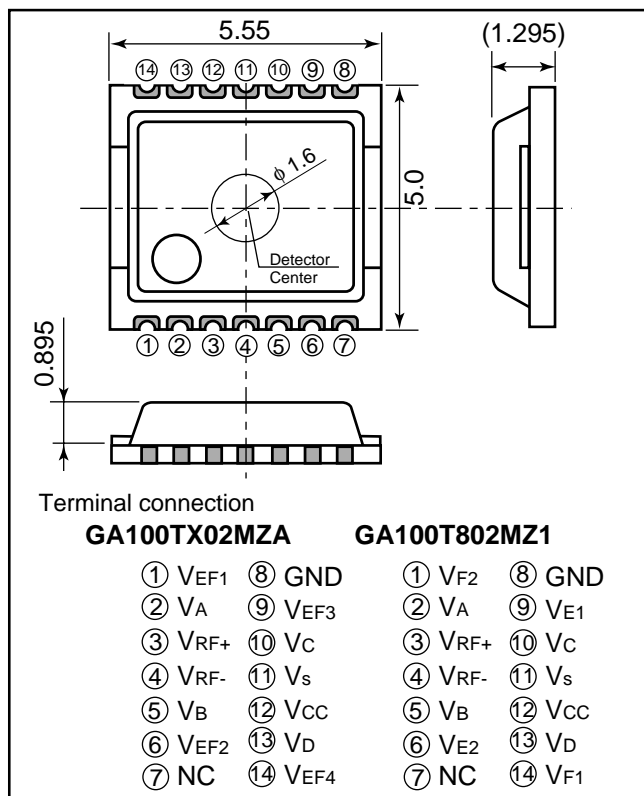
\*OPIC Light Detector for 16x Speed DVD-ROM

### Features

- (1) OPIC light detector with built-in RF amplifier  
(Integrates PIN photodiode and Amp. IC onto a single chip)  
**GA100TX02MZA** : 12-division PD  
**GA100T802MZ1** : 8-division PD
- (2) High speed response  
(Response frequency : MIN. 90 MHz)
- (3) Built-in capacitor for power supply bypass
- (4) Can read various discs such as DVD,  
DVD-ROM, DVD-RAM, DVD-R,  
CD-ROM, CD-R, CD-RW
- (5) High sensitivity
- (6) Surface mount-leadless package  
(Package dimensions : 5.0 × 5.55 × 1.295mm)
- (7) Applicable for reflow

### Outline Dimensions

(Unit:mm)



\* "OPIC" (Optical IC) is a trademark of SHARP Corporation.  
An OPIC consists of a light-detecting element and a signal-processing circuit integrated onto a single chip.

### Applications

- (1) DVD-ROM drives
- (2) DVD players

### Specifications

(Ta=25°C)

Parameter	Symbol	Characteristics		Condition
		Input wavelength 650 nm	Input wavelength 780 nm	
Supply voltage	Vcc	4.75 to 5.25 V		-
Output off-set voltage	Vod	±25 mV		VA ~ VD, VS base
Sensitivity(A,B,C,D)	RP1	TYP. 22.9 mV/μW	TYP. 24.6 mV/μW	VA ~ VD
Sensitivity(RF)	RP2	TYP. 14.1 mV/μW	TYP. 15.2 mV/μW	VE1 ~ VF2
Response frequency	fc(RF)	MIN. 90 MHz	MIN. 70 MHz	- 3 dB
Output noise level	Vn(RF)	TYP. - 76 dBm		f=72MHz,BW=30 kHz
Operating temperature	Topr	- 10 to + 80°C		-

(Notice)

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(Internet)

•Data for Sharp's optoelectronic/power devices is provided on internet. (Address <http://sharp-world.com/ecg/>)

