SHARP

Under development	
New product	●

GA100T8R42MZ OPIC Light Detector

*OPIC Light Detector for 40× Speed Writing CD-R/RW, 10× Speed Reading DVD-ROM

■ Features

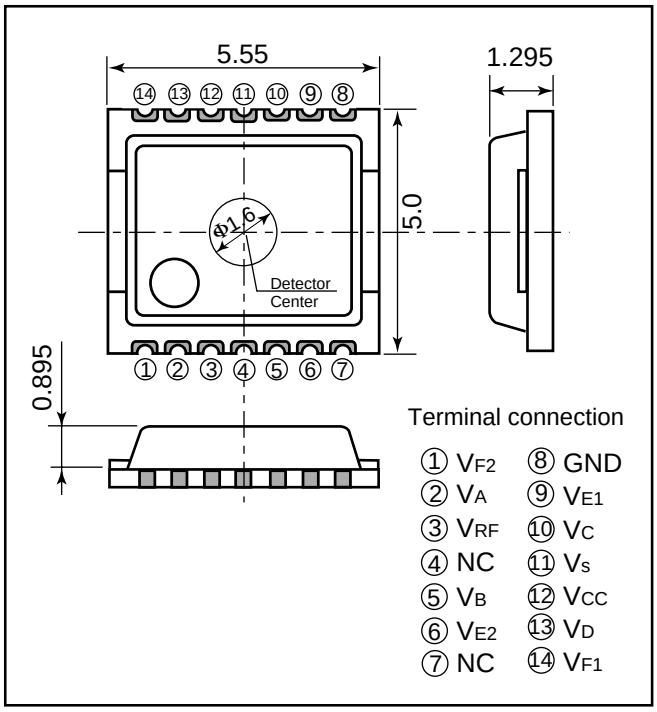
(1) Wide dynamic range : Vamp=1.8V(MIN.)
(2) OPIC light detector with built-in RF amplifier
(Integrates 8-division PIN photodiode and Amp. IC onto a single chip)
CD-R : 40× speed writing
CD-ROM : 50× speed reading
DVD-ROM: 10× speed reading
(3) Built-in bypass capacitor for power supply
(4) Can read various discs such as CD-ROM, CD-R/RW, DVD-ROM, DVD-RAM/R/RW, DVD+R/RW
(5) Surface mount-leadless package
(Package dimensions: 5.0 × 5.55 × 1.295mm)
(6) Applicable for reflow

■ Applications

(1) CD-R/RW drives
(2) DVD-R/RW drives
(3) DVD+R/RW drives

■ 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.

■ Specifications

(λ=780nm, Ta=25˚C)

Parameter	Symbol	Characteristics	Condition
Supply voltage	Vcc	4.5 to 5.5 V	-
Output off-set voltage	Vod	± 20 mV	VA ~ VD, Vs base
Sensitivity1	RP1	TYP. 8.0 mV/μW	VA ~ VD
Sensitivity2	RP2	TYP. 20.0 mV/μW	VRF
Response frequency	fc	MIN. 50 MHz	VRF, -3 dB
Dynamic range	Vamp	MIN. 1.8 V	VA ~ VD, Vs base
Output noise level	Vn	TYP. - 73 dBm	VRF, f=36 MHz,BW=30 kHz
Settling time	Tset	MAX. 24 ns	VA ~ VD, Output 1.8 V to 18 mV
Operating temperature	Topr	- 10 to + 80˚C	-

