



# BRIGHT LED ELECTRONICS CORP.

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 Revision: 1.1

Customer P/N:

Device Number : BPI-3C1-08

**Features:**

- \* Non-contact switching.
- \* For direct PC board or dual-in-line socket mounting.
- \* Fast switching speed.

Sheet Date	1	2	3	4	5	6	Contents	
2001.12.20	1.0	1.0	1.0	1.0	1.0	1.0	Initial Released	
2002.01.08	1.0	1.0	1.1	1.0	1.0	1.1	1. Packaging Dimensions: Pin Length: 10.0mm → 3.5mm 2. Packaging Bag Dimensions	
2002.03.11	1.0	1.1	1.1	1.0	1.0	1.1	Light current: I <sub>L</sub> : max 10mA → 5mA	

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## 佰鴻工業股份有限公司

### BRIGHT LED ELECTRONICS CORP.

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Approved	Drawn

# BRIGHT LED ELECTRONICS

Device Number : BPI-3C1-08  
 Absolute Maximum Rating (Ta=25 )

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Item		Symbol	Rating	Unit
Input	Power Dissipation	Pd	75	mW
	Reverse Voltage	V <sub>R</sub>	5	V
	Forward Current	I <sub>F</sub>	50	mA
	Peak Forward Current (*1)	I <sub>FP</sub>	1	A
Output	Collector Power Dissipation	P <sub>C</sub>	100	mW
	Collector Current	I <sub>C</sub>	20	mA
	C-E Voltage	V <sub>CEO</sub>	30	V
	E-C Voltage	V <sub>ECO</sub>	5	V
Operating Temperature		Topr	-25 ~ +85	
Storage Temperature		Tstg	-40 ~ +100	
Soldering Temperature (*2)		Tsol	260	

(\*1) tw=100 uSec., T=10 mSec.

(\*2) t=5 Sec

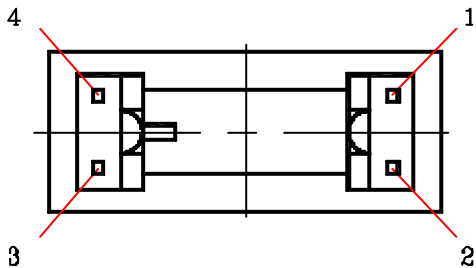
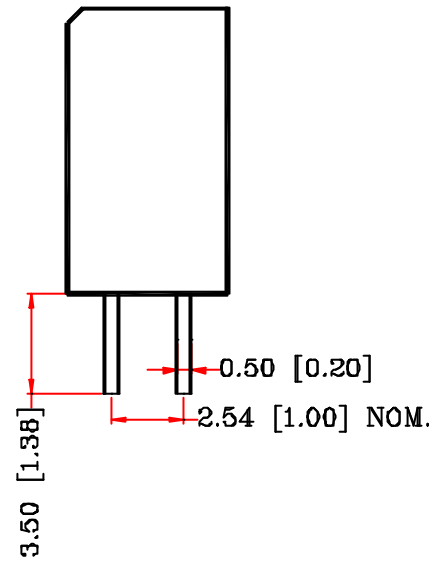
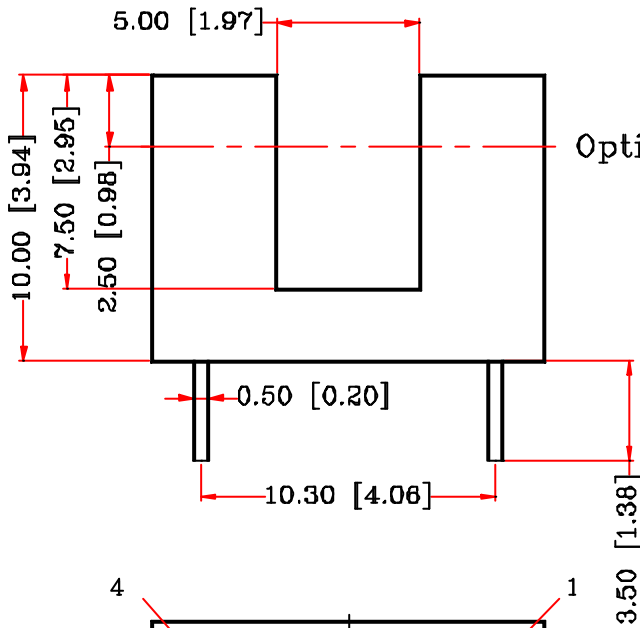
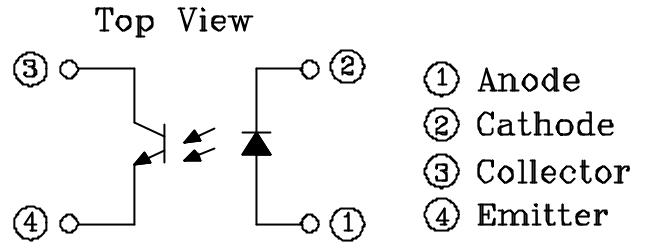
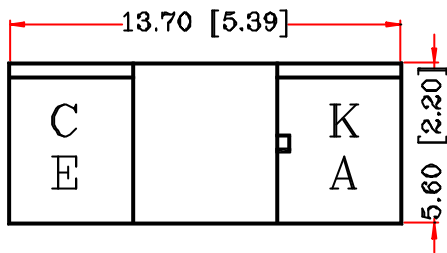
## Electrical Optical Characteristics (Ta=25 )

