



## Specification for Approval

(Temporary specification)

SAMPLES  
ATTACHED AREA

- DEVICE NUMBER: BPC-618S
- CUSTOMER:

| DATE \ PAGE | 1   | 2   | 3   | 4   | 5   |  |  |  |  |  |  | CONTENTS             |
|-------------|-----|-----|-----|-----|-----|--|--|--|--|--|--|----------------------|
| 2012/10/10  | 1.0 | 1.0 | 1.0 | 1.0 |     |  |  |  |  |  |  | Initial Released     |
| 2016/8/9    | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 |  |  |  |  |  |  | Change Packaging Box |
|             |     |     |     |     |     |  |  |  |  |  |  |                      |
|             |     |     |     |     |     |  |  |  |  |  |  |                      |
|             |     |     |     |     |     |  |  |  |  |  |  |                      |
|             |     |     |     |     |     |  |  |  |  |  |  |                      |
|             |     |     |     |     |     |  |  |  |  |  |  |                      |
|             |     |     |     |     |     |  |  |  |  |  |  |                      |

FOR CUSTOMER'S APPROVAL STAMP OR SIGNATURE

| APPROVED | PURCHASE | MANUFACTURE | QUALITY | ENGINEERING |
|----------|----------|-------------|---------|-------------|
|          |          |             |         |             |

佰鴻工業股份有限公司  
BRIGHT LED ELECTRONICS CORP.  
新北市板橋區和平路 19 號 3 樓  
3F., No.19, He Ping Road,  
Ban Qiao Dist., New Taipei City,  
Taiwan  
Tel: +886-2-29591090  
Fax: +886-2-29547006/29558809  
[www.brtled.com](http://www.brtled.com)

| ISSUED                 | APPROVED               | PREPARED               |
|------------------------|------------------------|------------------------|
| 張<br>2016.08.09<br>孝 嚴 | 鮑<br>2016.08.09<br>雙 玲 | 莫<br>2016.08.09<br>銳 明 |

### ● Features:

1. Current transfer ratio (CTR: MIN. 0.1% at  $I_F=5\text{mA}$ ,  $V_{KA}=5\text{V}$ )
2. High input-output isolation voltage ( $V_{ISO}=6,000\text{Vrms}$ )
3. This product doesn't contain restriction substance, comply RoHS standard

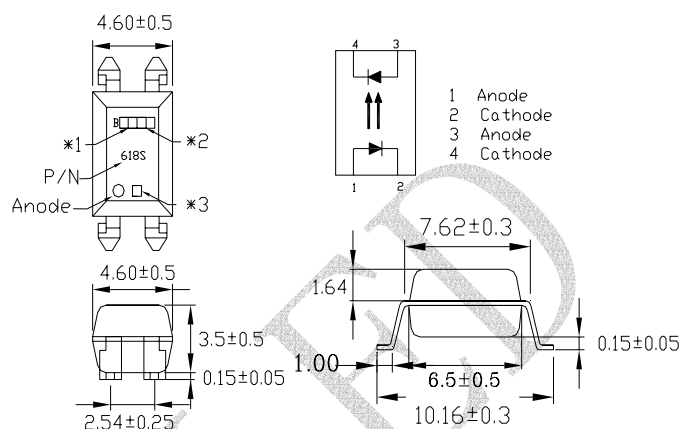
### ● Description

1. The BPC-618S series are optically coupled isolators containing a GaAs light emitting diode and an photodiode
2. The lead pitch is 2.54mm

### ● Applications:

1. Computer terminals.
2. System appliances, measuring instruments.
3. Registers, copiers, automatic vending machines.
4. Electric home appliances, such as fan heaters, etc.
5. Signal transmission between circuits of different potentials and impedances.

### ● Outline Dimensions



### ● NOTES:

- \*1. Year date code.
- \*2. 2-digit work week.
- \*3. Factory identification mark shall be marked.  
(T: Taiwan, G: China)
- 4 · All dimensions are in millimeters (inches).
- 5 · Tolerance is  $\pm 0.25\text{mm}$  (0.01") unless otherwise

### ● Absolute Maximum Ratings (Ta=25°C)

| Parameter                  |                            | Symbol    | Rating                     | Unit |
|----------------------------|----------------------------|-----------|----------------------------|------|
| Input                      | Forward current            | $I_F$     | 25                         | mA   |
|                            | Reverse voltage            | $V_R$     | 5                          | V    |
|                            | Power dissipation          | P         | 70                         | mW   |
| Output                     | Cathode-anode voltage      | $V_{KAO}$ | 30                         | V    |
|                            | Anode - cathode voltage    | $V_{AKO}$ | 0.5                        |      |
|                            | Photodiode output current  | $I_L$     | 100                        | uA   |
|                            | Junction temperature range | $T_j$     | 125                        | °C   |
| Operating temperature      |                            | $T_{opr}$ | -30 to + 110               | °C   |
| Storage temperature        |                            | $T_{stg}$ | -55 to + 125               |      |
| Soldering temperature(10s) |                            | $T_{sol}$ | 260(10s)                   |      |
| Isolation voltage          |                            | $BV_S$    | 6000 (AC, 1min, R, H, 60%) | Vrms |

