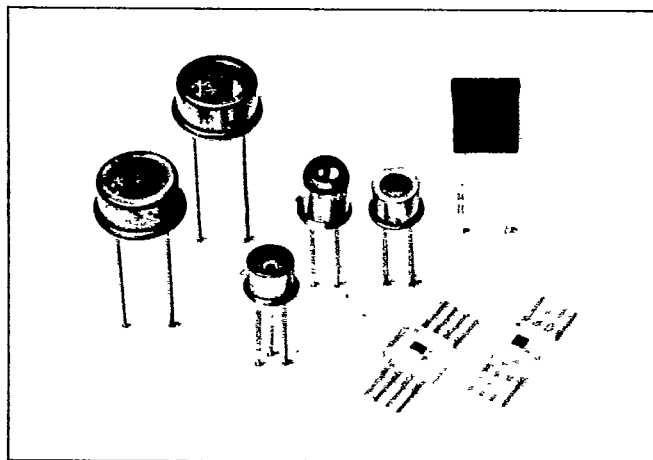


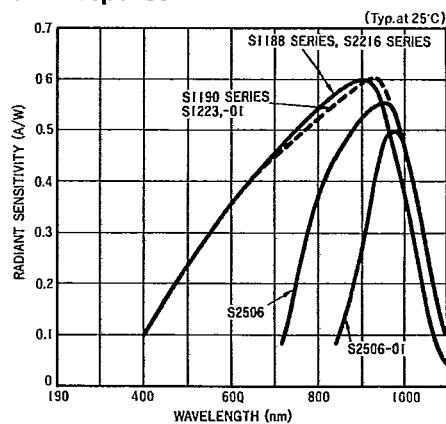
# PIN Silicon Photodiodes

T-41-53

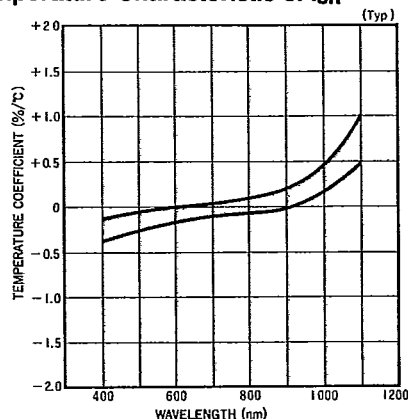
Type No.	Features	① Outlines Window Materials	Package	Photosensitive Surface		Spectral Response		Characteristics (at 25°C)				
				Size (mm)	Effective Area (mm <sup>2</sup> )	Range (nm)	Peak Wave- length (nm)	Radiant Sensitivity Typ. (A/W)			Short Circuit Current I <sub>sh</sub> , 100 lux	
								Peak Wave- length	633nm He-Ne Laser	930nm GaAs LED	Min. (μA)	Typ. (μA)
S1188-02	Ultra-high speed response	④/K	TO-18 (3 pin)	0.8 dia.	0.5	400~1060	900±50	0.6	0.4	0.6	0.4	0.5
S1188-06				0.4 dia.	0.12						0.1	0.14
S2216-01	Ultra-high speed response, low bias type	④/K	TO-18 (3 pin)	0.8 dia.	0.5	400~1060	900±50	0.6	0.4	0.6	0.4	0.5
S2216-02				0.4 dia.	0.12						0.1	0.14
S1190	High-speed response	①/K	TO-18	1.1 x 1.1	1.2	400~1100	920±50	0.6	0.4	0.6	0.8	1.1
S1190-01	High-speed response, lens window	③/L									6	8
S1190-03	High-speed response	④/K									0.8	1.1
S1190-04	Low capacitance, lens window	③/L									6	8
S1223	2.4 x 2.8mm sensitive area	⑥/K	TO-5	2.4 x 2.8	6.6	400~1100	920±50	0.6	0.4	0.6	4	5.5
S1223-01	3.7 x 3.7mm sensitive area			3.7 x 3.7	13.6						8	11
S2506	Visible light cutoff molded resin type	⑦/R	Molded resin	3 x 3	9	700~1100	950±50	0.55	—	0.5	4.0	5.5
S2506-01	High immunity to ambient fluorescent lighting					840~1100	980±50	0.5	0.4	2.2	3.0	
S2856	4 element type	⑧/R	Molded resin	See ⑧ on P.37.		400~1060	900±50	0.55	0.35	0.55	—	—
S2802	6 element type											



