

1. Scope :

This specification applies to NPN silicon photodarlington chips,
Device No. ST-0128-AC.

2. Structure :

2-1. Planar type.

2-2. Electrodes :

N (Collector) side : Gold alloy.

P (Base) side : Aluminum alloy.PAD thickness : $2.25\mu\text{m} \pm 0.3\mu\text{m}$.

N (Emitter) side : Aluminum alloy.PAD thickness : $2.25\mu\text{m} \pm 0.3\mu\text{m}$.

3. Size :

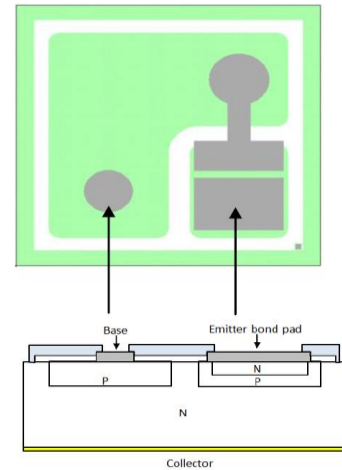
3-1. Chip size : 27.5 mils × 27.5 mils (0.700 mm × 0.700 mm).

3-2. Chip thickness : 7.5 ± 1.5 mils (0.191 ± 0.038 mm).

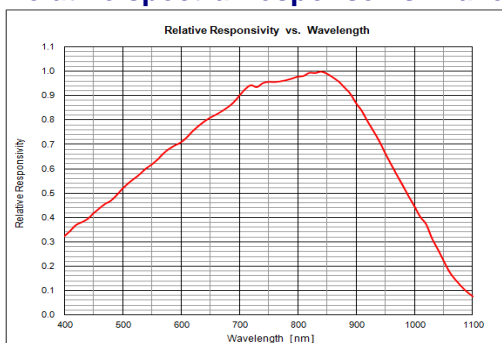
3-3. Pattern drawing : refer to the attached drawing.

4. Electrical characteristics (Ta = 25 °C)

Parameter	Symbol	Condition	Min.	Typ.	Max.	Unit
Collector-emitter Breakdown Voltage	BV_{CEO}	$I_C=100\mu\text{A}$ $I_B=0$	60			V
Emitter-collector Breakdown Voltage	BV_{ECO}	$I_E=10\mu\text{A}$ $I_B=0$	7			V
Collector dark current	I_{CEO}	$V_{CE}=10\text{V}$ $H=0\text{mw}/\text{cm}^2$			1000	nA
Collector-emitter Saturation Voltage	$V_{CE(S)}$	$I_C=15\text{mA}$ $I_B=100\mu\text{A}$			1.0	V
Emitter-base Saturation Voltage	$V_{BE(S)}$	$I_C=15\text{mA}$ $I_B=100\mu\text{A}$			1.45	V
Rise/Fall time	t_R/t_F	$V_{CE}=5\text{V}$ $I_C=10\text{mA}$ $R_L=100\Omega$		40/60		μS
Current gain	h_{FE}	$V_{CE}=5\text{V}$ $I_C=10\text{mA}$	35K		50K	-



5. Relative spectral response vs. wavelength :



*Bare chip measured, for reference only.