

# InAs, InSb Detectors

| Type No. | Out-line No.<br><br>(P.28/29) | Package<br><br><b>A</b> | Effective Sensitive Area<br><br>(mm) | Characteristics (FOV=60°)      |                                                                 |                                                        |                                                             |      |                                                                       |      |                                               |                                                             |                                                    |
|----------|-------------------------------|-------------------------|--------------------------------------|--------------------------------|-----------------------------------------------------------------|--------------------------------------------------------|-------------------------------------------------------------|------|-----------------------------------------------------------------------|------|-----------------------------------------------|-------------------------------------------------------------|----------------------------------------------------|
|          |                               |                         |                                      | Measure-ment Temp.<br><br>(°C) | Peak Respon-sivity Wave-length $\lambda_p$<br>( $\mu\text{m}$ ) | IR Cutoff Wave-length $\lambda_c$<br>( $\mu\text{m}$ ) | $D^*$<br>(500, 1200, 1)<br>( $\text{cmHz}^{1/2}/\text{W}$ ) |      | $D^*$<br>( $\lambda_p$ , 1200, 1)<br>( $\text{cmHz}^{1/2}/\text{W}$ ) |      | Radiant Respon-sivity at $\lambda_p$<br>(A/W) | Shut Resist-ance Typ.<br>$V_R=10\text{mV}$<br>(M $\Omega$ ) | Rise Time $t_r$<br>0~63% Max.<br>( $\mu\text{s}$ ) |
|          |                               |                         |                                      |                                |                                                                 |                                                        | Min.                                                        | Typ. | Min.                                                                  | Typ. |                                               |                                                             |                                                    |

## 2-Stage Thermoelectrically-Cooled InAs

|          |   |            |          |     |     |     |                 |                 |                    |                    |   |                 |   |
|----------|---|------------|----------|-----|-----|-----|-----------------|-----------------|--------------------|--------------------|---|-----------------|---|
| P2837-01 | ③ | 6 pin TO-8 | $\phi 1$ | -30 | 3.2 | 3.6 | $5 \times 10^8$ | $1 \times 10^9$ | $1 \times 10^{10}$ | $2 \times 10^{10}$ | 1 | $4 \times 10^2$ | 1 |
|----------|---|------------|----------|-----|-----|-----|-----------------|-----------------|--------------------|--------------------|---|-----------------|---|

## Dewar Type InAs

|      |   |             |          |               |     |     |                 |                    |                    |                    |   |                 |   |
|------|---|-------------|----------|---------------|-----|-----|-----------------|--------------------|--------------------|--------------------|---|-----------------|---|
| P838 | ⑦ | Glass dewar | $\phi 1$ | -77<br>(196K) | 3.1 | 3.2 | $3 \times 10^9$ | $5 \times 10^9$    | $2 \times 10^{11}$ | $3 \times 10^{11}$ | 1 | $1 \times 10^4$ | 1 |
|      |   |             |          | -77<br>(196K) | 3.0 | 3.1 | $6 \times 10^9$ | $1 \times 10^{10}$ | $4 \times 10^{11}$ | $6 \times 10^{11}$ | 1 | $1 \times 10^6$ | 1 |

