

1. Scope :

This specification applies to NPN silicon phototransistor chips,
Device No. ST-0139A.

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) : 16.93 mils × 25.98 mils (0.430 mm × 0.660 mm).
- 3-2. Real chip size : 16.14 mils × 25.20 mils ± 1 mils (0.410 mm × 0.640 mm ± 0.025 mm).
- 3-3. Chip thickness : 7.5 ± 1.5 mils (0.191 ± 0.038 mm).
- 3-4. Active area : 11.25 mils × 20.31 mils (0.286 mm × 0.516 mm).
- 3-5. Pattern drawing : refer to the attached drawing.

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}	$V_{CE}=20V$ $H=0mw/cm^2$			60	nA
Collector-emitter Saturation Voltage	$V_{CE(S)}$	$I_C=2mA$ $I_B=100\mu A$			0.2	V
Current gain	h_{FE}	$V_{CE}=5V$ $I_C=2mA$	200			

