

**1. Scope :**

This specification applies to NPN silicon phototransistor chips,  
Device No. ST-0121-B

**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) : 20 mils × 20 mils ( 0.508 mm × 0.508 mm ).
- 3-2. Real chip size : 19.21 mils × 19.21 mils ± 1 mils ( 0.488 mm × 0.488 mm ± 0.025 mm ).
- 3-3. Chip thickness : 7.0 ± 1.5 mils ( 0.178 ± 0.038 mm ).
- 3-4. Active area : 15 mils × 15 mils ( 0.381 mm × 0.381 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	$BV_{CEO}$	$I_C=100\mu A$ $I_B=0$	30			V
Emitter-collector Breakdown Voltage	$BV_{ECO}$	$I_E=100\mu A$ $I_B=0$	5			V
Collector dark Current	$I_{CEO}$	$V_{CE}=20V$ $H=0mw/cm^2$			100	nA
Collector-emitter Saturation Voltage	$V_{CE(S)}$	$I_C=2mA$ $I_B=100\mu A$			0.3	V
Rise/fall time	$t_r/t_f$	$V_{CE}=5V$ $I_C=1mA$ $R_L=1000\Omega$		15/15		$\mu S$
Current gain	$h_{FE}$	$V_{CE}=5V$ $I_C=2mA$	200			