Parameter		Symbol	Condition	Min.	Typ.	Max.	Unit
Input	Forward Voltage	V <sub>F</sub>	I <sub>F</sub> =20mA	—	1.2	1.5	V
	Reverse Current	I <sub>R</sub>	V <sub>R</sub> =5V	—	—	10	μA
	Peak Wavelength	ρ	I <sub>F</sub> =10mA		940		nm
Output	Dark Current	I <sub>D</sub>	V <sub>CE</sub> =10V	—	—	100	nA
	C-E Saturation Voltage	V <sub>CE(sat)</sub>	I <sub>C</sub> =0.25mA I <sub>F</sub> =10mA	—	—	0.4	V
Light Current		I <sub>L</sub>	V <sub>CE</sub> =5V I <sub>F</sub> =10mA	0.5	—	5	mA
Speed	Rise Time	Tr	I <sub>FP</sub> =20mA V <sub>CE</sub> =5V	—	20	—	μsec
	Fall Time	Tf	R <sub>L</sub> =1000	—	20	—	μsec

# BRIGHT LED ELECTRONICS

Device Number : BPI-3C1-08  
 Package Dimensions

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## Notes:

1. All dimensions are in millimeters (inches).
2. Tolerance is  $\pm 0.25$ mm unless otherwise specified.
3. Lead spacing is measured where the leads emerge from the package.
4. Specifications are subject to change without notice.

# BRIGHT LED ELECTRONICS

Device Number : BPI-3C1-08  
 Typical Electrical / Optical Characteristics Curves (Ta=25 °C)

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Fig.1 Power Dissipation vs. Ambient Temperature

