

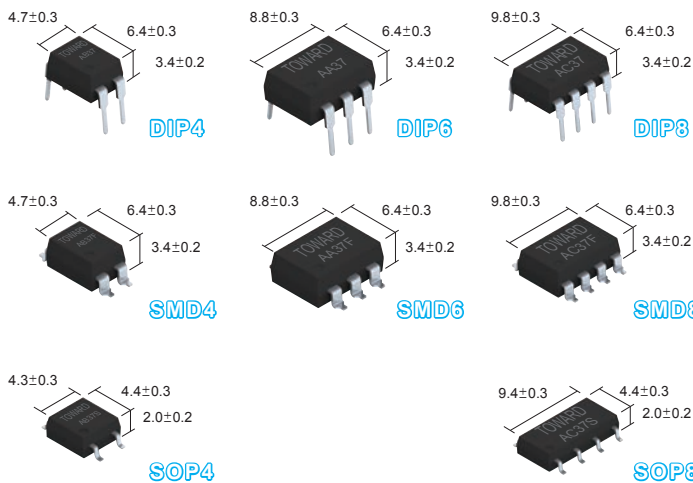
37 Series

60V·1a/2a



Features

- Contact Form 1a / 2a
- Load Voltage 60V
- Operation LED Current 3.0mA
- Load Current 550mA
- On-Resistance 0.75Ω
- Output Capacitance 45pF
- Low Off-State Leakage Current 1.0μA



Application

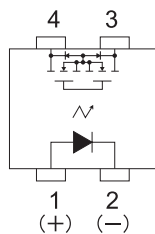
- Modem
- Telephone Equipment
- Security Equipment
- Sensing Equipment
- Automatic Test Equipment
- I/O Modules
- Electric Vehicle

| PART NO | PACKAGE | PACKING |
|----------|---------|--------------|
| AB37 | DIP-4 | Tube 90pcs |
| AA37 | DIP-6 | Tube 50pcs |
| AC37 | DIP-8 | Tube 45pcs |
| AB37F | SMD-4 | Tube 90pcs |
| AA37F | SMD-6 | Tube 50pcs |
| AC37F | SMD-8 | Tube 45pcs |
| AB37S | SOP-4 | Tube 100pcs |
| AC37S | SOP-8 | Tube 50pcs |
| AB37F-R1 | SMD-4 | Reel 1000pcs |
| AA37F-R1 | SMD-6 | |
| AC37F-R1 | SMD-8 | |
| AB37S-R1 | SOP-4 | |
| AC37S-R1 | SOP-8 | |

* Package & PCB Layout Design, See Page 134

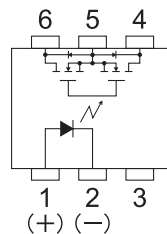
Terminal Identification

AB37(F)(S)



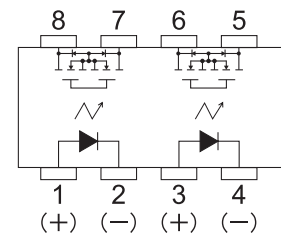
- 1: Anode (LED)
2: Cathode (LED)
3,4: Drain (MOS FET)

AA37(F)



- 1: Anode (LED)
2: Cathode (LED)
3: NC
4,6: Drain (MOS FET)
5: Source (MOS FET)

AC37(F)(S)



- 1,3: Anode (LED)
2,4: Cathode (LED)
5,6,7,8: Drain (MOS FET)

為了持續的改進，敝司有權在不影響規格範圍的情況下修改設計。

In the interest of continuous development, our companies reserve the right to alter designs within specification range.