• Spectral Response



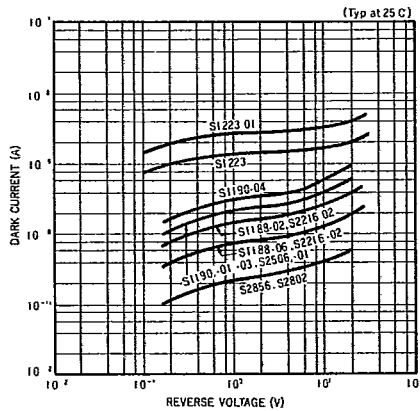
• Temperature Characteristic of I<sub>sh</sub>



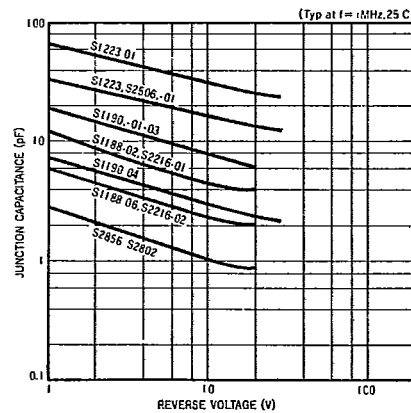
- ① See pages 34 to 37 for outlines.  
 Window materials are  
 K: Borosilicate glass  
 L: Lens type borosilicate glass  
 F: Visible light cutoff filter  
 R: Resin molding

Characteristics (at 25°C)							Maximum Ratings					Type No.
Dark Current $I_d$ Max. (nA)	Temperature Dependence of Dark Current Typ. (Times/°C)	Junction Capacitance $C_j$ Typ. (pF)	Rise Time $t_r$ $R_L = 50\Omega$ Typ. (ns)	Cutoff Fre- quency $f_c$ Typ. (MHz)	NEP Typ. (W/Hz <sup>1/2</sup> )	$D^*$ Typ. (cmHz <sup>1/2</sup> /W)	Reverse Voltage $V_{Rmax}$ (V)	Current I max. (mA)	Power Dissipa- tion P max. (mW)	Temperature Range		
										Operating (°C)	Storage (°C)	
2 ( $V_R = 20V$ )	1.15	4 ( $V_R = 20V$ )	3 ( $V_R = 20V$ )	80 ( $V_R = 20V$ )	$5 \times 10^{-14}$ ( $V_R = 20V$ )	$2 \times 10^{15}$ ( $V_R = 20V$ )	30	0.5	50	-20 ~ +80	-55 ~ +100	S1188-02
1 ( $V_R = 20V$ )		2 ( $V_R = 20V$ )	0.8 ( $V_R = 20V$ )	100 ( $V_R = 20V$ )	$4 \times 10^{-14}$ ( $V_R = 20V$ )							S1188-06
1 ( $V_R = 5V$ )	1.15	2.5 ( $V_R = 5V$ )	1 ( $V_R = 5V$ )	40 ( $V_R = 5V$ )	$6 \times 10^{-15}$ ( $V_R = 5V$ )	$2 \times 10^{13}$ ( $V_R = 5V$ )	30	0.5	50	-20 ~ +80	-55 ~ +100	S2216-01
0.5 ( $V_R = 5V$ )		1.5 ( $V_R = 5V$ )		50 ( $V_R = 5V$ )	$4 \times 10^{-15}$ ( $V_R = 5V$ )							S2216-02
2 ( $V_R = 10V$ )	1.15	8 ( $V_R = 10V$ )	3 ( $V_R = 10V$ )	30 ( $V_R = 10V$ )	$6 \times 10^{-14}$ ( $V_R = 10V$ )	$2 \times 10^{12}$ ( $V_R = 10V$ )	20	0.5	50	-20 ~ +80	-55 ~ +100	S1190
3 ( $V_R = 10V$ )		3 ( $V_R = 10V$ )	2 ( $V_R = 10V$ )	20 ( $V_R = 10V$ )	$1.3 \times 10^{-14}$ ( $V_R = 10V$ )							$8 \times 10^{12}$ ( $V_R = 10V$ )
10 ( $V_R = 20V$ )	1.15	13 ( $V_R = 20V$ )	5 ( $V_R = 20V$ )	30 ( $V_R = 20V$ )	$7 \times 10^{-14}$ ( $V_R = 20V$ )	$8 \times 10^{12}$ ( $V_R = 20V$ )	30	0.5	100	-20 ~ +80	-55 ~ +100	S1223
20 ( $V_R = 20V$ )		25 ( $V_R = 20V$ )	10 ( $V_R = 20V$ )	20 ( $V_R = 20V$ )	$1 \times 10^{-13}$ ( $V_R = 20V$ )							S1223-01
10 ( $V_R = 12V$ )	1.15	16 ( $V_R = 12V$ )	50 ( $V_R = 12V, R_L = 1k\Omega$ )	25 ( $V_R = 12V$ )	$1 \times 10^{-13}$ ( $V_R = 12V$ )	$3 \times 10^{13}$ ( $V_R = 12V$ )	35	0.5	150	-25 ~ +80	-40 ~ +100	S2506
0.2 ( $V_R = 10V$ all elements)	1.15	10 Max. ( $V_R = 10V$ all elements)	1 ( $V_R = 10V$ )	-	-	-	20	0.5	10	-20 ~ +80	-40 ~ +100	S2856

