

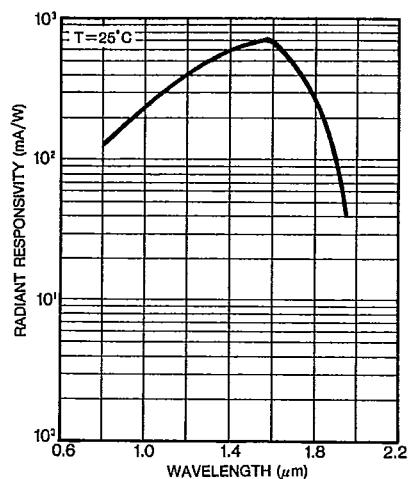
# Ge Photodiodes: Uncooled Types

T-41-41

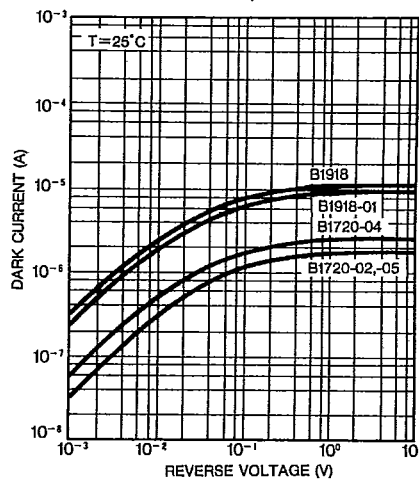
| Type No. | Out-line No.<br>(P.28/29) | Package     | Window Material <sup>A</sup> | Effective Sensitive Area Size<br>(mm) | Effective Sensitive Area<br>(mm <sup>2</sup> ) | Characteristics           |                                                               |                                                       |                                               |                                                         |     |
|----------|---------------------------|-------------|------------------------------|---------------------------------------|------------------------------------------------|---------------------------|---------------------------------------------------------------|-------------------------------------------------------|-----------------------------------------------|---------------------------------------------------------|-----|
|          |                           |             |                              |                                       |                                                | Measurement Temp.<br>(°C) | Peak Responsivity Wavelength<br>$\lambda_p$ ( $\mu\text{m}$ ) | IR Cutoff Wavelength<br>$\lambda_c$ ( $\mu\text{m}$ ) | Radiant Responsivity at $\lambda_p$<br>(mA/W) | Short Circuit Current<br>I <sub>sh</sub> 100 lux, 2856K |     |
| B1720-04 | ①                         | 3 pin TO-18 | B                            | 1×1                                   | 1                                              | +25                       | 1.55                                                          | 1.9                                                   | 700                                           | 1.6                                                     | 2   |
| B1720-02 | ①                         | 3 pin TO-18 | B                            | $\phi 1$                              | 0.8                                            | +25                       | 1.55                                                          | 1.9                                                   | 700                                           | 1                                                       | 1.4 |
| B1720-05 | ②                         | 3 pin TO-18 | B (Lens type)                | $\phi 1$                              | 0.8                                            | +25                       | 1.55                                                          | 1.9                                                   | 700                                           | 9                                                       | 12  |
| B2144    | ④                         | 3 pin TO-5  | B                            | 2×2                                   | 4                                              | +25                       | 1.55                                                          | 1.9                                                   | 700                                           | 5                                                       | 7   |
| B2144-01 |                           | 3 pin TO-5  | B                            | $\phi 2$                              | 3.1                                            | +25                       | 1.55                                                          | 1.9                                                   | 700                                           | 4                                                       | 6   |
| B1918    |                           | 3 pin TO-5  | B                            | 3×3                                   | 9                                              | +25                       | 1.55                                                          | 1.9                                                   | 700                                           | 13                                                      | 16  |
| B1918-01 |                           | 3 pin TO-5  | B                            | $\phi 3$                              | 7.1                                            | +25                       | 1.55                                                          | 1.9                                                   | 700                                           | 10                                                      | 13  |
| B1919    | ⑤                         | TO-8        | B                            | 5×5                                   | 25                                             | +25                       | 1.55                                                          | 1.9                                                   | 700                                           | 32                                                      | 40  |
| B1919-01 |                           | TO-8        | B                            | $\phi 5$                              | 19.6                                           | +25                       | 1.55                                                          | 1.9                                                   | 700                                           | 24                                                      | 30  |
| B1920-01 | ⑥                         | Ceramic     | B                            | $\phi 10$                             | 78.5                                           | +25                       | 1.55                                                          | 1.9                                                   | 700                                           | 90                                                      | 120 |

