

1. Scope :

This specification applies to NPN silicon phototransistor chips,
Device No. ST-0143.

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 : 18 mils × 18 mils (0.458 mm × 0.458 mm).

3-2. Chip thickness : 7.5 ± 1.5 mils (0.190 ± 0.038 mm).

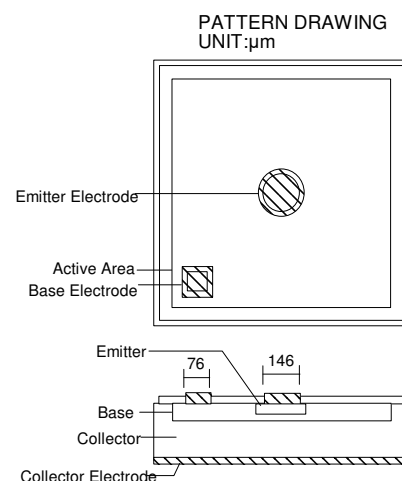
3-3. Active area : 12.4 mils × 12.4 mils (0.316 mm × 0.316 mm).

3-4. Pattern drawing : refer to the attached drawing.

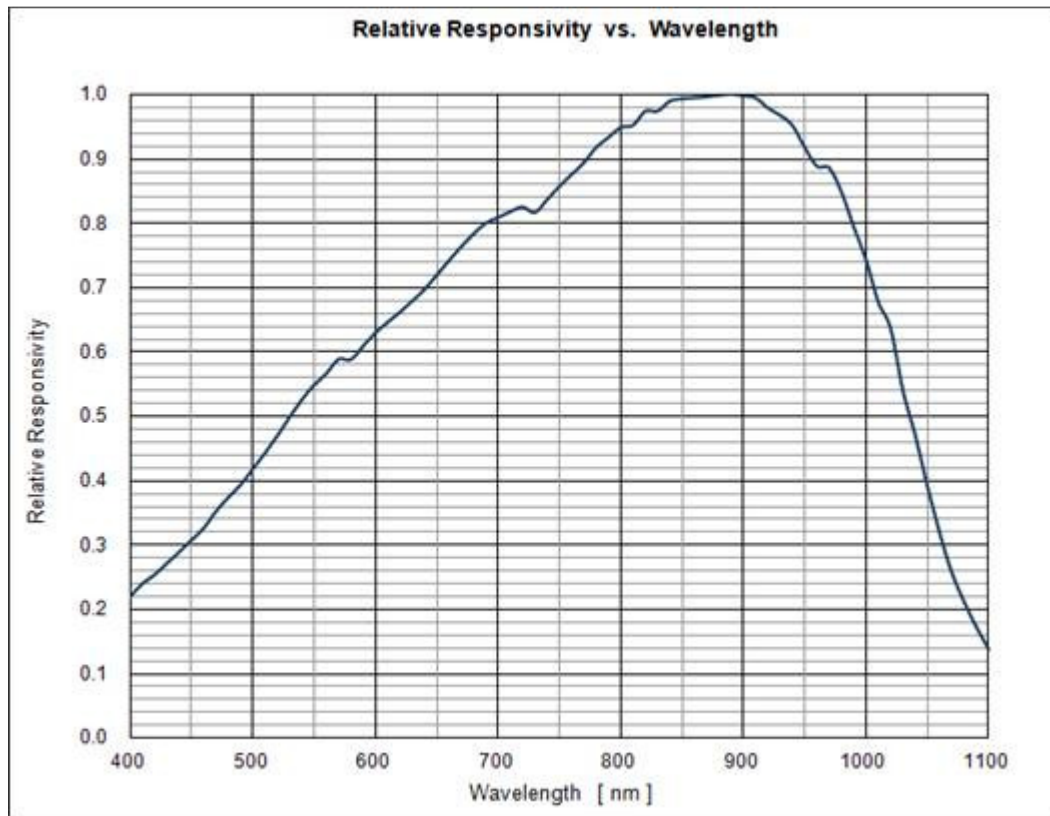
4. Electrical characteristics (Ta = 25 °C)

Parameter	Symbol	Condition	Min.	Typ.	Max.	Unit
Collector-emitter Breakdown Voltage	BV_{CEO}	$I_C=100\mu A$ $I_B=0$	35			V
Emitter-collector Breakdown Voltage	BV_{ECO}	$I_E=100\mu A$ $I_B=0$	5.5			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		μS
Current gain	h_{FE}	$V_{CE}=5V$ $I_C=2mA$	200			
Collector-base Capacitance	C_{CB}	$f=1MHZ$ $V_{CB}=3V$	2.4	2.8	3.2	PF
* Spectral Response	λ_p	---		880		nm

h_{FE} 1000 – 1800



5. Relative spectral response curve ($T_a = 25\text{ }^{\circ}\text{C}$)



* bare chip measured with integrating sphere, for reference only.