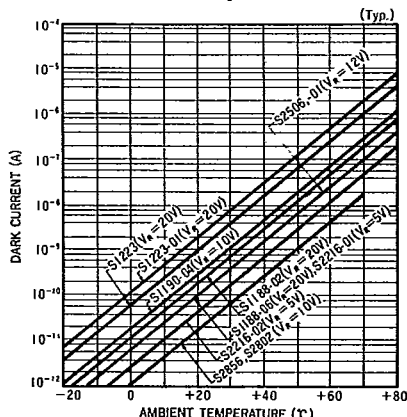
• Dark Current vs. Reverse Voltage



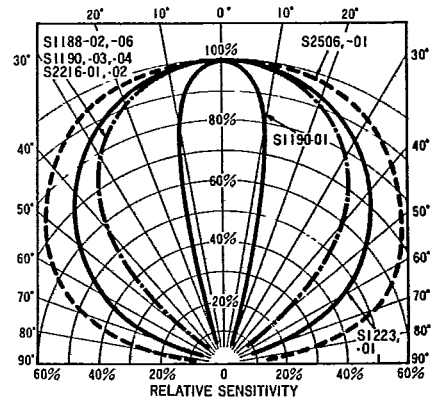
• Junction Capacitance vs. Reverse Voltage



• Dark Current vs. Temperature



• Directivity

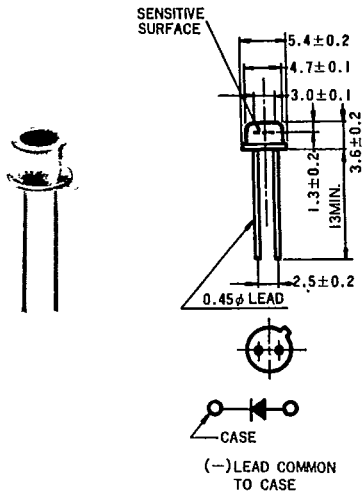


# Dimensional Outlines

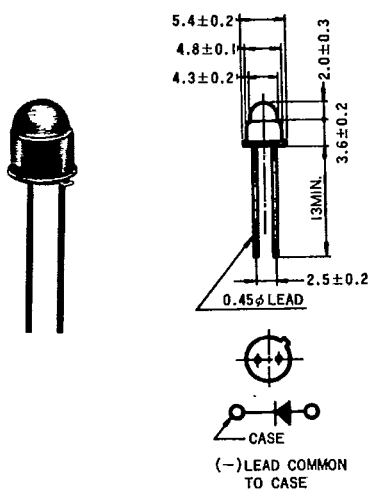
T-91-20

Unit: mm

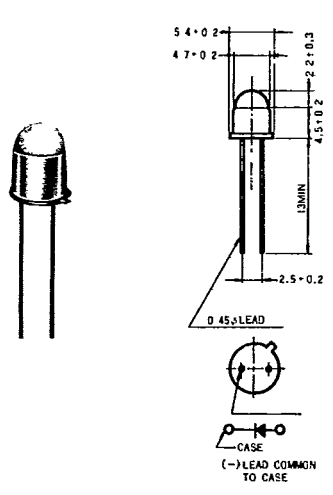
① S1226-18BQ etc.