Absolute Maximum Ratings 絕對最大定格 (Ambient Temperature 周圍溫度 : 25°C)

| Item | | Symbol | Value | | | | |
|---|--|-------------------|---------------------|-------|---------|---------|---------|
| | | | AB37S | AC37S | AB37(F) | AC37(F) | AA37(F) |
| Outline Package | | | 1CH | 2CH | 1CH | 2CH | 1CH |
| Input 輸入 | Continuous LED Current 連續 LED 電流 | I _F | 50mA | | | | |
| | Peak LED Current LED 峰值電流 (f=100 Hz,Duty=1%) | I _{FP} | 500mA | | | | |
| | LED Reverse Voltage 逆向 LED 電壓 | V _R | 5V | | | | |
| | Input Power Dissipation 輸入損耗 | P _{IN} | 75mW | | | | |
| Output 輸出 | Load Voltage 負荷電壓 | V _L | 60V (AC peak or DC) | | | | |
| | Load Current 負荷電流 (mA) | I _L | 500 | 450 | 550 | 500 | 550 |
| | Peak Load Current 峰值負荷電流 (1ms,1 shot) (mA) | I _{PEAK} | 2000 | 2000 | 2000 | 2000 | 2000 |
| | Output Power Dissipation 輸出損耗 (mW) | P _{OUT} | 300 | 450 | 450 | 600 | 450 |
| Total Power Dissipation 全損耗 (mW) | | P _T | 350 | 500 | 500 | 650 | 500 |
| I/O Breakdown Voltage 入 / 出力間絕緣電壓 (Vrms) | | V _{I/O} | 1500 | 1500 | 3750 | 3750 | 3750 |
| I/O Breakdown Voltage 入 / 出力間絕緣電壓 (Suffix-H) (Vrms) | | V _{I/O} | 3750 | 3750 | 5000 | 5000 | 5000 |
| Operating Temperature 使用時溫度 | | T _{OPR} | -40°C ~ +85°C | | | | |
| Storage Temperature 保存溫度 | | T _{STG} | -40°C ~ +100°C | | | | |

Electrical Specifications 電性規格 (Ambient Temperature 周圍溫度 : 25°C)

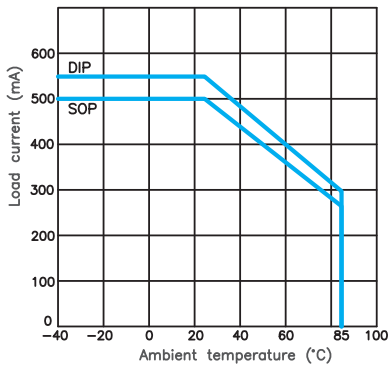
| Item | | Symbol | MIN. | TYP. | MAX. | Units | Conditions |
|--------------------|--|--------------------|-----------------|------|------|-------|--|
| Input 輸入 | LED Forward Voltage LED 順向電壓 | V _F | 1.0 | 1.17 | 1.5 | V | I _F =10mA |
| | Operation LED Current LED 動作電流 | I _{F ON} | | 0.9 | 3.0 | mA | |
| | Recovery LED Voltage LED 復位電壓 | V _{F OFF} | 0.5 | 1.0 | | V | |
| Output 輸出 | On-Resistance 導通電阻 Drain to Drain | R _{ON} | | 0.75 | 1.6 | Ω | I _F =5mA, I _L =Rating Time to flow is within 1sec. |
| | Off-State Leakage Current 開路狀態漏電流 | I _{LEAK} | | | 1.0 | μA | V _L =60V |
| | Output Capacitance 輸出端容量 | C _{OUT} | | 45 | | pF | |
| Transmission 傳達 | Turn-On Time 動作時間 | T _{ON} | | 0.2 | 1.0 | ms | I _F =5mA I _L =Rating (for SOP type) |
| | Turn-Off Time 復位時間 | T _{OFF} | | 0.05 | 0.2 | ms | |
| | Turn-On Time 動作時間 | T _{ON} | | 0.2 | 1.0 | ms | I _F =10mA I _L =Rating (for DIP/SMD type) |
| | Turn-Off Time 復位時間 | T _{OFF} | | 0.05 | 0.5 | ms | |
| Coupled 結合 | I/O Insulation Resistance 輸入 / 出間絕緣阻抗 | R _{I/O} | 10 ⁹ | | | Ω | |
| | I/O Capacitance 輸入 / 力端靜電容量 | C _{I/O} | | 1.3 | | pF | f=1MHz |