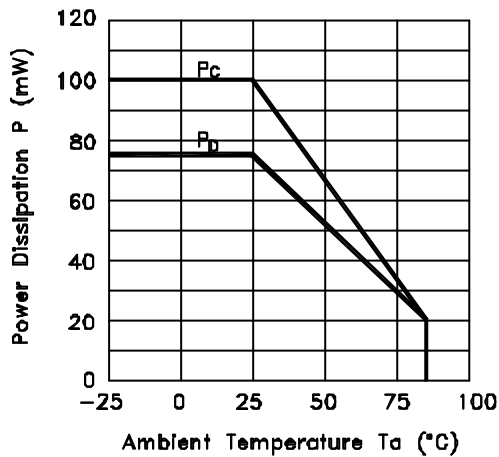


Fig.2 Forward Current I<sub>F</sub> vs. Forward Voltage V<sub>F</sub>

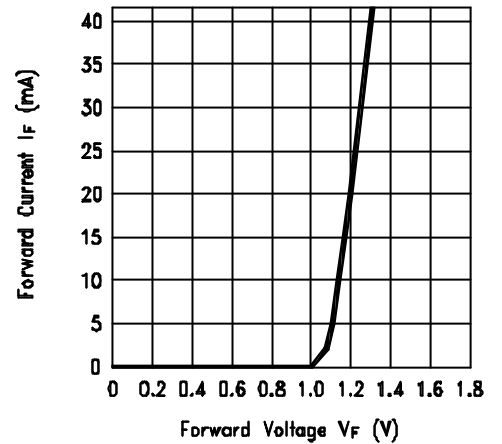


Fig.3 Collector Current I<sub>C</sub> vs. Collector-emitter Voltage

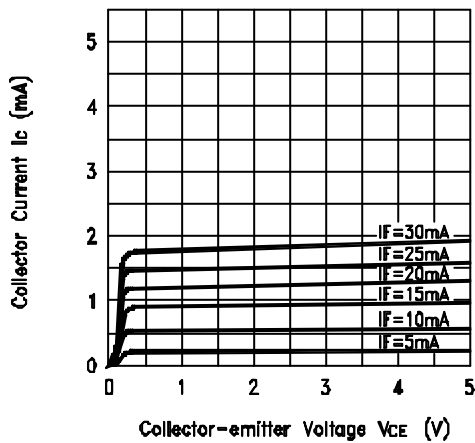
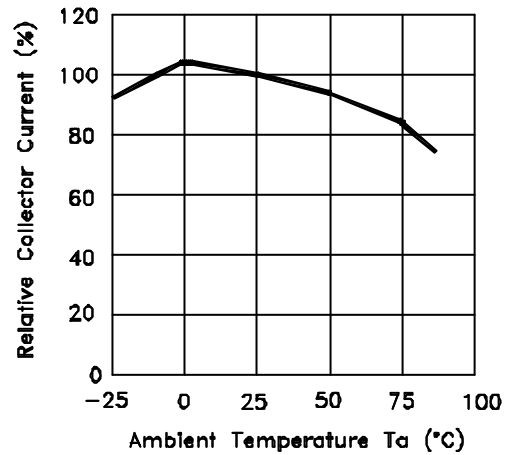


Fig.4 Collector Current vs. Ambient Temperature



# BRIGHT LED ELECTRONICS

Device Number : BPI-3C1-08

Typical Electric / Optical Characteristics Curves ( $T_a=25^\circ\text{C}$ )

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Fig.5 Collector-emitter Saturation Voltage vs. Ambient Temperature

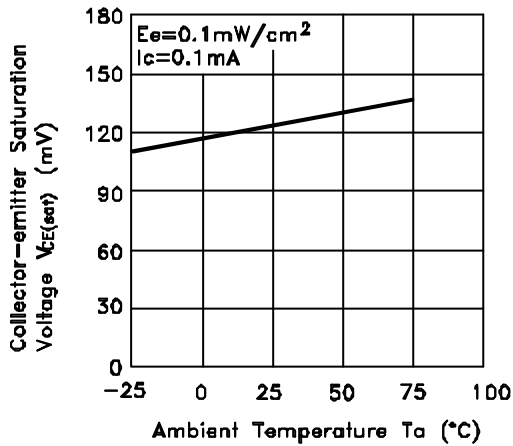


Fig.6 Response Time vs. Load Resistance

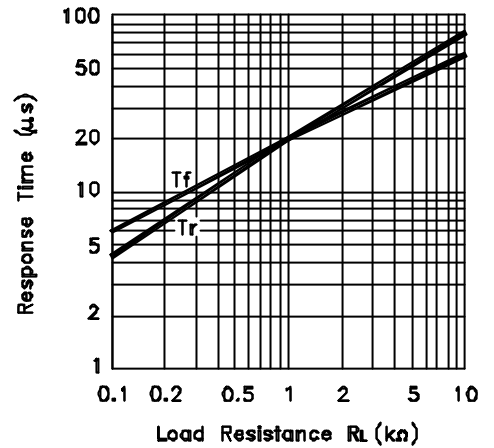
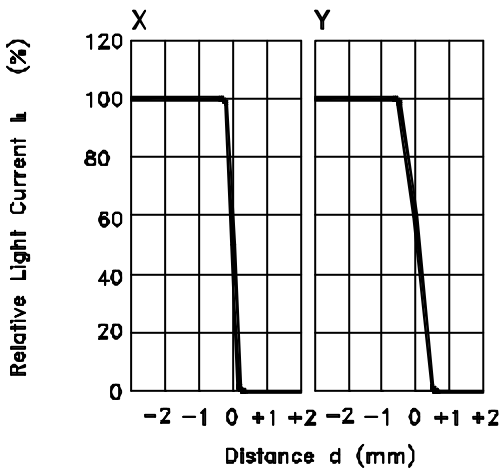
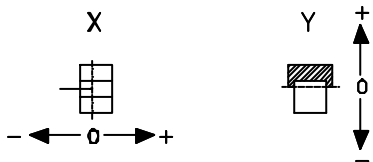