<sup>A</sup> B: Borosilicate glass window

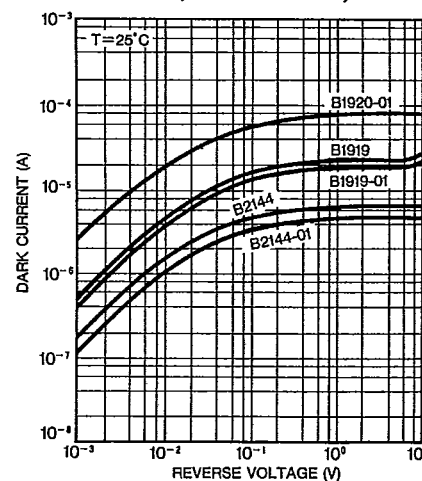
## ● Spectral Response



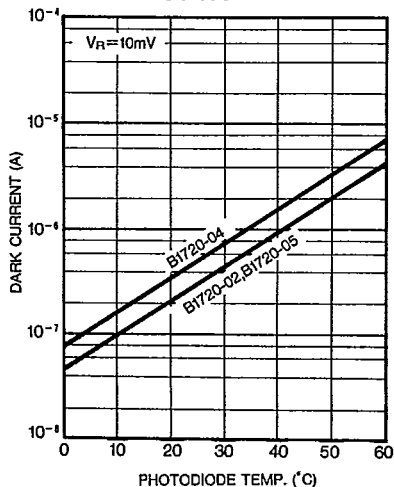
## ● Dark Current vs. Reverse Voltage for B1720 Series, B1918 Series



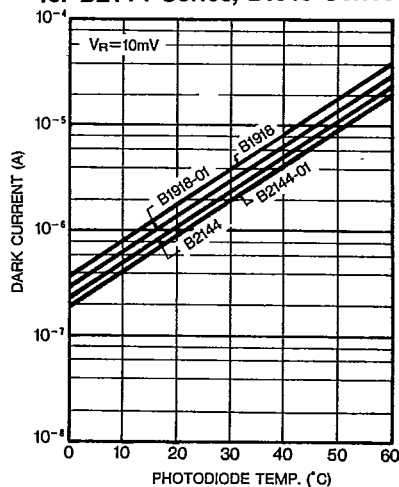
## ● Dark Current vs. Reverse Voltage for B2144 Series, B1919 Series, B1920-01



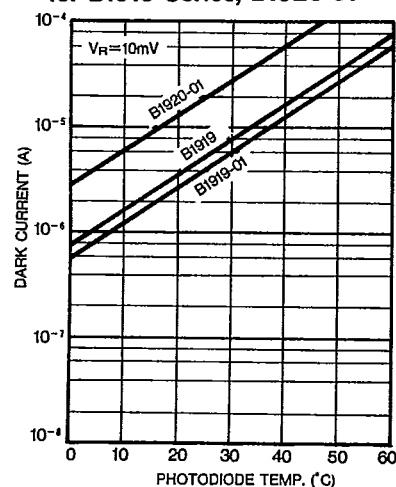
## ● Dark Current vs. Temperature for B1720 Series