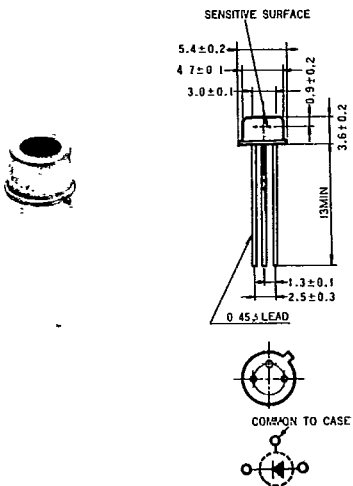
② S2386-18L etc.



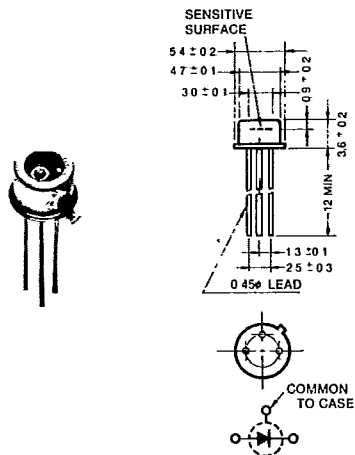
③ S1190-01 etc.



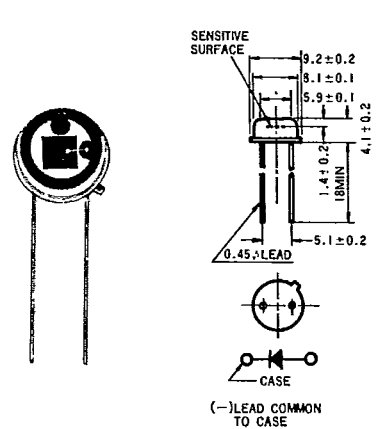
④ S1188-02, S2216-01, etc.



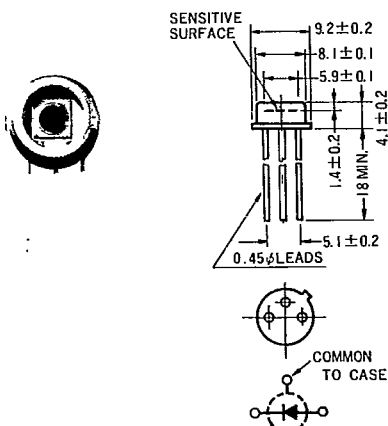
⑤ S2381, S2382, S2383



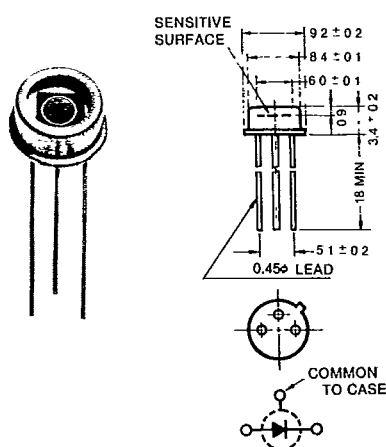
⑥ S1226-5BQ etc.



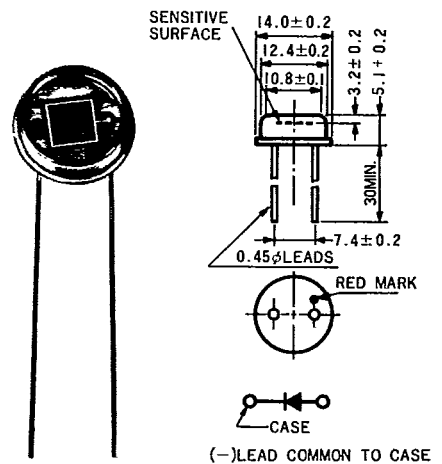
⑦ S1721



⑧ S2384

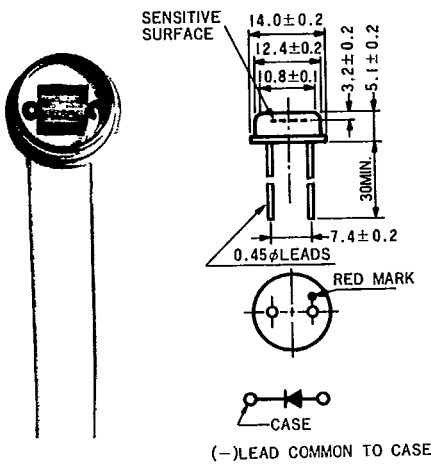


⑨ S1226-8BQ etc.

