

**1. Scope :**

This specification applies to NPN silicon photo darlington chips,  
Device No. ST-0130.

**2. Structure :**

- 2-1. Planar type.
- 2-2. Electrodes :
  - N ( Emitter ) side : Aluminum alloy.
  - P ( Base ) side : Aluminum alloy.
  - N ( Collector ) side : Gold alloy.

**3. Size :**

- 3-1. Chip size : 60 mils × 60 mils ± 2.0 mils ( 1.524 mm × 1.524 mm ± 0.05mm).
- 3-2. Chip thickness : 8.7 ± 1.5 mils ( 0.220 ± 0.038 mm ).
- 3-3. Bonding pad ( Emitter ) : 6.9 mils × 6.0 mils ± 0.6 mils ( 0.175 mm × 0.152 mm ± 0.015mm).  
Bonding pad ( Base ) : 4.9 mils × 5.1 mils ± 0.6 mils ( 0.124 mm × 0.130 mm ± 0.015mm).
- 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	$BV_{CEO}$	$I_C=100\mu A$	350			V
Collector Dark Current	$I_{CEO}$	$V_{CE}=200V$ $H=0mW/cm^2$			100	nA
Collector-Emitter Saturation Voltage	$V_{CE(S)}$	$I_C=100mA$ $I_B=150\mu A$			1.2	V
Rise/Fall Time	$t_r/t_f$	$I_C=20mA$ $V_{CE}=2V$ $R_L=100\Omega$		100/20	300/100	$\mu s$
Current Gain	$h_{FE}$	$I_C=40mA$ $V_{CE}=2V$	2500		40000	

