# Photo Transistor --ORT-PT2142H2

## 1. Scope：

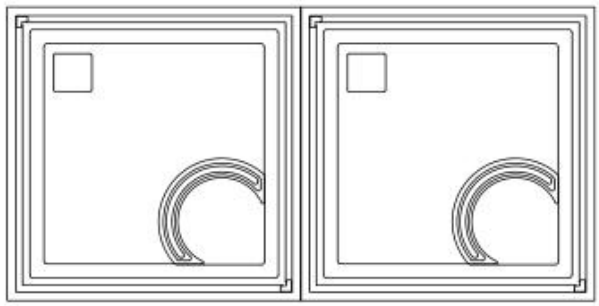
- This specification applies to NPN Photo Transistor.

## 2. Structure：

- Top Side ：alumnium alloy
- Bottom Side ：silver alloy
- Passivation ：Silicon Nitride

## 3. Size：

- Die Size ：508μm×1016μm±30μm
- Thickness ：220μm±30μm
- Pad Size ：
- Base ：60μm×60μm±20μm
- Emitter ：Φ160μm±20μm
- Active Area ：382μm×382μm±20μm
- Pattern Drawing：fig.1.



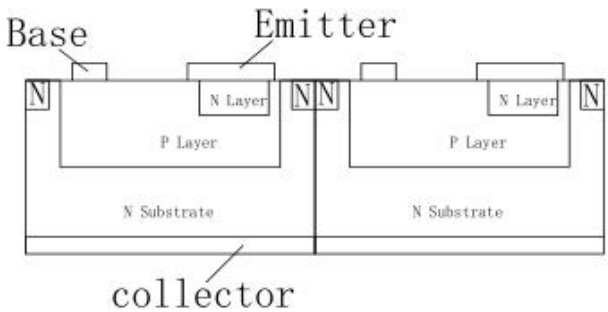



fig.1

## 4. Electro-Optical Characteristics：

(Ta=+25℃)

| Parameter | Symbol | Test Condition | Min | Typ | Max | Unit |
|---|---|---|---|---|---|---|
| C-E Leakage Current | $I_{CEO}$ | $V_{CE}$=20V H=0mw/cm$^2$ | | | 100 | nA |
| C-E Saturation Voltage | $V_{CES}$ | $I_C$=5mA, $I_B$=1mA | | | 250 | mV |
| C-E Voltage | $BV_{CEO}$ | $I_{CE}$=500μA | 70 | | | V |
| E-C Voltage | $BV_{ECO}$ | $I_{EC}$=50μA | 6 | | | V |
| DC Current Gain | $h_{FE}$ | $V_{CE}$=10V, $I_C$=1mA | 300 | | | - |

***Note** ： $BV_{ECO}$ : hFE：1000~ ($BV_{ECO}$ = Min. 3V)

## 5. hfe Classification:

**T21423 series(1:1.3)**

| Classification | T2142-3A | T2142-3B | T2142-3C | T2142-3D | T2142-3E |
|---|---|---|---|---|---|
| hfe | 600~780 | 660~860 | 720~940 | 780~1020 | 840~1100 |

| Classification | T2142-3F | T2142-3G | T2142-3H | T2142-3I | T21423J |
|---|---|---|---|---|---|
| hfe | 900~1180 | 960~1260 | 1020~1340 | 1080~1420 | 1140-1500 |

| Classification | T2142-3K | T2142-3L | T2142-3M | T2142-3N |
|---|---|---|---|---|
| hfe | 1200~1580 | 1500~2000 | 2000~2600 | 2400~3000 |

**T21425 series(1:1.5)**

| Classification | T2142-5A | T2142-5B | T2142-5C | T2142-5D | T2142-5E |
|---|---|---|---|---|---|
| hfe | 600-900 | 700-1050 | 800-1300 | 900-1400 | 1100-1700 |

| Classification | T2142-5F | T2142-5G | T2142-5H |
|---|---|---|---|
| hfe | 1300-2000 | 1500-2300 | 2000-3000 |

**T21427 series(1:1.7)**

| Classification | T2142-7A | T2142-7B | T2142-7C | T2142-7D | T2142-7E |
|---|---|---|---|---|---|
| hfe | 600~1020 | 680~1160 | 760-1300 | 840-1440 | 920-1580 |

| Classification | T2142-7F | T2142-7G | T2142-7H |
|---|---|---|---|
| hfe | 1000-1700 | 1200-2000 | 1800-3000 |

**T2142A series(1:2)**

| Classification | T2142-AA | T2142-AB | T2142-AC | T2142-AD | T2142-AE | T2142-AO |
|---|---|---|---|---|---|---|
| hfe | 600~1200 | 800~1600 | 1000~2000 | 1200~2400 | 2000~3000 | 600~3000 |

## 6. Packing ：

- Packing：Sheet Type

## 7. Application Notes：

- All data are measured by Orient’s tester on bare chips within 98% of the nominal value.