為了持續的改進，敝司有權在不影響規格範圍的情況下修改設計。

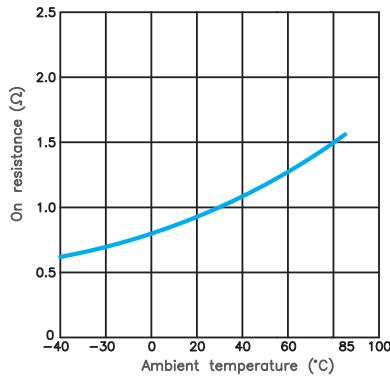
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General-Purpose

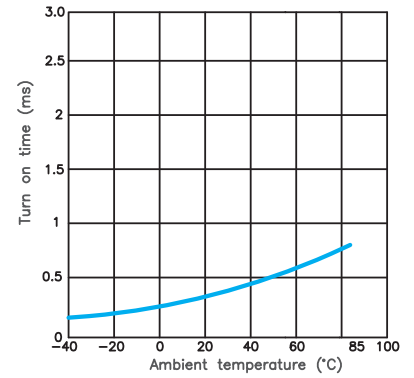
Load current Vs. Ambient temperature



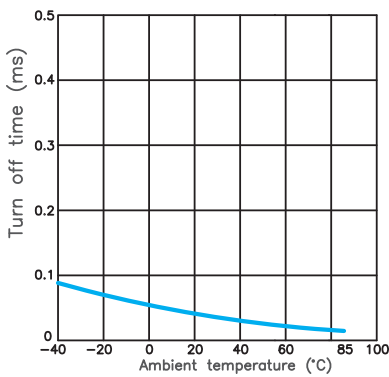
On resistance Vs. Ambient temperature



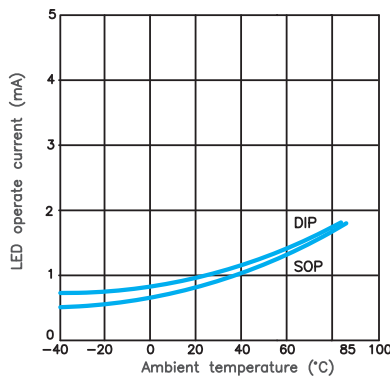
Turn on time Vs. Ambient temperature



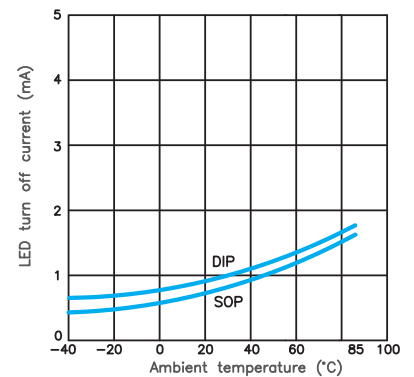
Turn off time Vs. Ambient temperature



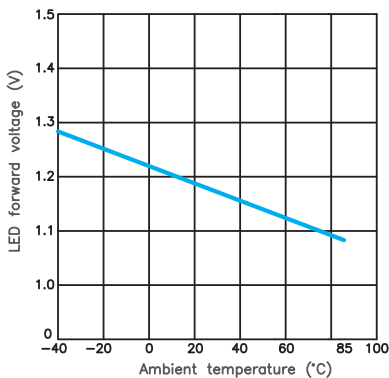
LED operate current Vs. Ambient temperature



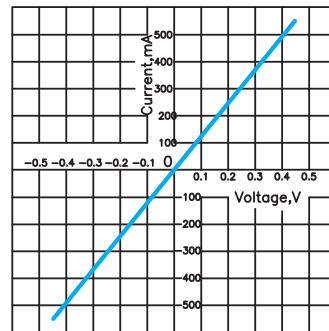
LED Turn off current Vs. Ambient temperature



