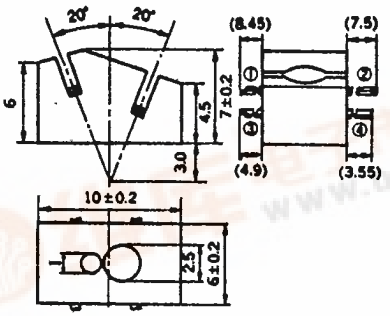
# PHOTO SENSER
# PS6001A

## PHOTO REFLECTIVE SENSER

### DESCRIPTION

The PS6001A is a photo reflective senser containing a GaAs light emitting diode and an NPN silicon photo-transistor.

### PACKAGE DIMENSIONS
(Unit : mm)

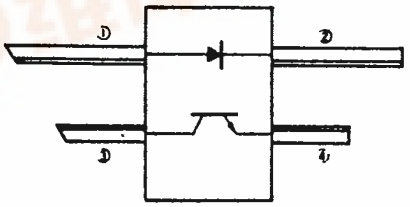



① Anode } LED
② Cathode
③ Collector } photo Tr
④ Emitter

### ABSOLUTE MAXIMUM RATINGS ($T_a$ = 25 °C)

| | | | |
|---|---|---|---|
| Diode | | | |
| Reverse Voltage | $V_R$ | 3 | V |
| Forward Current | $I_F$ | 50 | mA |
| Power Dissipation | $P_C$ | 75 | mW |
| Transistor | | | |
| Collector to Emitter Voltage | $V_{CEO}$ | 30 | V |
| Collector Current | $I_C$ | 40 | mA |
| Power Dissipation | $P_C$ | 100 | mW |
| Junction Temperature | $T_j$ | 80 | °C |
| Storage Temperature | $T_{stg}$ | −30 to +80 | °C |

### TERMINAL CONNECTION (Top View)



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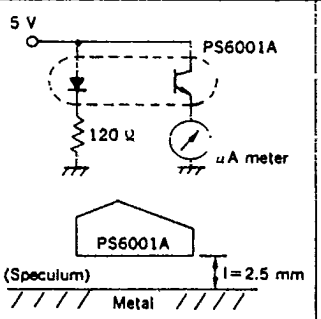
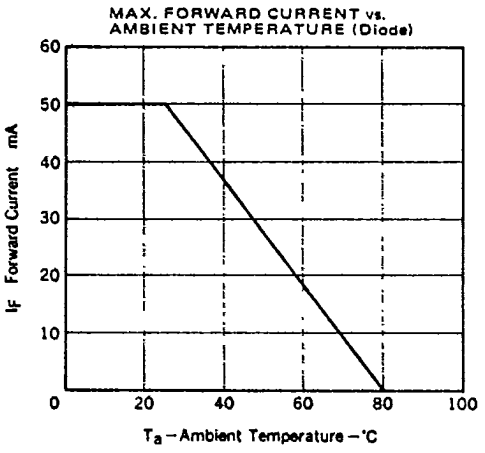
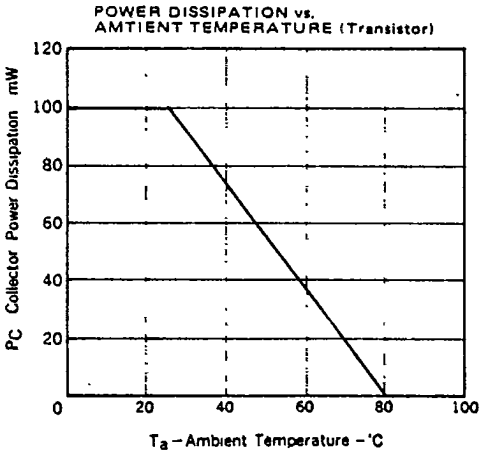
## ELECTRICAL CHARACTERISTICS ($T_a$ = 25 °C)

| CHARACTERISTICS | SYMBOL | TEST CONDITIONS | MIN. | TYP. | MAX. | UNIT |
|---|---|---|---|---|---|---|
| Forward Voltage | $V_F$ | $I_F$ = 30 mA | | 1.2 | 1.4 | V |
| Reverse Current | $I_R$ | $V_R$ = 3 V | | | 50 | μA |
| Peak Emittion Wavelength | $\lambda_{peak}$ | $I_F$ = 30 mA | | 940 | | nm |
| Collector Saturation Voltage | $V_{CE(sat)}$ | $I_C$ = 20 μA | | | 0.3 | V |
| Output Leak Current | $I_{leak}$ | $I_F$ = 30 mA, $V_{CE}$ = 5 V, L = 0 lx | | | 1.0 | μA |
| Output Current | $I_C$ |  | 100 | 200 | | μA |