## ● Dark Current vs. Temperature for B2144 Series, B1918 Series

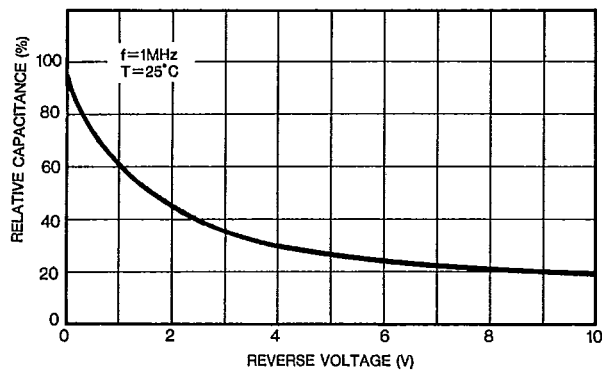


## ● Dark Current vs. Temperature for B1919 Series, B1920-01

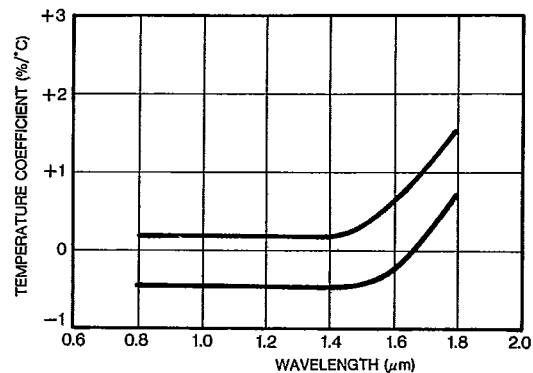


| Characteristics                                     |              |                                                                       |                                         |                                          |                                                                              |                                                                                          | Maximum Reverse Voltage<br>V <sub>R</sub> max. | Temperature Range |                 | Type No. |
|-----------------------------------------------------|--------------|-----------------------------------------------------------------------|-----------------------------------------|------------------------------------------|------------------------------------------------------------------------------|------------------------------------------------------------------------------------------|------------------------------------------------|-------------------|-----------------|----------|
| Dark Current I <sub>d</sub><br>V <sub>R</sub> =10mV |              | Shunt Resist-<br>ance R <sub>sh</sub><br>V <sub>R</sub> =10mV<br>(kΩ) | NEP<br>at λ p<br>(W/Hz <sup>1/2</sup> ) | D *<br>at λ p<br>(cmHz <sup>1/2</sup> W) | Junction Capacitance C <sub>j</sub><br>V <sub>R</sub> =1V,<br>f=1MHz<br>(nF) | Rise Time t <sub>r</sub><br>V <sub>R</sub> =1V,<br>R <sub>L</sub> =1kΩ<br>10~90%<br>(μs) |                                                | Operating<br>(°C) | Storage<br>(°C) |          |
| Typ.<br>(μA)                                        | Max.<br>(μA) |                                                                       |                                         |                                          |                                                                              |                                                                                          |                                                |                   |                 |          |
| 0.5                                                 | 1            | 20                                                                    | 8×10 <sup>-13</sup>                     | 1×10 <sup>11</sup>                       | 0.3                                                                          | 1                                                                                        | 10                                             | -30~+60           | -55~+80         | B1720-04 |
| 0.3                                                 | 0.6          | 33                                                                    | 8×10 <sup>-13</sup>                     | 1×10 <sup>11</sup>                       | 0.2                                                                          | 1                                                                                        | 10                                             | -30~+60           | -55~+80         | B1720-02 |
| 0.3                                                 | 0.6          | 33                                                                    | 8×10 <sup>-13</sup>                     | 1×10 <sup>11</sup>                       | 0.2                                                                          | 1                                                                                        | 10                                             | -30~+60           | -55~+80         | B1720-05 |
| 1.5                                                 | 3            | 7                                                                     | 1×10 <sup>-12</sup>                     | 1×10 <sup>11</sup>                       | 2                                                                            | 5                                                                                        | 10                                             | -30~+60           | -55~+80         | B2144    |
| 1.2                                                 | 2.4          | 8                                                                     | 1×10 <sup>-12</sup>                     | 1×10 <sup>11</sup>                       | 1.6                                                                          | 5                                                                                        | 10                                             | -30~+60           | -55~+80         | B2144-01 |
| 2.5                                                 | 5            | 4                                                                     | 2×10 <sup>-12</sup>                     | 1×10 <sup>11</sup>                       | 4                                                                            | 10                                                                                       | 10                                             | -30~+60           | -55~+80         | B1918    |
| 2                                                   | 4            | 5                                                                     | 2×10 <sup>-12</sup>                     | 1×10 <sup>11</sup>                       | 3                                                                            | 10                                                                                       | 10                                             | -30~+60           | -55~+80         | B1918-01 |
| 5                                                   | 10           | 2                                                                     | 2×10 <sup>-12</sup>                     | 1×10 <sup>11</sup>                       | 8                                                                            | 20                                                                                       | 5                                              | -30~+60           | -55~+80         | B1919    |
| 4                                                   | 8            | 2.5                                                                   | 2×10 <sup>-12</sup>                     | 1×10 <sup>11</sup>                       | 6                                                                            | 20                                                                                       | 5                                              | -30~+60           | -55~+80         | B1919-01 |
| 20                                                  | 40           | 0.5                                                                   | 4×10 <sup>-12</sup>                     | 1×10 <sup>11</sup>                       | 20                                                                           | 50                                                                                       | 3                                              | -30~+60           | -55~+80         | B1920-01 |

