

Si Photo-transistor Chip — TK0021PTN

1. Scope

- The specification applies to NPN silicon photo-transistor chip.
- Type : TK0021PTN.

2. Structure

- NPN planar type.
- Electrode N (collector) side : Gold.
P (base) side : Aluminum.
N (emitter) side : Aluminum.

3. Size

- Chip size : 20mil × 20mil ± 1.5mil (0.508mm × 0.508mm ± 0.038mm)
- Thickness : 6mil ± 1mil (0.150mm ± 0.025mm)
- Active area : 15mil × 15mil ± 0.5mil (0.380mm × 0.380mm ± 0.013mm)
- Base pad size : 2.36mil × 2.36mil ± 0.4mil (0.06mm × 0.06mm ± 0.01mm)
- Emitter pad size : diameter 7.20mil ± 0.4mil (0.18mm ± 0.18mm)
- Pattern drawing : per fig. 1

4. Electro-Optical Characteristics

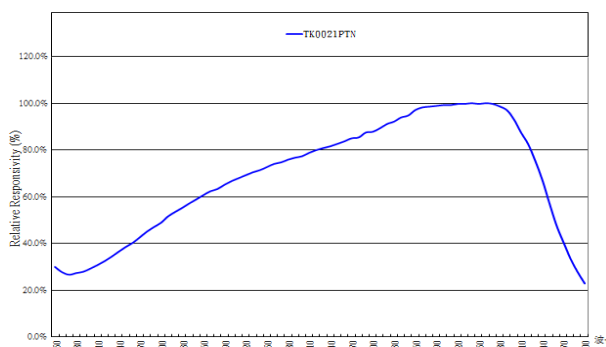
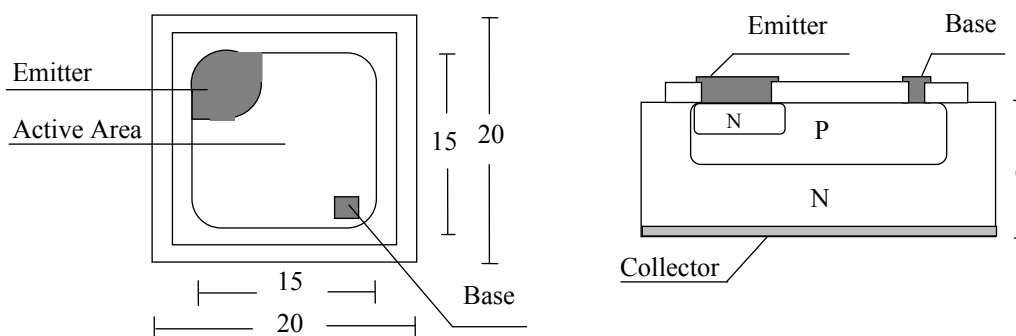
(Ta = +25 °C)

Parameter	Symbol	Condition	Min.	Typ.	Max	Unit
Dark Current	ICEO	VCE=10V			0.03	μA
Collector-Emitter Saturation Voltage	VCE(Sat)	Ic=2mA, Ib=100uA			0.25	V
Collector-Emitter Breakdown Voltage	BVCEO	ICEO=100μA	60			V
Emitter-Collector Breakdown Voltage	BVECO	IECO=100μA	5			V
Collector-Base Breakdown Voltage	BVCBO	ICBO=100μA	60			V
DC Current Amplification Factor	HFE	VCE=5V, Ib=3uA	200		3000	
Peak Sensing Wavelength	λp			940		nm

Note 1 : HFE Spec : B(200-350) ; C(400-600) ; D(500-700) ; E(600-1100) ; F(900-1400) ;
H(1200-1800) ; G(1600-2500) ; G2(2000-3000)

Note2 : G(1600-2500) 、G2(2000-3000)

(1)BVCEO Min. 30 ; (2)BVECO Min. 4.5 ; (3)BVCBO Min. 40



Unit : mil

fig. 1

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