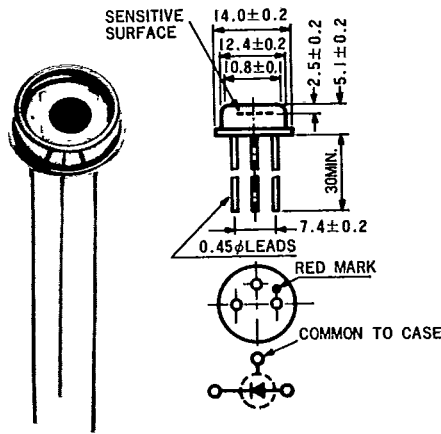


Unit: mm

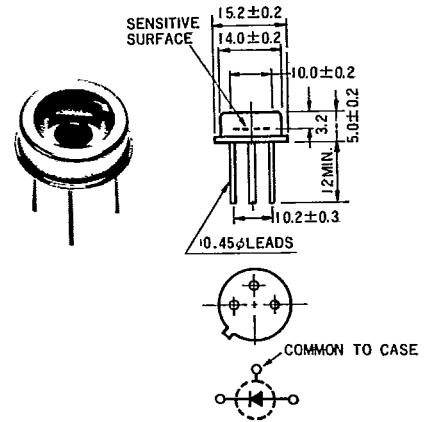
10 G1117, G1737



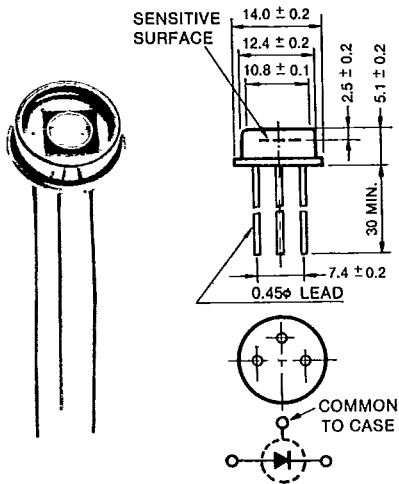
11 S1722, S1863, etc.



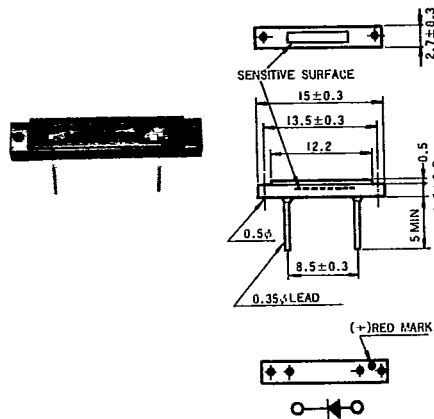
12 S1863-01



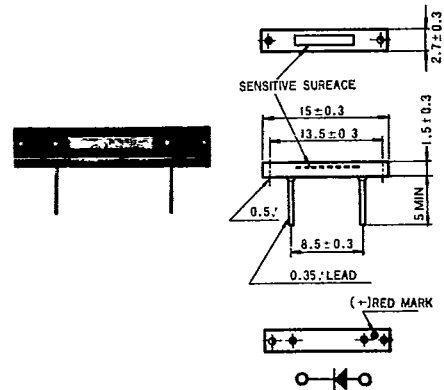
13 S2385



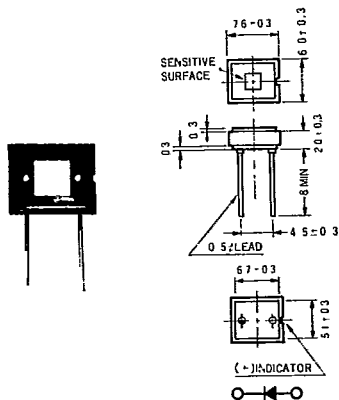
14 S1227-16BQ etc.



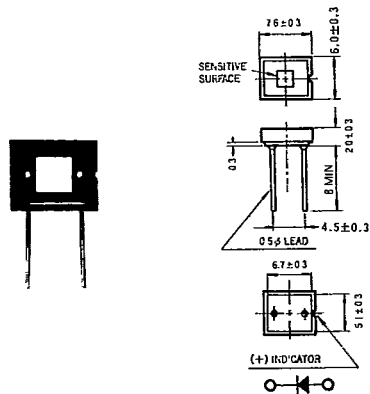
15 S1227-16BR etc.



