

1. Scope :

This specification applies to NPN silicon phototransistor chips,
Device No. ST-0112A.

2. Structure :

- 2-1. Planar type .
- 2-2. Electrodes :
 - N (Collector) side : Gold alloy.
 - P (Base) side : Aluminum alloy.
 - N (Emitter) side : Aluminum alloy.

3. Size :

- 3-1. Chip size : 24 mils × 24 mils (0.610 mm × 0.610 mm).
- 3-2. Chip thickness : 7.5 ± 1.2 mils (0.190 ± 0.03 mm).
- 3-3. Active area : $17.3 \text{ mils} \times 17.3 \text{ mils} \pm 1.2 \text{ mils}$ ($0.44 \text{ mm} \times 0.44 \text{ mm} \pm 0.03 \text{ mm}$).
- 3-4. Bonding pad diameter: $6.7 \text{ mils} \pm 0.8 \text{ mils}$ ($0.170 \text{ mm} \pm 0.02 \text{ mm}$).
- 3-5. Pattern drawing : refer to the attached drawing.

*Including scribing line .The chip size is about $(0.585 \pm 0.025) \times (0.585 \pm 0.025) \text{ mm}^2$ after dicing.

4. Electrical characteristics (Ta = 25 °C)

Parameter	Symbol	Condition	Min.	Typ.	Max.	Unit
Collector-emitter Breakdown Voltage	BV_{CEO}	$I_C=100\mu A$ $I_B=0$	60			V
Emitter-collector Breakdown Voltage	BV_{ECO}	$I_E=100\mu A$ $I_B=0$	7			V
Collector dark current	I_{CEO}	$V_{CE}=20V$ $H=0\text{mw/cm}^2$			100	nA
Collector-emitter Saturation Voltage	$V_{CE(S)}$	$I_C=2\text{mA}$ $I_B=100\mu A$			0.3	V
Rise/fall time	t_R/t_F	$V_{CE}=5V$ $I_C=1\text{mA}$ $R_L=1000\Omega$		15/15		μS
Current gain	h_{FE}	$V_{CE}=2V$ $I_C=0.1\text{mA}$	200			