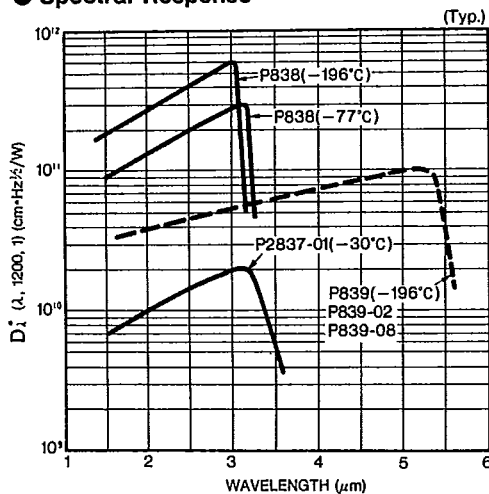
## Dewar Type InSb

|         |   |             |            |               |     |     |                    |                    |                    |                    |   |                 |   |
|---------|---|-------------|------------|---------------|-----|-----|--------------------|--------------------|--------------------|--------------------|---|-----------------|---|
| P839    | ⑦ | Glass dewar | $\phi 0.6$ | -196<br>(77K) | 5.3 | 5.5 | $1 \times 10^{10}$ | $2 \times 10^{10}$ | $7 \times 10^{10}$ | $1 \times 10^{11}$ | 2 | $1 \times 10^7$ | 1 |
| P839-02 | ⑧ |             | $\phi 2$   |               |     |     | $1 \times 10^{10}$ | $2 \times 10^{10}$ | $7 \times 10^{10}$ | $1 \times 10^{11}$ | 2 | $2 \times 10^6$ | 1 |
| P839-08 | ⑦ |             |            |               |     |     | $1 \times 10^{10}$ | $2 \times 10^{10}$ | $7 \times 10^{10}$ | $1 \times 10^{11}$ | 2 | $2 \times 10^6$ | 1 |

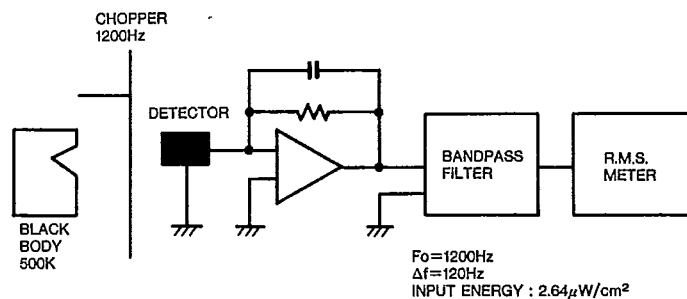
⑦ Sapphire window

\* Avoid storing the detector at high temperatures. Storage temperature range is 0~+60°C.

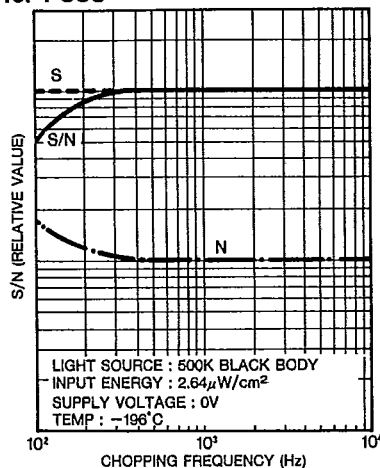
## ● Spectral Response



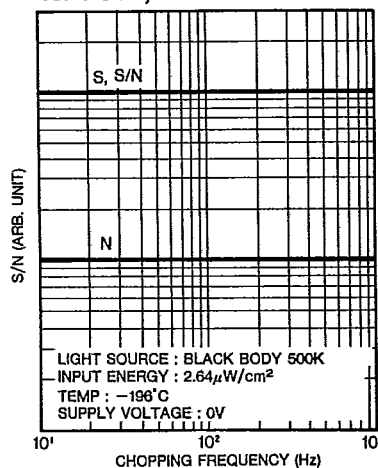
## ● Measurement Block Diagram



## ● S/N Ratio vs. Chopping Frequency for P838



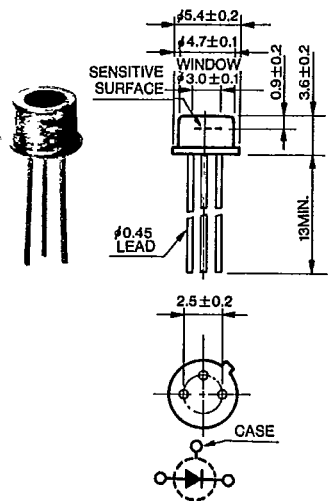
## ● S/N Ratio vs. Chopping Frequency for P839, P839-02 and P839-08



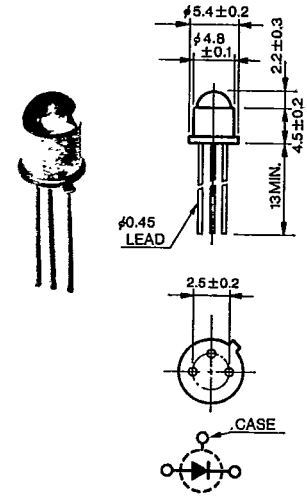
## Dimensional Outlines

T-90-20

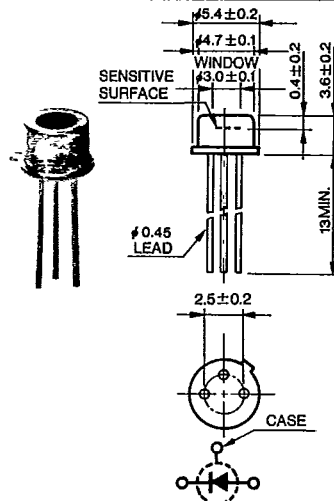
① B1720-04, B2297-02, etc.