● **Electro-Optical Characteristics** (Ta=25°C)

| Parameter       |                                   | Symbol            | Conditions                                                                                   | MIN.               | TYP.               | MAX. | Unit.         |
|-----------------|-----------------------------------|-------------------|----------------------------------------------------------------------------------------------|--------------------|--------------------|------|---------------|
| Input           | Forward voltage                   | $V_F$             | $I_F=20\text{mA}$                                                                            | 1.0                | 1.2                | 1.4  | V             |
|                 | Reverse current                   | $I_R$             | $V_R=5\text{V}$                                                                              | ---                | ---                | 10   | $\mu\text{A}$ |
|                 | Terminal capacitance              | $C_t$             | $V=0, f=1\text{KHz}$                                                                         | ---                | 30                 |      | pF            |
| Output          | Dark current                      | $I_{\text{leak}}$ | $V_{KA}=10\text{V},$                                                                         | ---                | ---                | 50   | nA            |
|                 |                                   |                   | $V_{KA}=10\text{V } T_a=85^\circ\text{C}$                                                    | ---                | ---                | 1    | $\mu\text{A}$ |
|                 | Cathode-anode breakdown voltage   | $V_{(BR) KAO}$    | $I_{KA}=0.1\text{mA}$                                                                        | 30                 | ---                | ---  | V             |
|                 | Anode - cathode breakdown voltage | $V_{(BR) AKO}$    | $I_{AK}=0.1\text{mA}$                                                                        | 0.5                | ---                | ---  | V             |
|                 | Photodiode output                 | $I_L$             | $I_F=5\text{mA}$<br>$V_{KA}=5\text{V}$                                                       | ---                |                    | 50   | $\mu\text{A}$ |
|                 | Capacitance                       | $C_{AK}$          | $V=0, f=1\text{MHz}$                                                                         | --                 | 10                 | --   | pF            |
| Characteristics | *1 Current transfer ratio         | CTR               | $I_F=5\text{mA}$<br>$V_{KA}=5\text{V}$                                                       | 0.1                | ---                | ---  | %             |
|                 | Isolation resistance              | $R_S$             | DC500V<br>40~60%R.H.                                                                         | $5 \times 10^{10}$ | $1 \times 10^{11}$ | ---  | $\Omega$      |
|                 | Capacitance (input to output)     | $C_S$             | $V=0, f=1\text{MHz}$                                                                         | ---                | 0.8                | ---  | pF            |
|                 | Response Time(Rise)               | $t_r$             | $V_{CC}=3.3\text{V}$<br>$R_D=510 \text{ ohm}$<br>$R_L=20\text{K ohm}$<br>$f=115200\text{HZ}$ | ---                | 2                  | 10   | $\mu\text{s}$ |
|                 | Response Time(Fall)               | $t_f$             |                                                                                              | ---                | 3                  | 10   |               |