## TYPICAL CHARACTERISTICS ($T_a$ = 25 °C)



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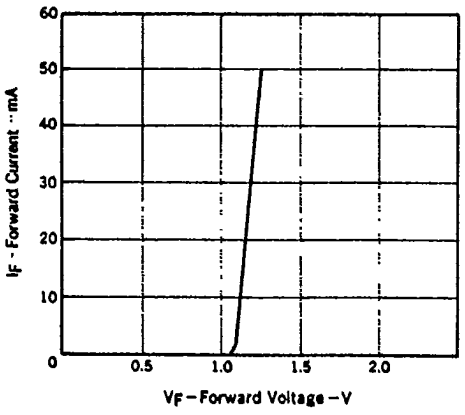
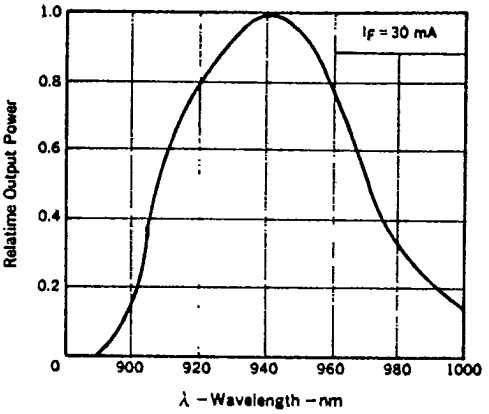
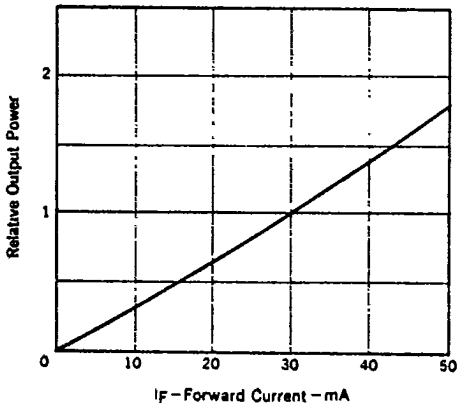
MAX. FORWARD CURRENT vs. FORWARD VOLTAGE



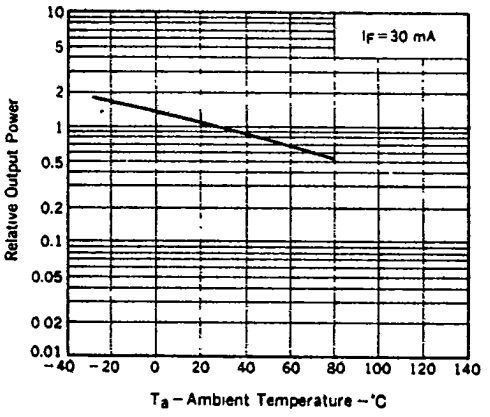

SPECTRAL DISTRIBUTION



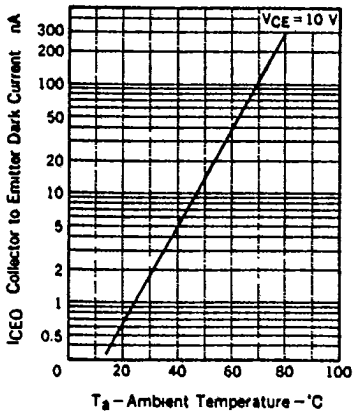

RELATIVE OUTPUT POWER vs. FORWARD CURRENT



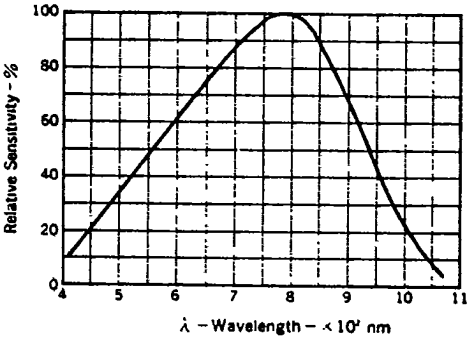

RELATIVE OUTPUT POWER vs. AMTIENT TEMPERATURE



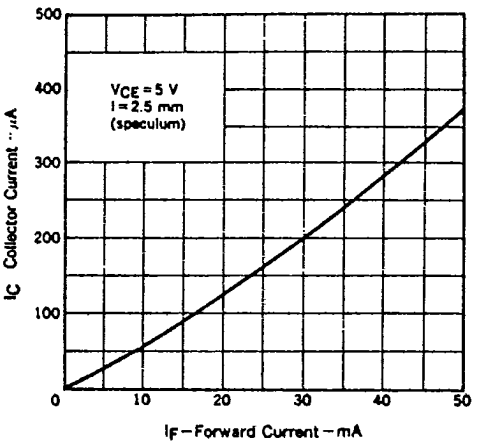

COLLECTOR DARK CURRENT vs. AMBIENT TEMPERATURE




SPECTRAL RESPONSE



TRANSFER CHARACTERISTICS




TRANSFER RATIO vs. DISTANCE BETWEEN REFLECTION AND DEVICE