

1. Scope :

This specification applies to NPN silicon phototransistor without base electrode chips,
Device No. ST-01015.

2. Structure :

- 2-1. NPN type.
- 2-2. Electrodes :
Backside (Collector) : Gold alloy.
Topside (Emitter) : Aluminum alloy.

3. Size :

- 3-1. Chip size (including scribe lane) : 15 mils x 15 mils (0.381 mm x 0.381 mm).
- 3-2. Real chip size : 14 mils x 14 mils $\pm$ 1 mils (0.356 mm x 0.356 mm).
- 3-3. Chip thickness : 7.5 $\pm$ 1.5 mils (0.191 $\pm$ 0.038 mm).
- 3-4. Active area : 8.86 mils x 8.86 mils (0.225 mm x 0.225 mm).
- 3-5. Emitter bond pad size: 0.100mm diameter
- 3-6. 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 =100uA I _B =0	70			V
Emitter-collector Breakdown Voltage	BV _{ECO}	I _E =10uA I _B =0	7			V
Collector dark current	I _{CEO}	V _{CE} =20V H=0mw/cm ²			60	nA
Emitter-Collector dark current	I _{eco}	V _{EC} =6V H=0mw/cm ²			20	nA
Collector-emitter Saturation Voltage *	V _{CE(S)}	I _C =2mA I _B =100uA			0.2	V
Current gain *	h _{FE}	V _{CE} =5V I _C =2mA	As to below table			—

* h_{fe} & V_{ce(sat)} was measured from the test key of wafer.

HFE Rank (Avg.)

	HFE avg.
Rank A	400-600
Rank B	600-800
Rank C	800-1000
Rank D	1000-1200
Rank E	1200-1400
Rank F	1300-1600

