

SG - 2BC

The SG - 2BC reflective sensor combines a GaAs IRED with a high - sensitivity phototransistor in a super - mini (4) ceramic package, reducing installation space.

FEATURES

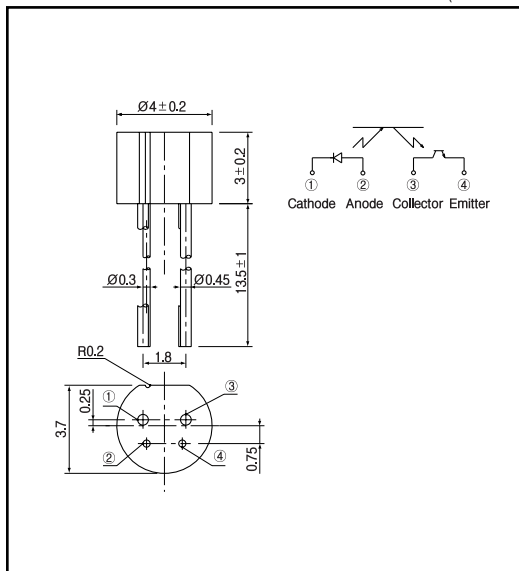
- Compact (ø4mm)
- High performance
- High - speed response
- Easy to mount on P.C.B.
- Widely applicable

APPLICATIONS

- Timing sensors
- Edge sensors
- Micro floppy disk drives
- Level sensors of liquid

DIMENSIONS

(Unit : mm)



MAXIMUM RATINGS

(Ta=25)

| | Item | Symbol | Rating | Unit |
|--------|-----------------------------|-------------------|-----------|------|
| Input | Power dissipation | P _D | 75 | mW |
| | Reverse voltage | V _R | 5 | V |
| | Forward current | I _F | 50 | mA |
| | Pulse forward current *1 | I _{FP} | 1 | A |
| Output | Collector power dissipation | P _C | 75 | mW |
| | Collector current | I _C | 20 | mA |
| | C - E voltage | V _{CE0} | 30 | V |
| | E - C voltage | V _{E0} | 3 | V |
| | Operating temp. | T _{opr.} | - 20 +90 | |
| | Storage temp. | T _{stg.} | - 30 +100 | |
| | Soldering temp. | T _{sol.} | 260 | |

*1. t w 100 μsec.period :T=10msec.

*2. For MAX. 5 seconds at the position of 2mm from the package

ELECTRO-OPTICAL CHARACTERISTICS

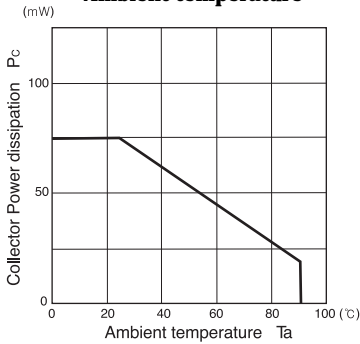
(Ta=25)

| | Item | Symbol | Conditions | Min. | Typ. | Max. | Unit. |
|------------------|------------------------|-------------------|--|------|------|------|-------|
| Input | Forward voltage | V _F | I _F = 4mA | | | 1.2 | V |
| | Reverse current | I _R | V _R = 5V | | | 10 | μA |
| | Capacitance | C _t | V = 0V, f = 1KHz | | 25 | | pF |
| | Peak wavelength | λ | | | 940 | | nm |
| Output | Collector dark current | I _{CEO} | V _{CE} = 10V | | | 0.1 | μA |
| | Ligh current | I _L | V _{CE} = 2V, I _F = 4mA | | 100 | | μA |
| | Leakage current | I _{CEO0} | V _{CE} = 2V, I _F = 4mA | | | 0.1 | μA |
| Switching speeds | Rise time | t _r | V _{CC} = 2V, I _F = 100μA, R = 1k | | 30 | | μsec. |
| | Fall time | t _f | | | 30 | | μsec. |

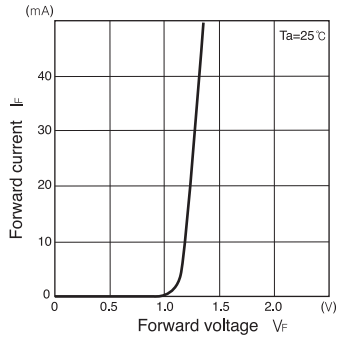
Photo interrupters(Reflective)

SG - 2BC

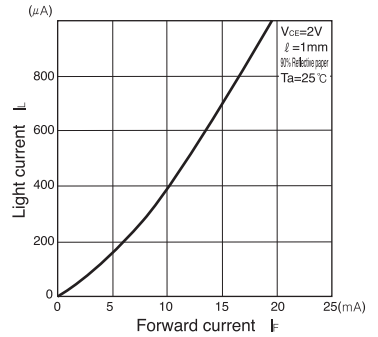
Collector power dissipation Vs. Ambient temperature



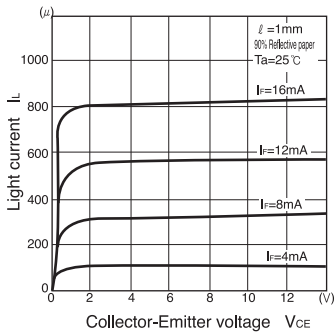
Forward current Vs. Forward voltage



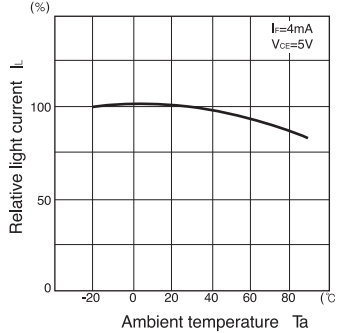
Light current Vs. Forward current



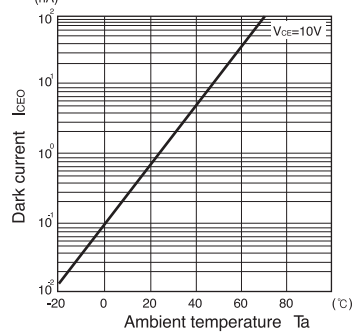
Light current Vs. Collector-Emitter voltage



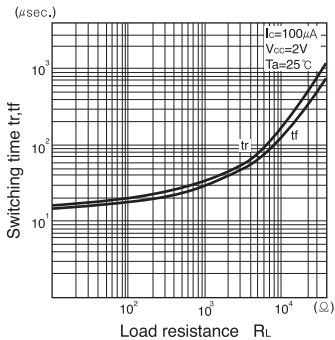
Relative light current Vs. Ambient temperature



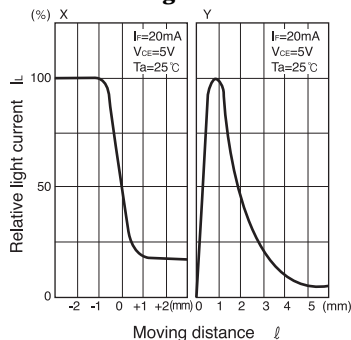
Dark current Vs. Ambient temperature



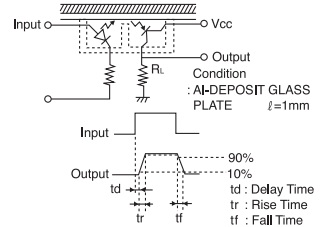
Switching time Vs. Load resistance



Relative light current Vs. Moving distance



Switching time measurement circuit



Method of measuring position characteristic