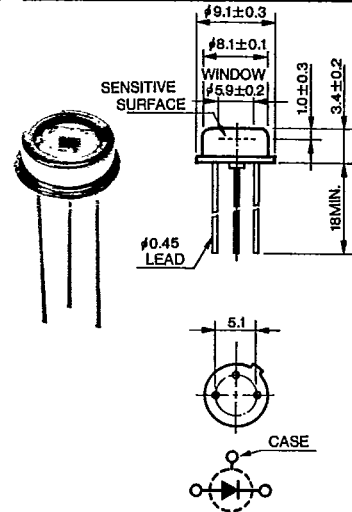
② B1720-05



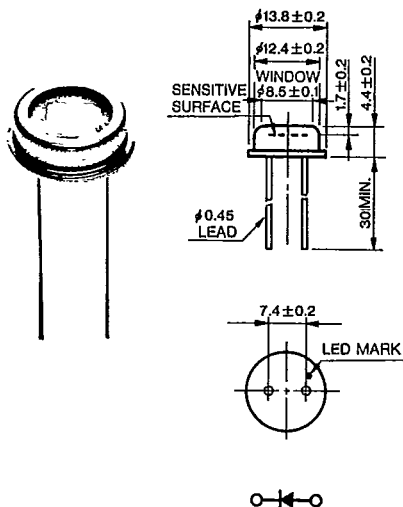
③ B2834, B2834-01



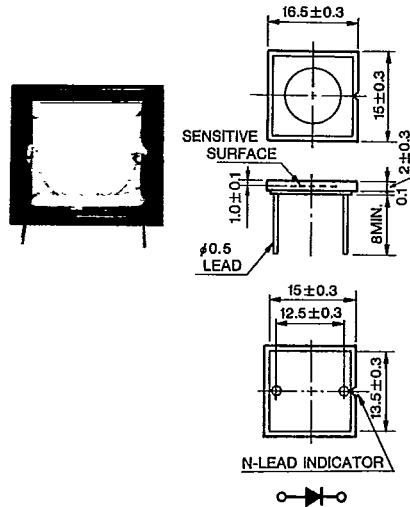
④ B2144, B1918, etc.



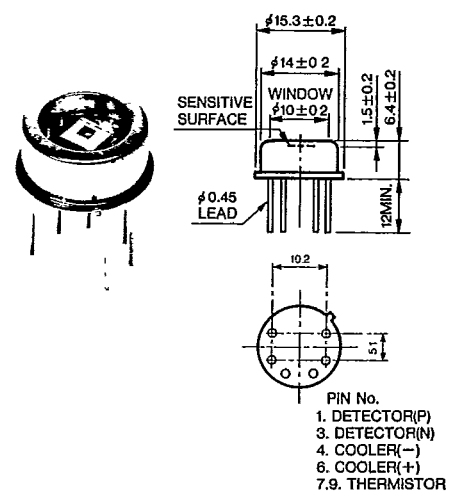
⑤ B1919, B1919-01



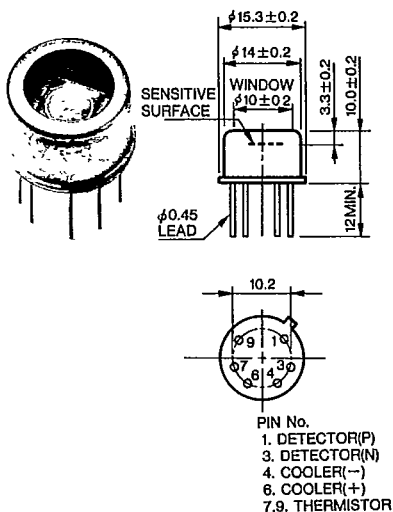
⑥ B1920-01



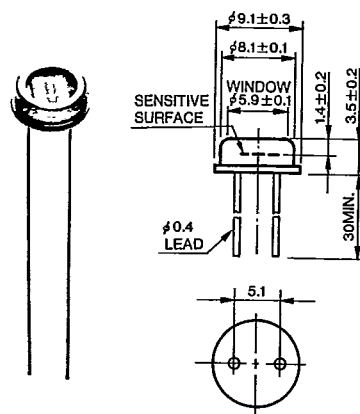
⑦ B2538-01, etc. (1-Stage TE)