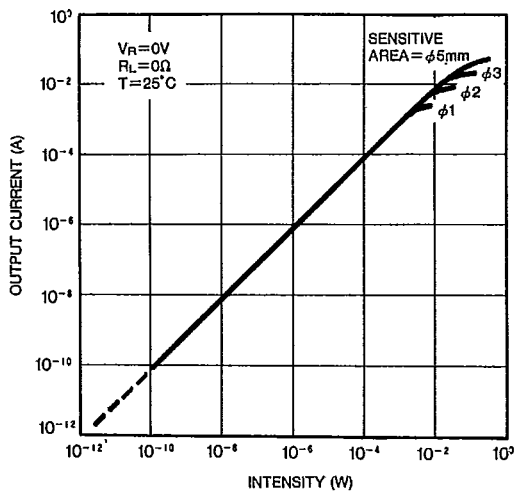
### ● Junction Capacitance vs. Reverse Voltage



### ● Temperature Coefficient of Responsivity



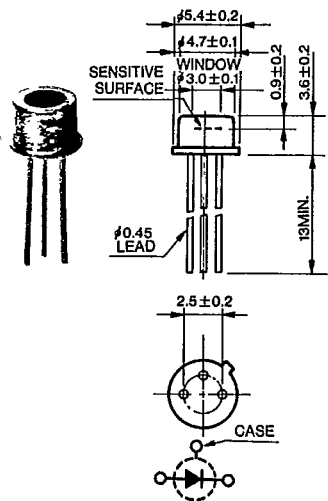
### ● Linearity



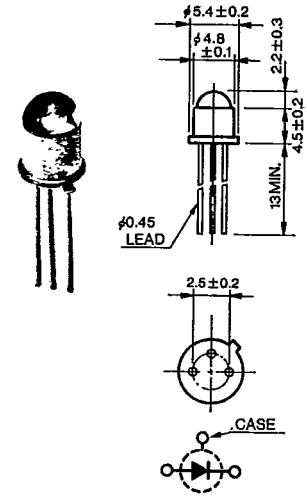
## Dimensional Outlines

T-90-20

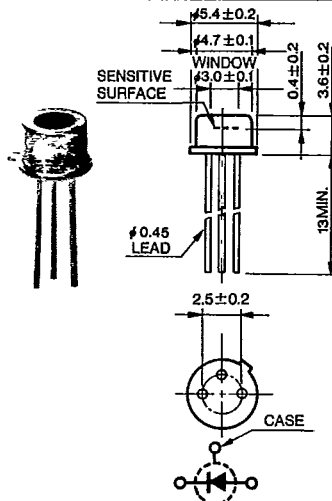
① B1720-04, B2297-02, etc.