\*1  $\text{CTR} = I_L / I_F \times 100\%$

## ● CHARACTERISTICS CURVES

Fig.1 Forward Current vs. Forward Voltage

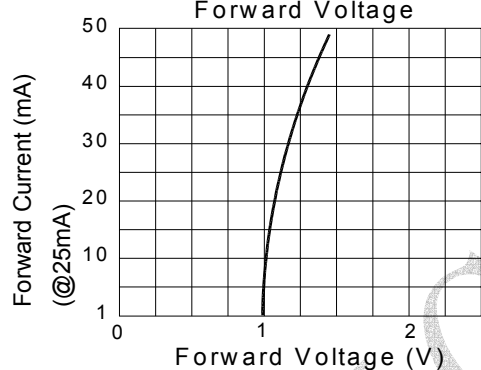


Fig.2 Forward Voltage vs. Ambient Temperature

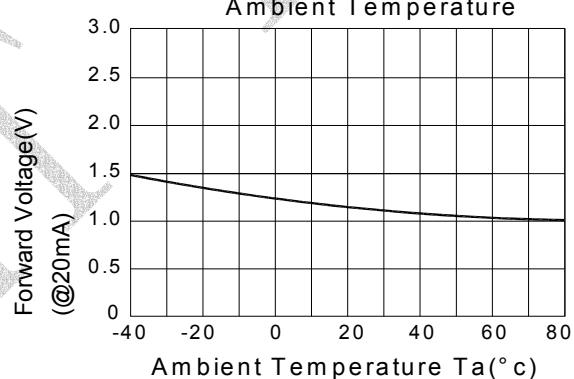


Fig.3 Current transfer ratio CTR vs. Forward Current

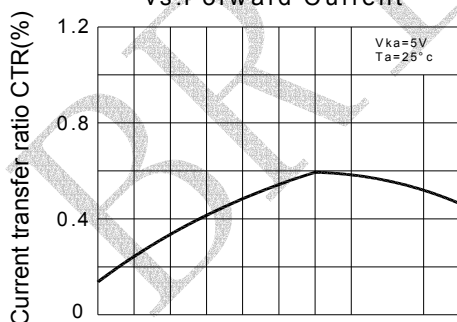
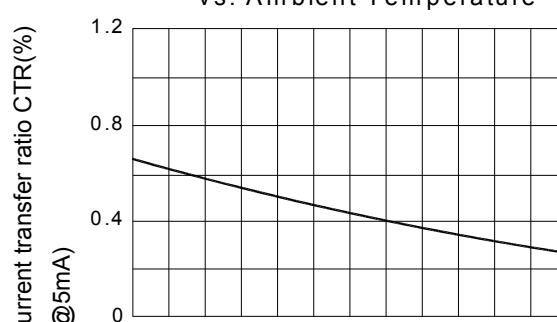
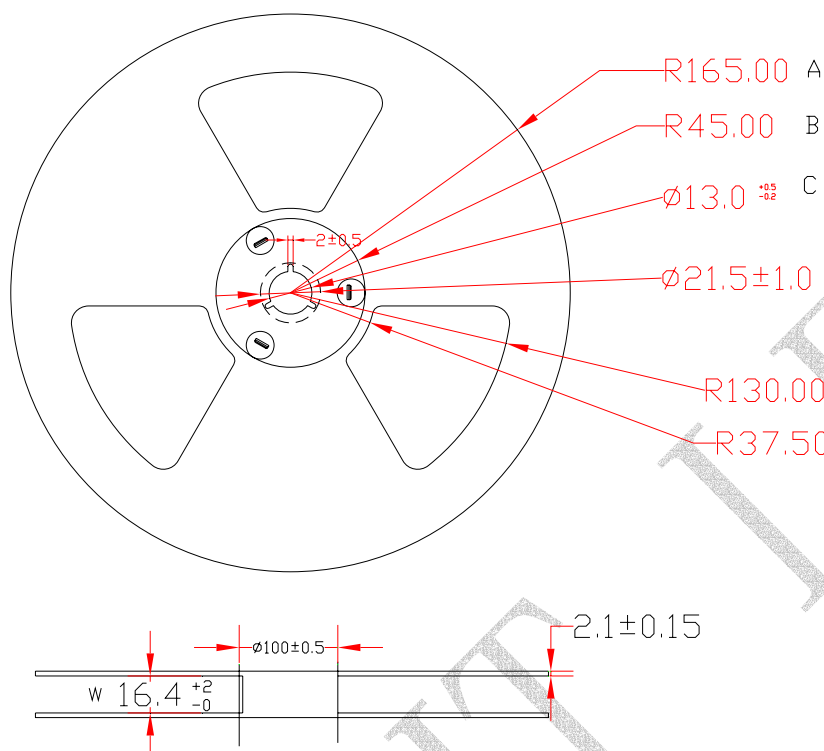