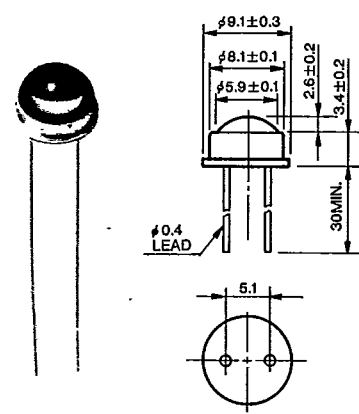
⑧ B2614-01, etc. (2-Stage TE)



⑨ P394A, P394R, P791

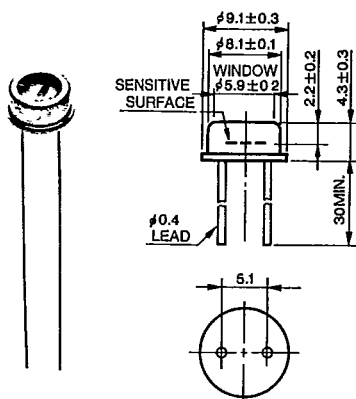


⑩ P3226

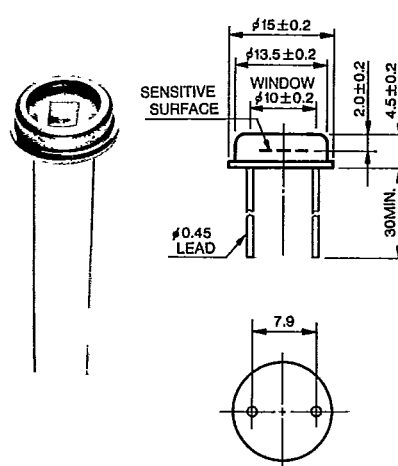


Unit: mm

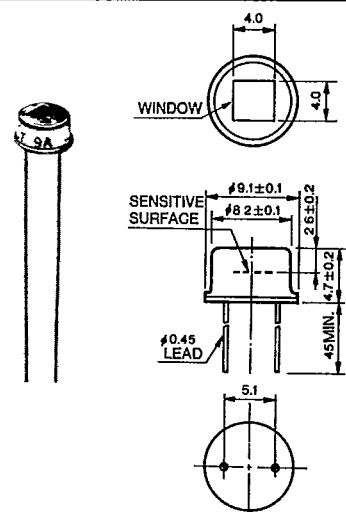
## 11 P394



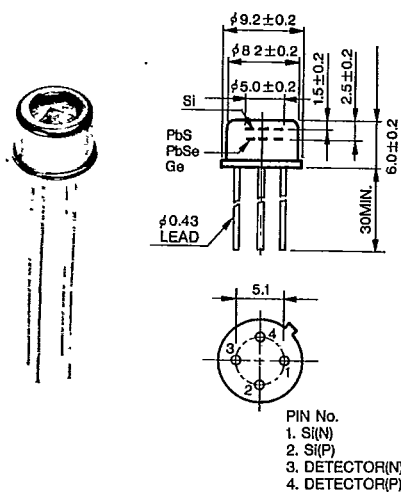
**12 P397**



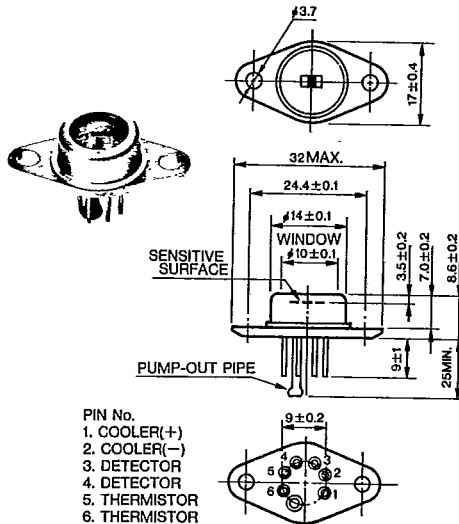
**13 P3207**



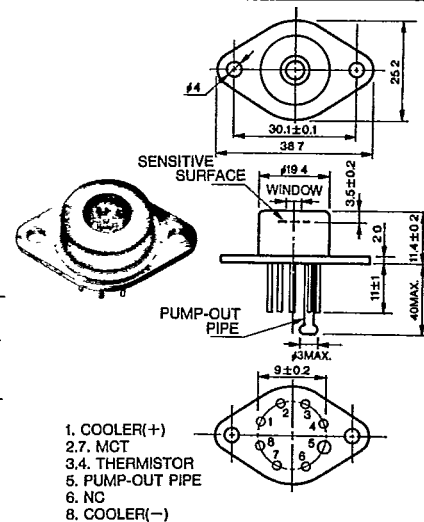
**14 K1713-01,K1713-02,K1713-03**



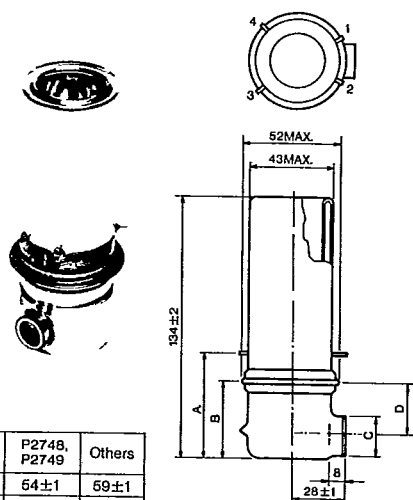