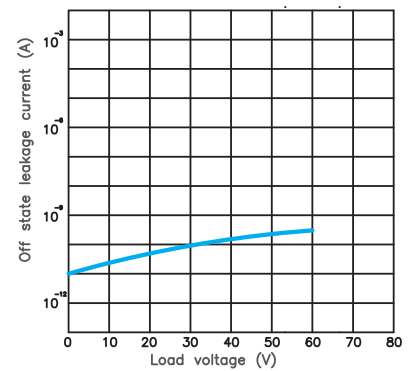
LED forward voltage Vs. Ambient temperature



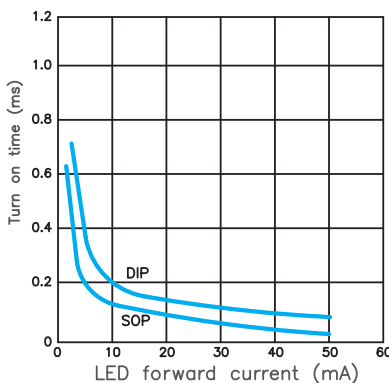
Voltage Vs. current characteristics of output at MOS portion



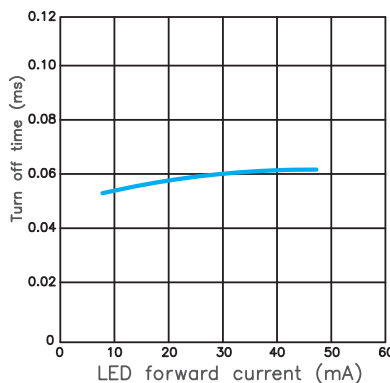
Off state leakage current



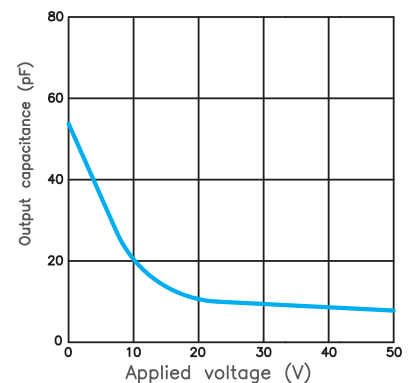
LED forward current Vs. turn on time characteristics



LED forward current Vs. turn off time characteristics




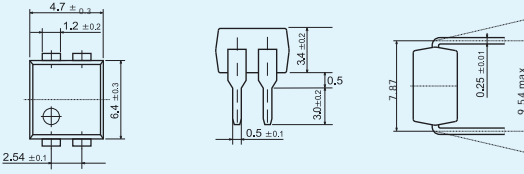
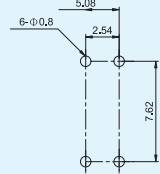

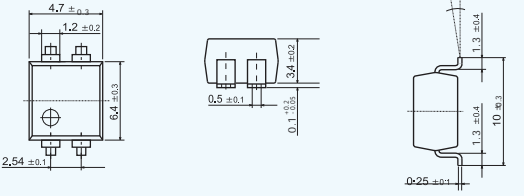
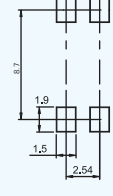

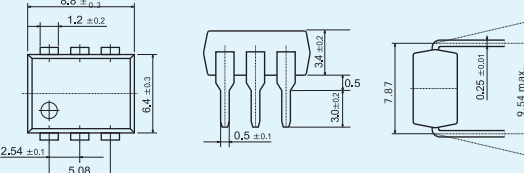
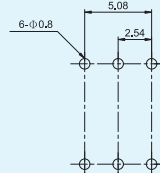

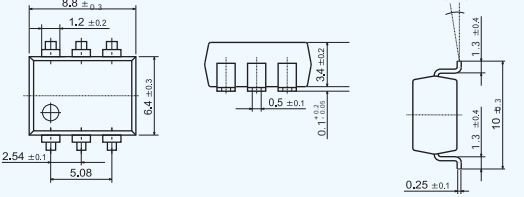
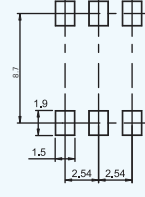