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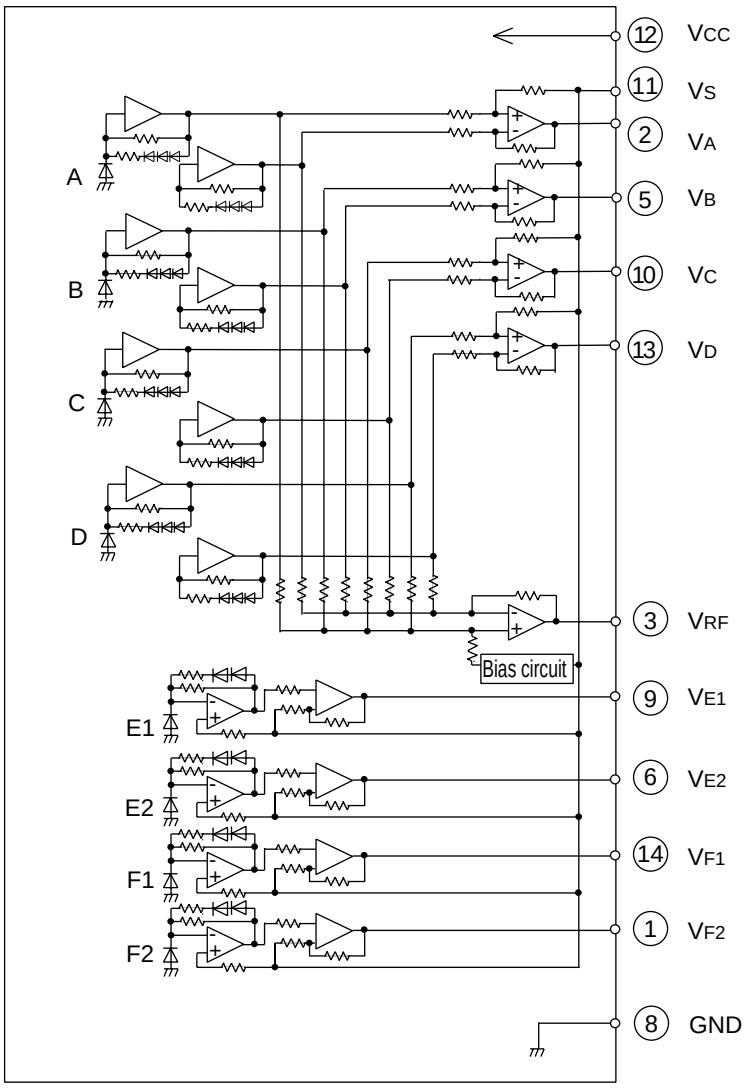
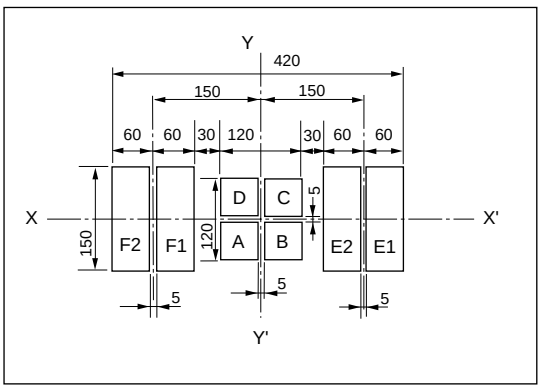
■ Internal Block Diagram



■ Detecting Pattern of Photodiode

Unit : µm



As of September, 2002

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- Observe the following points when using any devices in this publication. SHARP takes no responsibility for damage caused by improper use of the devices which does not meet the conditions and absolute maximum ratings to be used specified in the relevant specification sheet nor meet the following conditions:

  (i) The devices in this publication are designed for use in general electronic equipment designs such as:
  --- Personal computers
  --- 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:
  --- Transportation control and safety equipment (i.e., aircraft, trains, automobiles, etc.)
  --- Traffic signals
  --- Gas leakage sensor breakers
  --- Alarm equipment
  --- Various safety devices, etc.

  (iii) SHARP devices shall not be used for or in connection with equipment that requires an extremely high level of reliability and safety such as:
  --- Space applications
  --- Telecommunication equipment [trunk lines]
  --- Nuclear power control equipment
  --- Medical and other life support equipment (e.g., scuba).

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