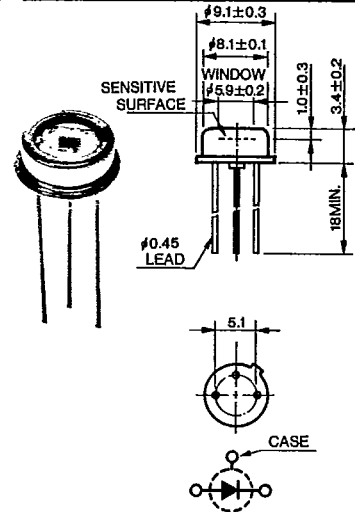
② B1720-05



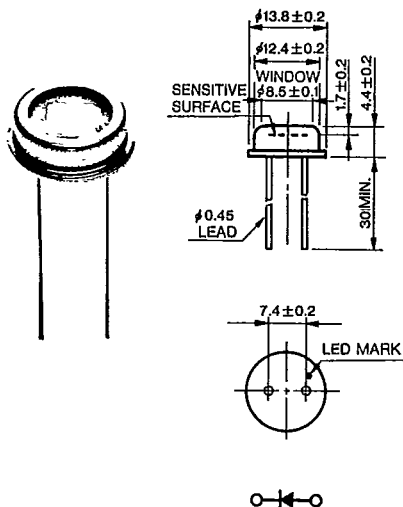
③ B2834, B2834-01



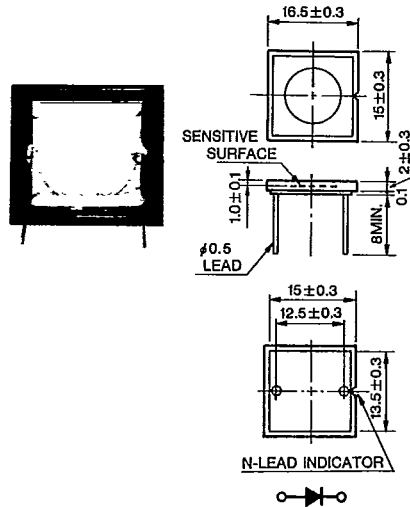
④ B2144, B1918, etc.