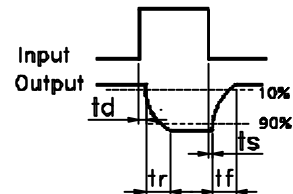
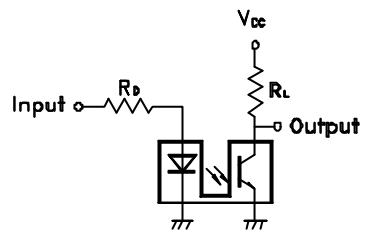
Fig.7 Sensing Position Characteristics (Typical)



(Center of Optical axis)



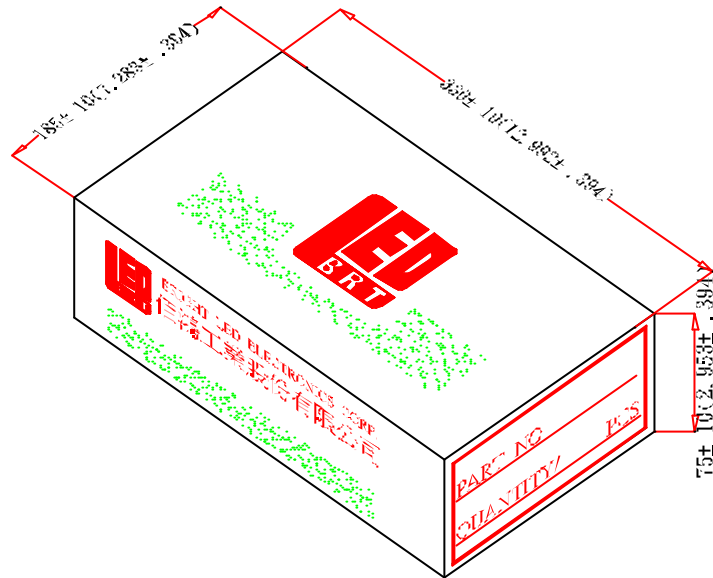
Test Circuit for Response Time



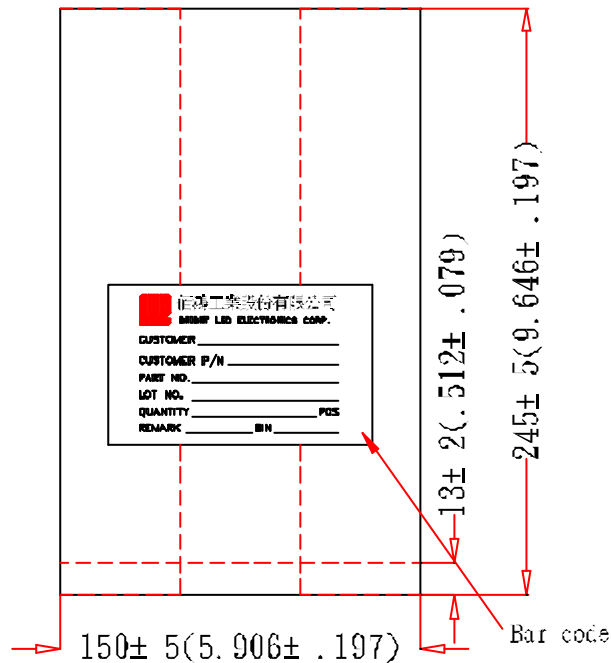
# BRIGHT LED ELECTRONICS

Device Number : BPI-3C1-08  
Packaging Box Dimensions

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## Packaging Bag Dimensions



### Notes:

1. 250pcs per bag, 1kpcs per box.
2. All Dimensions are in millimeters (inches).
3. Specifications are subject to change without notice.