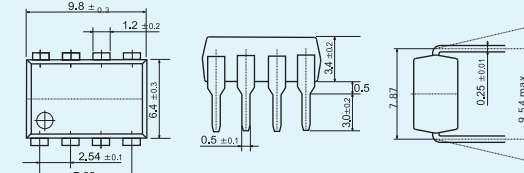
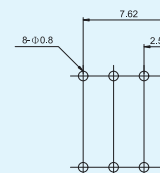

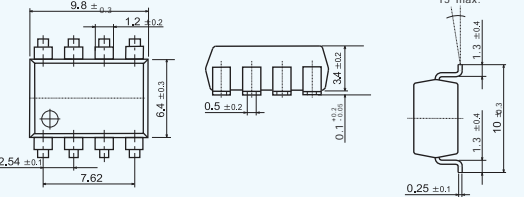
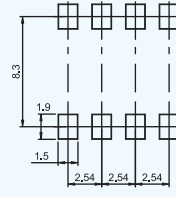
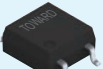
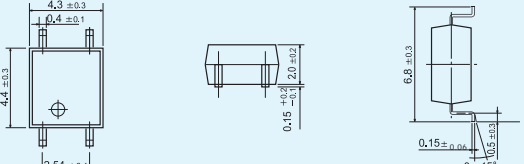
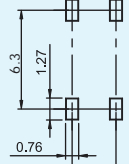

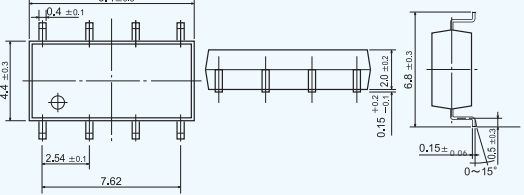
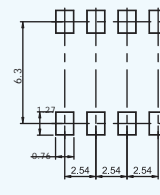
Applied voltage Vs. output capacitance characteristics



為了持續的改進，敝司有權在不影響規格範圍的情況下修改設計。

In the interest of continuous development, our companies reserve the right to alter designs within specification range.

Package & PC Board Pattern

| Package 包裝 | Dimensions 外型尺寸圖 | PC Board pattern PC 板加工圖 |
|---|--|--|
|  <p>DIP4</p> |  |  <p>(Bottom View)</p> |
|  <p>SMD4</p> |  |  <p>(Top View)</p> |
|  <p>DIP6</p> |  |  <p>(Bottom View)</p> |
|  <p>SMD6</p> |  |  <p>(Top View)</p> |
|  <p>DIP8</p> |  |  <p>(Bottom View)</p> |
|  <p>SMD8</p> |  |  <p>(Top View)</p> |
|  <p>SOP4</p> |  |  <p>(Top View)</p> |
|  <p>SOP8</p> |  |  <p>(Top View)</p> |

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Packing Specifications

| Package Type 包裝類型 | Tape shape & dimensions 形狀和尺寸 | Reel shape & dimensions 圈帶形狀和尺寸 | Quantity 數量 |
|----------------------|----------------------------------|------------------------------------|----------------|
| 4 Pin SOP | | | 1000 pcs |
| 8 Pin SOP | | | 1000 pcs |
| 4 Pin SMD | | | 1000 pcs |
| 6 Pin SMD | | | 1000 pcs |
| 8 Pin SMD | | | 1000 pcs |

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Load Connecting Method

| Type 類型 | Load 負荷 | Connection 接續方法 | Feature 特長 |
|------------|------------|--|--|
| 4 pin | AC or DC | | Control bi-directional signal 可控制雙向信號 |
| 6 pin | A | AC or DC | Control bi-directional signal 可控制雙向信號 |
| | B | DC | On-Resistance is 1/2 of A-connection 導通電阻值是 A 接法的 1/2 2-Make-contacts (Source Common) |
| | | DC | On-Resistance is 1/2 of B-connection 導通電阻值是 B 接法的 1/2 |
| C | DC | On-Resistance is 1/2 of B-connection 導通電阻值是 B 接法的 1/2 | |
| 8 pin | AC or DC | | 2 input and 2 output 2 入力和 2 出力回路 |
| | | | 1 input and 2 output 1 入力和 2 出力回路 |

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