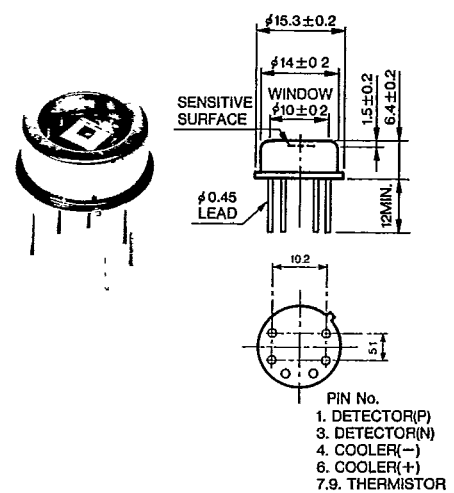
⑤ B1919, B1919-01



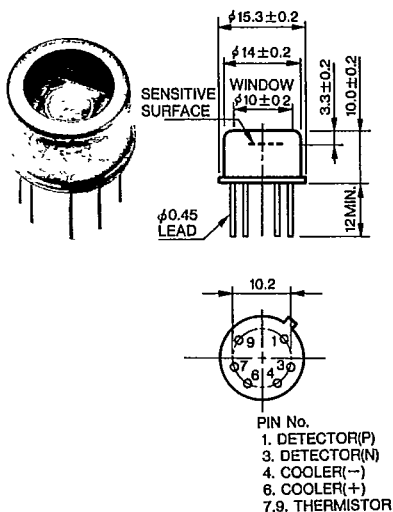
⑥ B1920-01



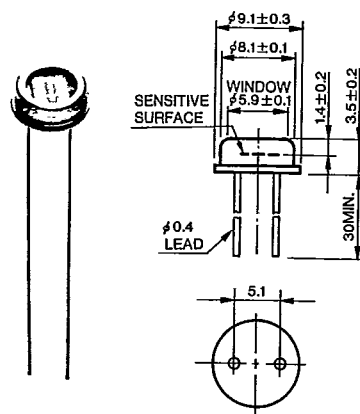
⑦ B2538-01, etc. (1-Stage TE)



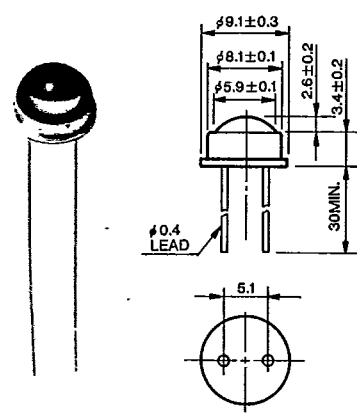
⑧ B2614-01, etc. (2-Stage TE)



⑨ P394A, P394R, P791



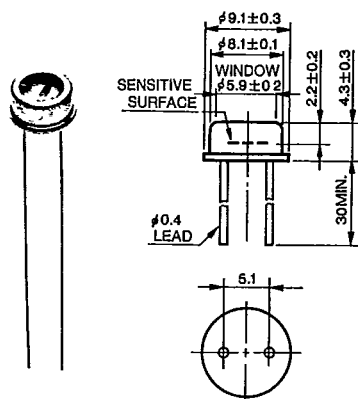
⑩ P3226



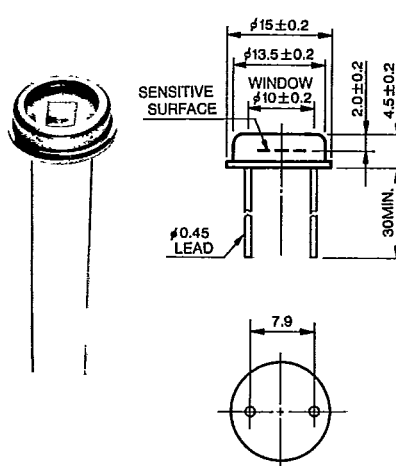
PIN No.  
 1. DETECTOR(P)  
 3. DETECTOR(N)  
 4. COOLER(-)  
 6. COOLER(+)  
 7.9. THERMISTOR