**15 P1026,P903 (1-Stage TE)**



**16 P2750 (3-Stage TE)**



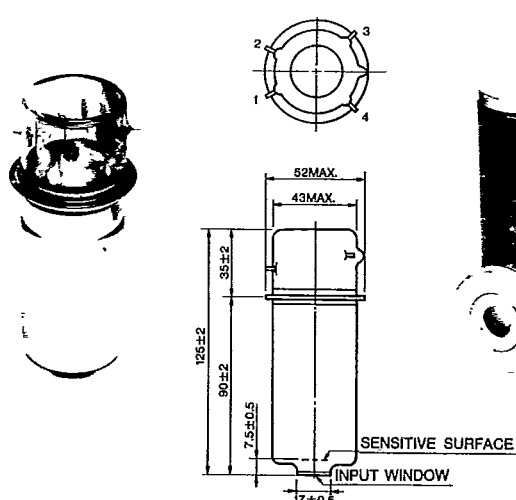
⑪ P2748,B2123,P819, etc.



|   | P2748,<br>P2749 | Others |
|---|-----------------|--------|
| A | 54±1            | 59±1   |
| B | 41±1            | 44±1   |
| C | 19.5±0.5        | 17±0.5 |
| D | 25±0.5          | 28±0.5 |

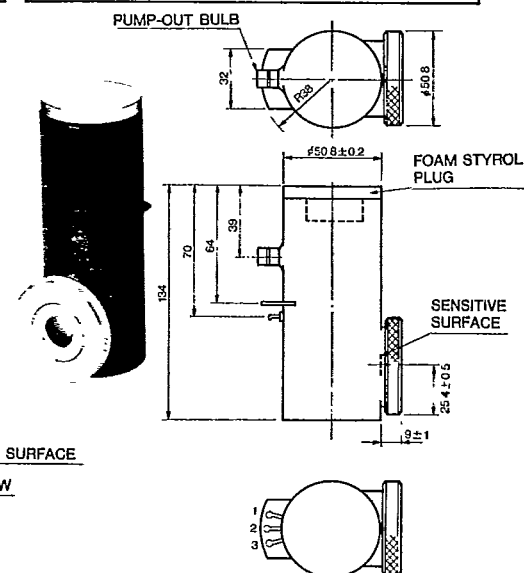
1. DETECTOR(N)  
2. DETECTOR(P)  
3. NC  
4. NC

**18 P839-02**



1. DETECTOR(N)
2. DETECTOR(P)
3. NC
4. NC

**19 P3257**



- 1.3. DETECTOR  
2. NC