# GA100TX03MZ OPIC Light Detector

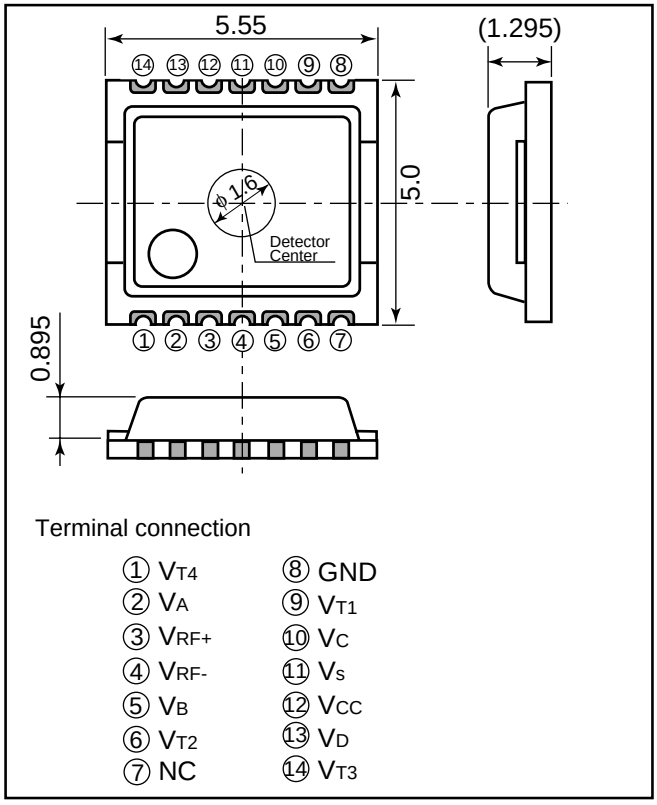
*OPIC Light Detector for 16× Speed DVD-ROM

## ■ Features

( 1 ) OPIC light detector with built-in RF amplifier (Integrates 12-division PIN photodiode and Amp. IC onto a single chip)
( 2 ) For 12× to 16× Speed DVD-ROM (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 ) Differential Amp. output that can reduce external disturbing noise
( 6 ) Surface mount-leadless package (Package dimensions : 5.0 × 5.55 × 1.295mm)
( 7 ) Applicable for reflow

## ■ Outline Dimensions

(Unit:mm)




Terminal connection

| | |
|---|---|
| ① $V_{T4}$ | ⑧ GND |
| ② $V_A$ | ⑨ $V_{T1}$ |
| ③ $V_{RF+}$ | ⑩ $V_C$ |
| ④ $V_{RF-}$ | ⑪ $V_S$ |
| ⑤ $V_B$ | ⑫ $V_{CC}$ |
| ⑥ $V_{T2}$ | ⑬ $V_D$ |
| ⑦ NC | ⑭ $V_{T3}$ |

## ■ Applications

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

* "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

(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 |
| Sensitivity (A,B,C,D) | Rp1 | TYP. 22.9 mV/μW | TYP. 24.6 mV/μW | - |
| Sensitivity (RF) | Rp2 | TYP. 14.1 mV/μW | TYP. 15.2 mV/μW | - |
| 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 | | - |

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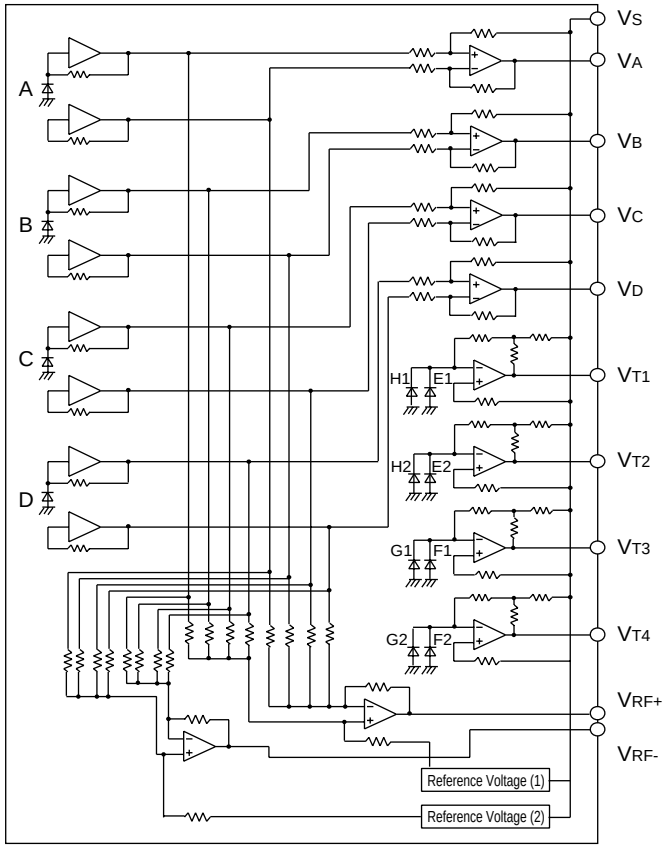
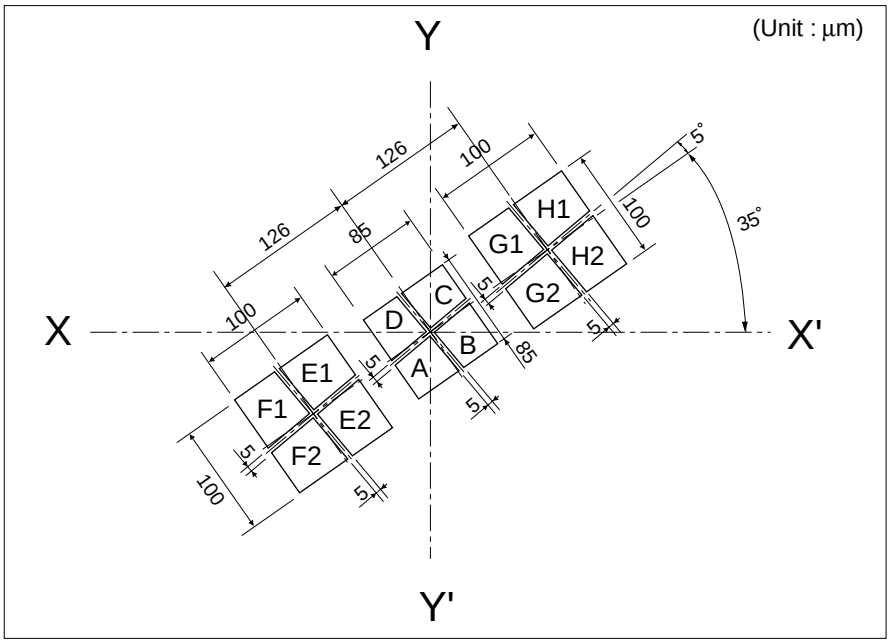
## ■ Internal Block Diagram




## ■ Detecting Pattern of Photodiode



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  --- Office automation equipment
  --- Telecommunication equipment [terminal]
  --- Test and measurement equipment
  --- Industrial control
  --- Audio visual equipment
  --- Consumer electronics

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  --- Traffic signals
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  --- Telecommunication equipment [trunk lines]
  --- Nuclear power control equipment
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