

1. Scope :

This specification applies to NPN silicon phototransistor chips,
Device No. ST-2118-A.

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(including scribe lane) : 18 mils × 18 mils (0.458 mm × 0.458 mm).
- 3-2. Chip thickness : 7.5 ± 1.5 mils (0.191 ± 0.038 mm).
- 3-3. Active area : $11.80 \text{ mils} \times 11.80 \text{ mils} \pm 1.2 \text{ mils}$ ($0.300 \text{ mm} \times 0.300 \text{ mm} \pm 0.03 \text{ mm}$).
- 3-4. Bonding pad diameter : $4 \text{ mils} \pm 0.8 \text{ mils}$ ($0.11 \text{ mm} \pm 0.02 \text{ mm}$).
- 3-5. Pattern drawing : refer to the attached drawing.

*Including scribing line .The chip size is about $(0.433 \pm 0.025) \times (0.433 \pm 0.025) \text{ mm}^2$ after dicing.

4. Electrical characteristics (Ta = 25 °C)

Parameter	Symbol	Condition	Min.	Typ.	Max.	Unit
Collector-emitter Breakdown Voltage	BV_{CEO}	$I_C=100\mu A$ $I_B=0$	70			V
Emitter-collector Breakdown Voltage	BV_{ECO}	$I_E=10\mu A$ $I_B=0$	7			V
Collector dark current	I_{CEO}	$V_{CE}=20V$ $H=0\text{mw/cm}^2$			60	nA
Collector-emitter Saturation Voltage	$V_{CE(S)}$	$I_C=2\text{mA}$ $I_B=100\mu A$			0.2	V
Current gain	h_{FE}	$V_{CE}=5V$ $I_C=2\text{mA}$	200			

h_{FE} RANK : >2000 (BV_{ECO} : MIN.= 5.3 V)