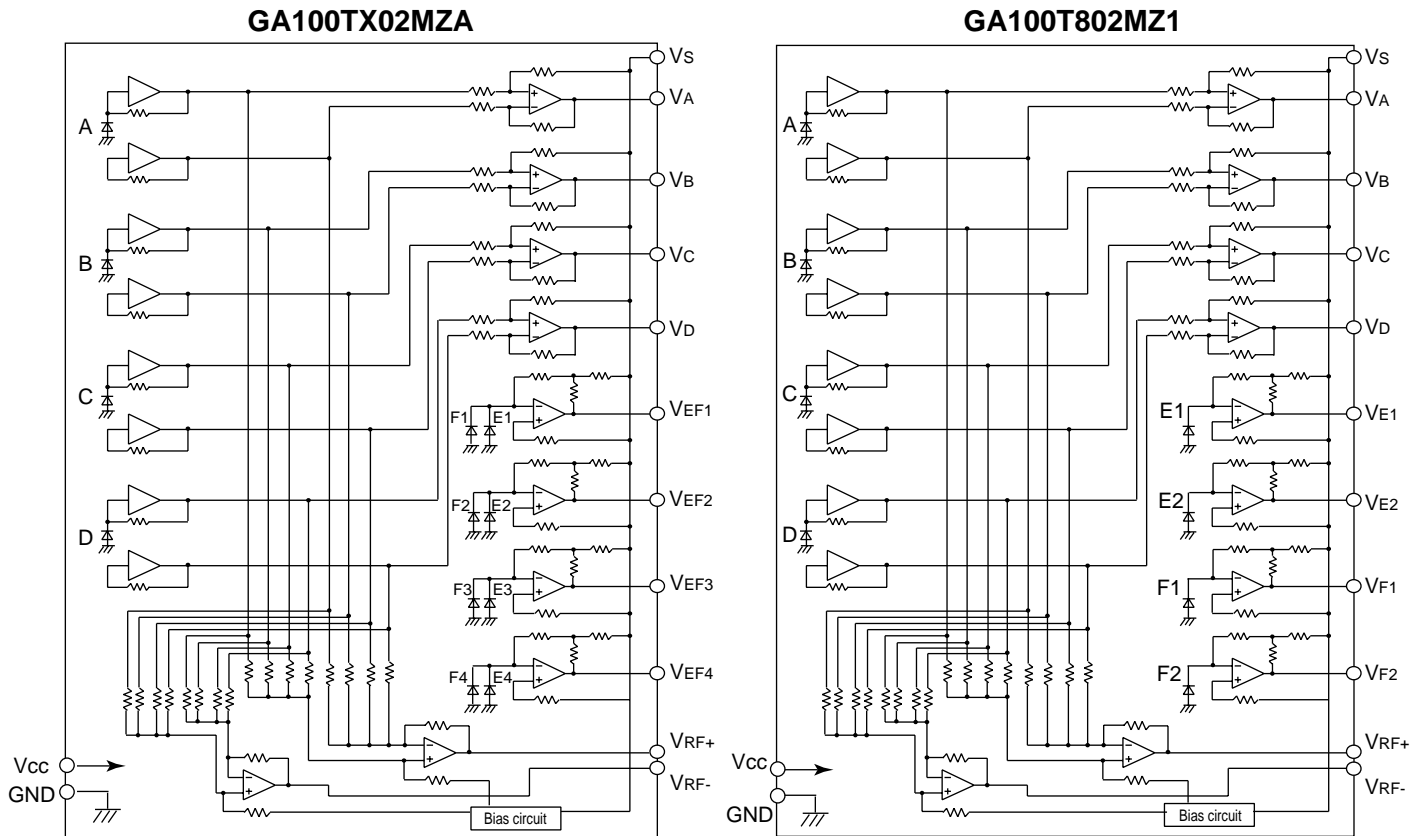
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# OPIC Light Detector

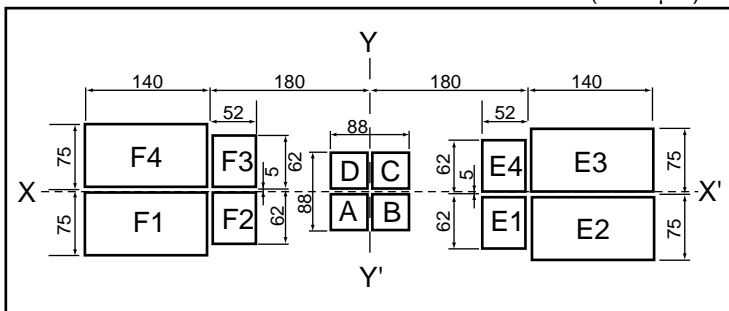
### Internal Block Diagram



### Detecting Pattern of Photodiode

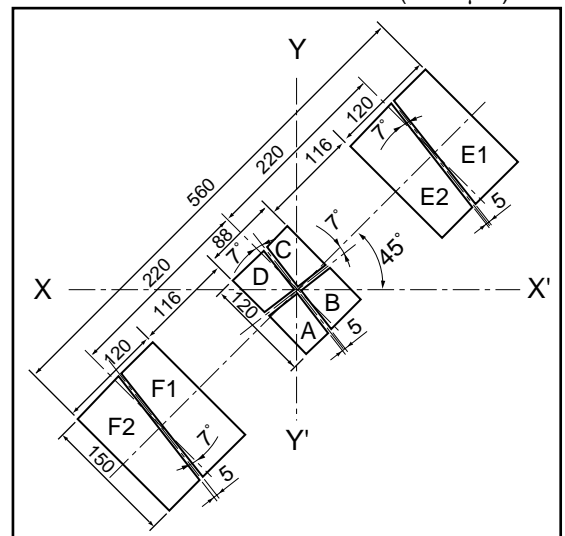
#### GA100TX02MZA

(Unit :  $\mu\text{m}$ )



#### GA100T802MZ1

(Unit :  $\mu\text{m}$ )



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    - Office automation equipment
    - Telecommunication equipment [terminal]
    - Test and measurement equipment
    - Industrial control
    - Audio visual equipment
    - Consumer electronics
  - (ii) Measures such as fail-safe function and redundant design should be taken to ensure reliability and safety when SHARP devices are used for or in connection with equipment that requires higher reliability such as:
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    - Traffic signals
    - Gas leakage sensor breakers
    - Alarm equipment
    - Various safety devices, etc.
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