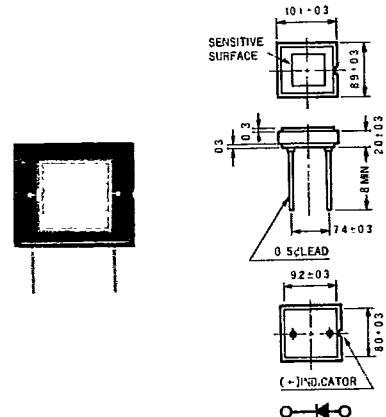
16 S1227-33BQ etc.



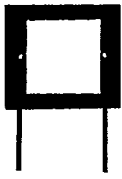
17 S1227-33BR etc.



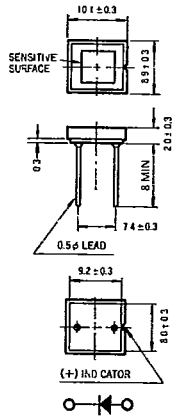
18 S1227-66BQ etc.



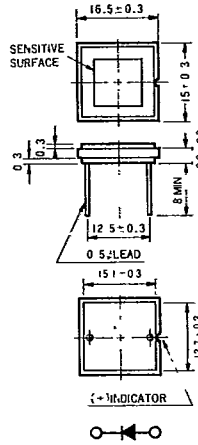
19 S1227-66BR etc.



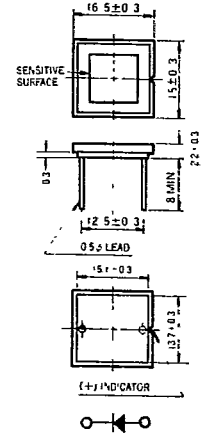
G1120  
G1740



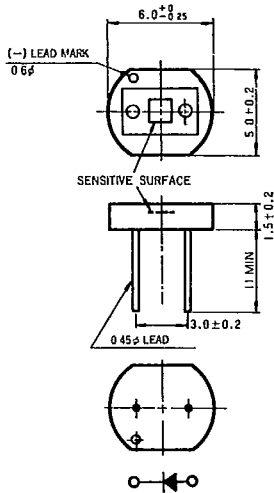
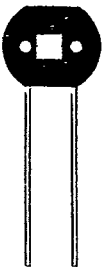
20 S1227-1010BQ etc.



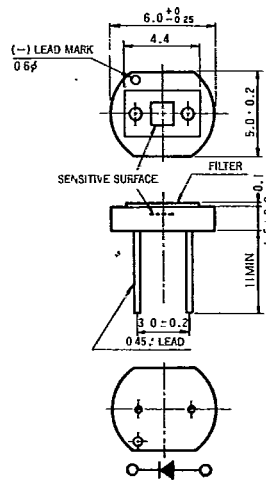
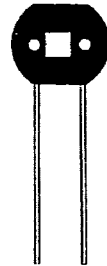
21 S1227-1010BR etc.



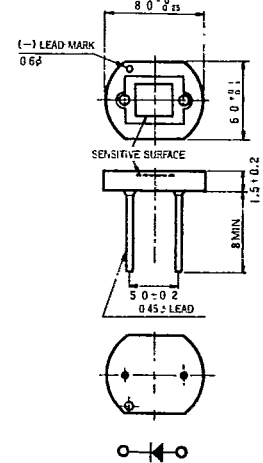
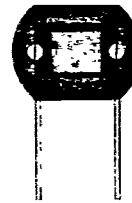
22 S1087-01, G1118, G1738



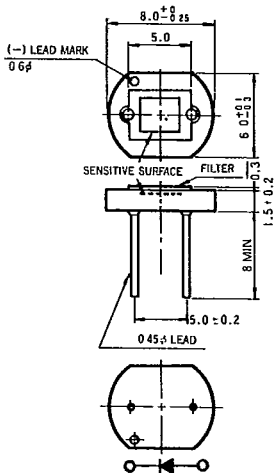
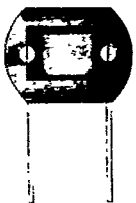
23 S1087, S1087-03



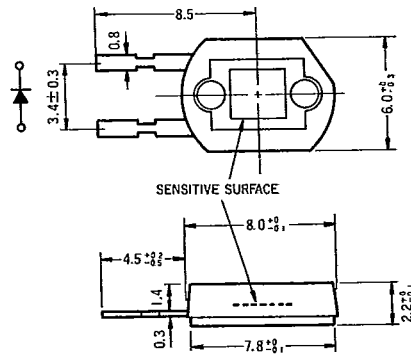
24 S1133-01, S1133-11, etc.