Unit: mm

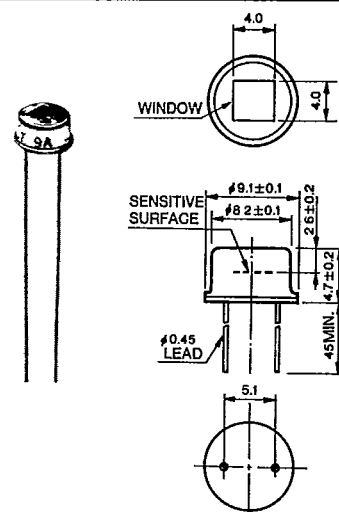
11 P394



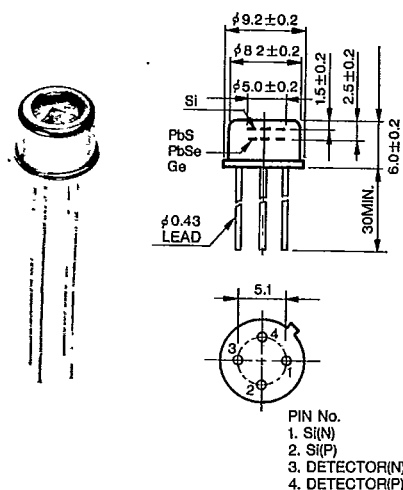
12 P397



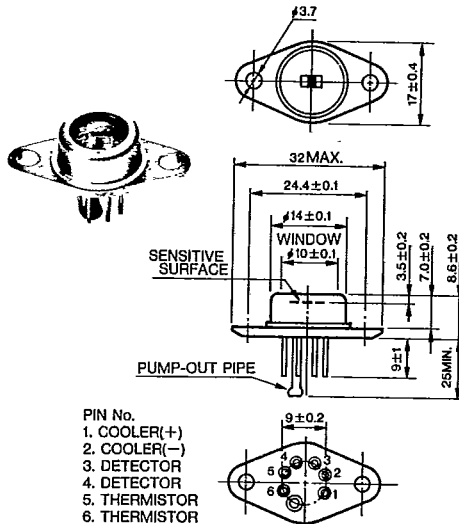
13 P3207



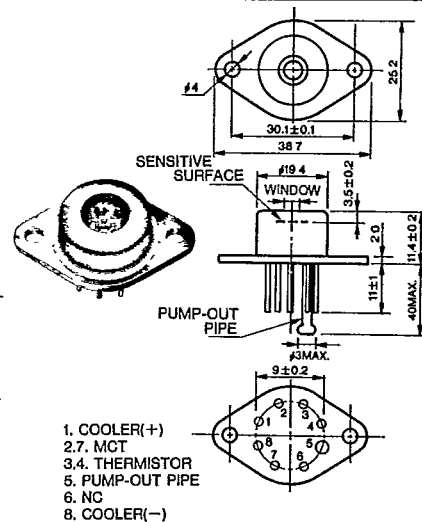
14 K1713-01, K1713-02, K1713-03



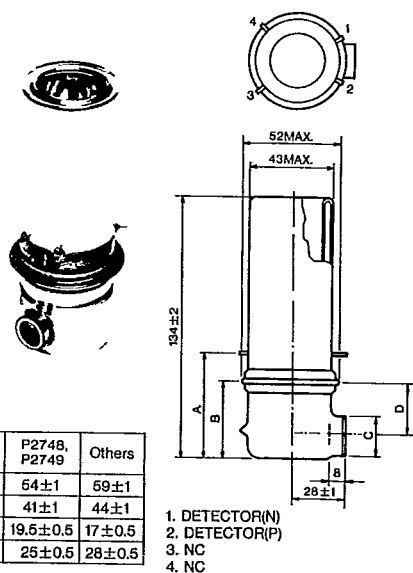
15 P1026, P903 (1-Stage TE)



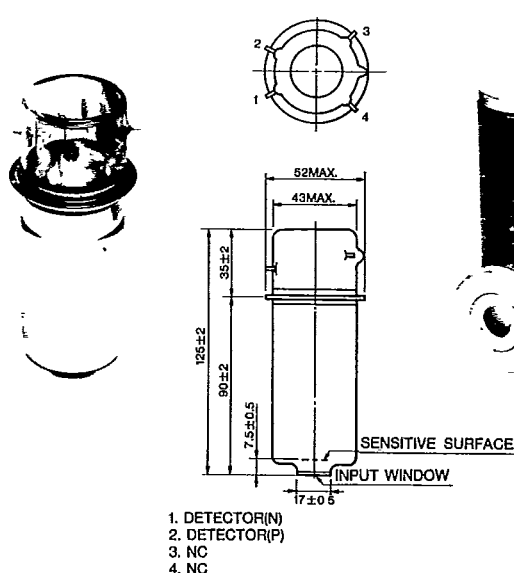
16 P2750 (3-Stage TE)



17 P2748, B2123, P819, etc.



18 P839-02



19 P3257