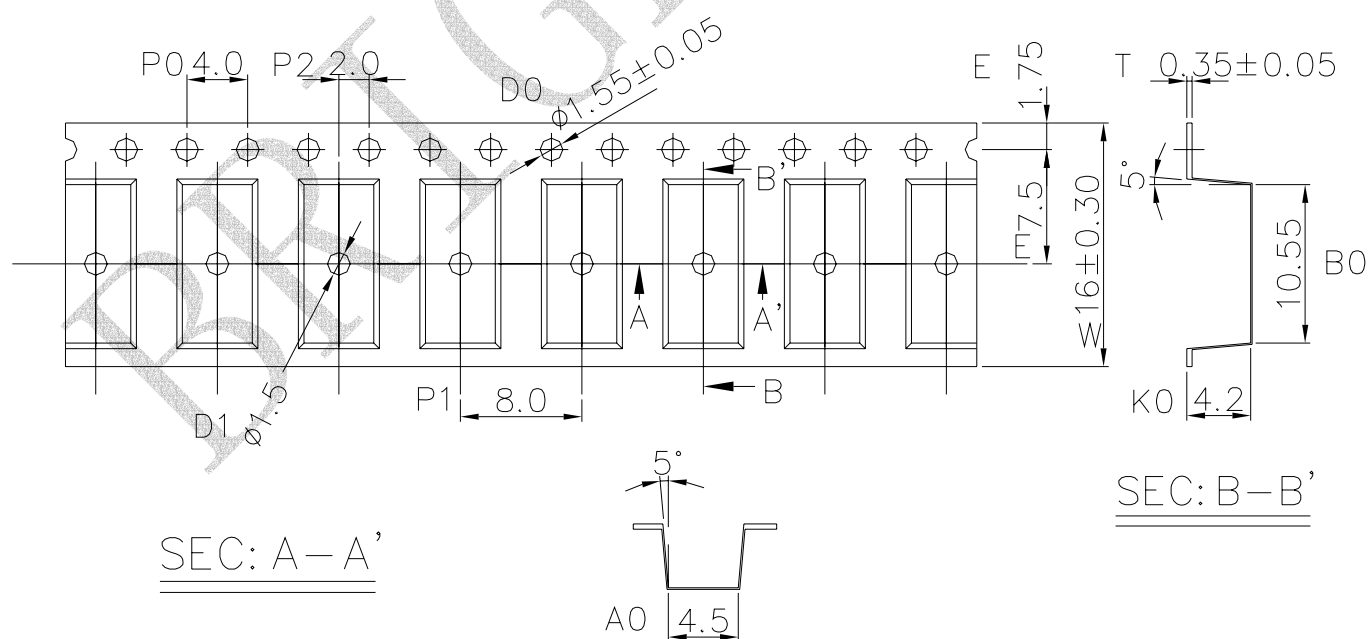
Fig.4 Current transfer ratio CTR vs. Ambient Temperature



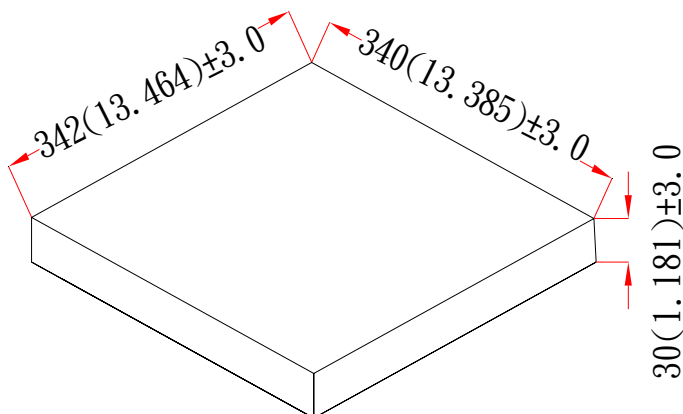
## ● Packaging Box Dimensions (Units: mm)



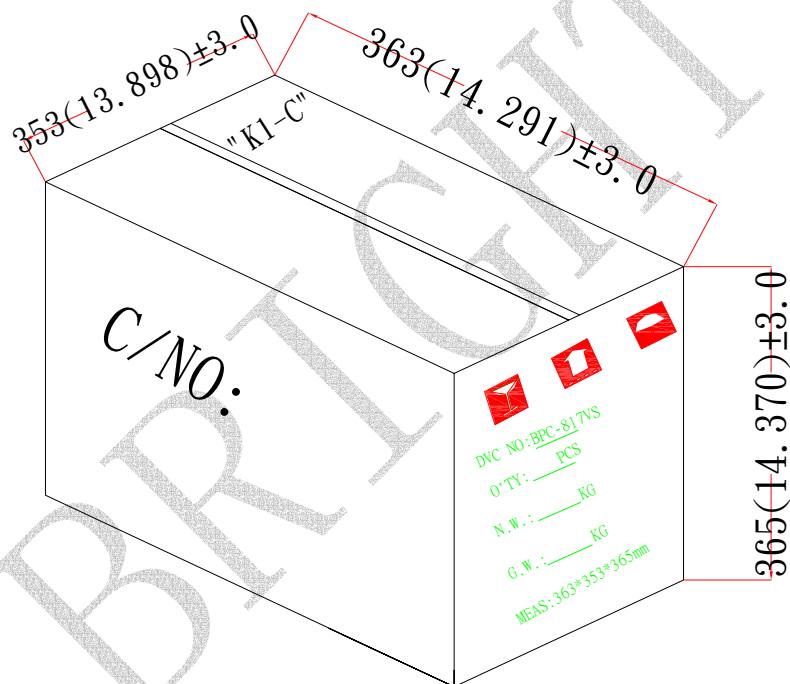
## ● Packaging Tube Dimensions



## ● Inner box



## ● Carton



### Notes:

- 1、2000 PCS per reel, 10reels per Carton.
- 2、All dimensions are in millimeters (inches).
- 3、Tolerance is  $\pm 0.10\text{mm}$  ( $0.004''$ ) unless otherwise specified.
- 4、Specifications are subject to change without notice.