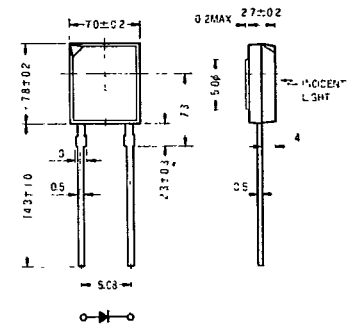
25 S1133, S1133-03, etc.



26 S1787 Series



27 S2506, S2506-01



Unit: mm

28 S2856, S2802

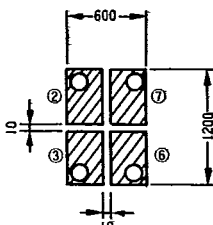
29 S2164, S2164-01

S2802

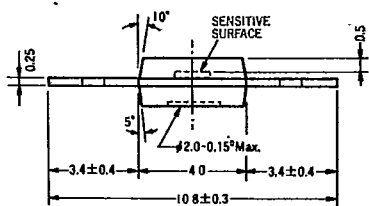
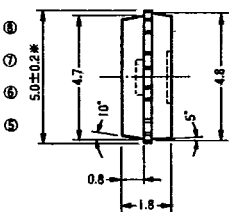
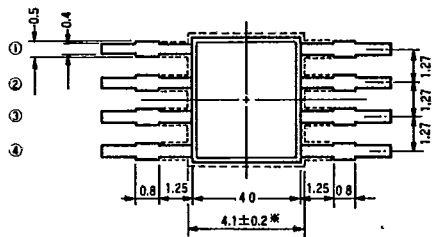
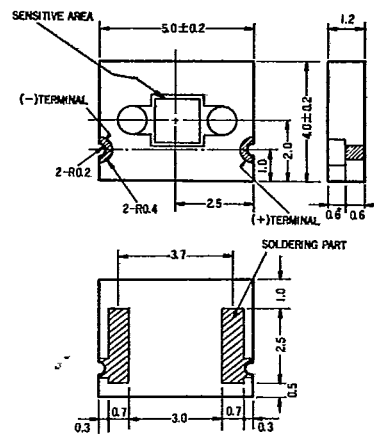
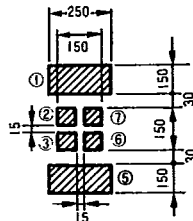


Details of Sensitive Area  
(Unit:  $\mu\text{m}$ )

S2856



S2802



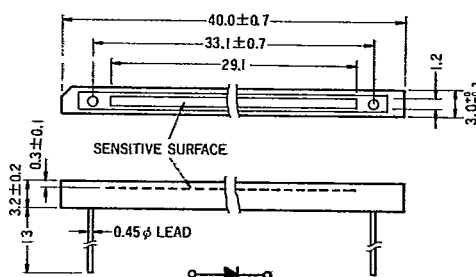
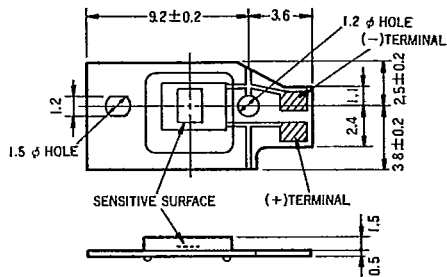
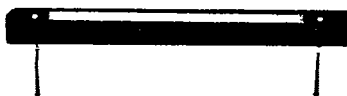
\* INCLUDING BURR

PIN CONNECTION

	S2856	S2802
①	NC	ANODE 1
②	ANODE 1	ANODE 2
③	ANODE 2	ANODE 3
④	CATHODE	CATHODE
⑤	NC	ANODE 4
⑥	ANODE 3	ANODE 5
⑦	ANODE 4	ANODE 6
⑧	CATHODE	CATHODE

30 S2357

31 S2551



\* The spacings of the leads in the figures are indicated as center-to-center dimensions. The photograph shows a typical type.