



# BRIGHT LED ELECTRONICS CORP.

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Revision: 2.0

- Customer P/N:
- Device Number : BPI-3C1-05
- Features:
  - Non-contact switching.
  - For direct PC board or dual-in-line socket mounting.
  - Fast switching speed.
  - This product doesn't contain restriction substance, comply ROHS standard.

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	1.1	1.0	1.1	1.0	1.0	1.1	Packaging Dimensions: Pin Length: 9.12mm→3.5mm 2. Packaging Bag Dimensions
2002.03.21	1.2	1.1	1.1	1.0	1.0	1.1	Light Current: IL: max 10Ma→5Ma
2002.12.12	1.3	1.0	1.2	1.1	1.0	1.2	Packaging Dimensions: Slit Width 1.1mm→0.4mm 2. Packaging Bag Dimensions
2004.10.26	1.4	--	-	-	-	-	Features
2004.11.26	2.0	1.0	1.2	1.1	1.0	1.3	Packaging

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## 佰鴻工業股份有限公司

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Approved	Checked	Drawn
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# BRIGHT LED ELECTRONICS

- Device Number : BPI-3C1-05
- Absolute Maximum Rating (Ta=25°C)

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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>	40	mA
	C-E Voltage	V <sub>CEO</sub>	30	V
	E-C Voltage	V <sub>ECO</sub>	5	V
Operating Temperature		Topr	-25 ~ +85	°C
Storage Temperature		Tstg	-40 ~ +100	°C
Soldering Temperature (*2)		Tsol	260	°C

(\*1) tw=100 uSec. · T=10 mSec.

(\*2) t=5 Sec

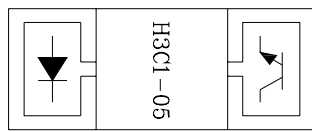
- Electrical Optical Characteristics (Ta=25°C)

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	—	—	100	μA
	Peak Wavelength	λ <sub>p</sub>	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	—	5.0	mA
Speed	Rise Time	Tr	I <sub>FP</sub> =20mA V <sub>CE</sub> =5V	—	20	—	μsec
	Fall Time	Tf	R <sub>L</sub> =1000Ω	—	20	—	μsec

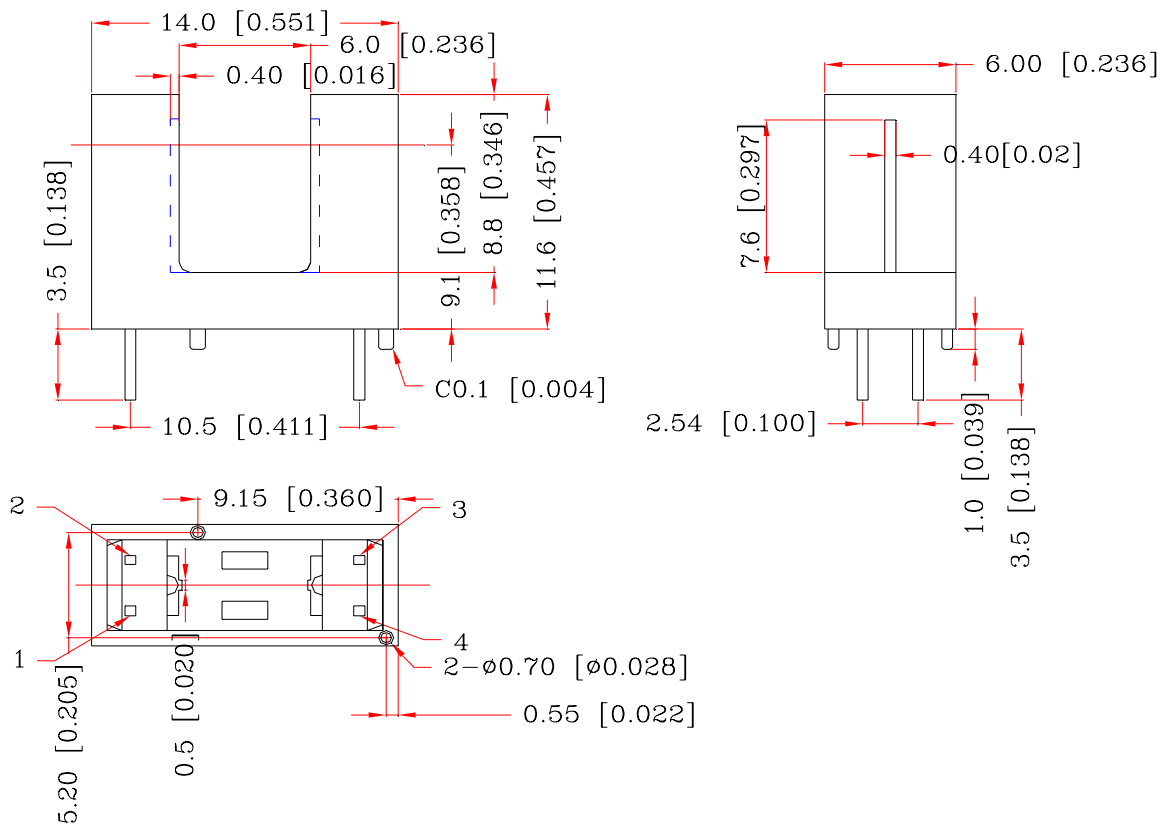
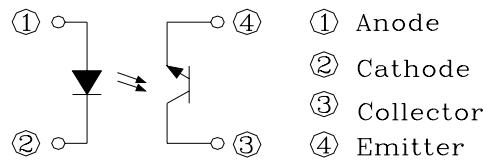
# BRIGHT LED ELECTRONICS

- Device Number : BPI-3C1-05
- Package Dimensions

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Top View



## 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-3C1-05
- Typical Electrical / Optical Characteristics Curves (Ta=25°C)

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Fig.1 Power Dissipation vs. Ambient Temperature

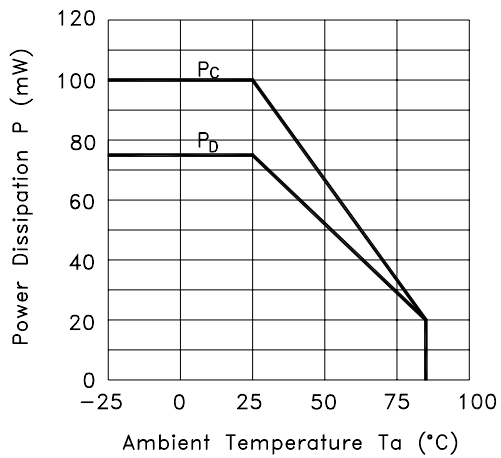


Fig.2 Forward Current vs. Forward Voltage

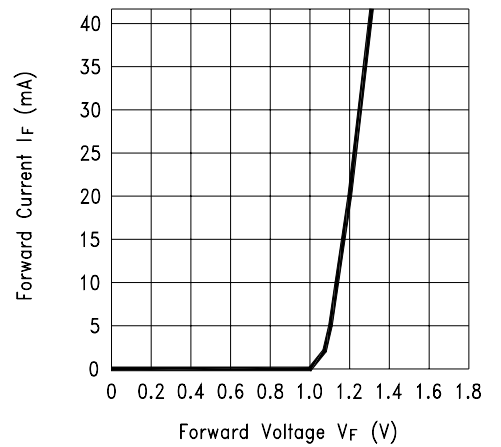


Fig.3 Collector Current vs. Collector-emitter Voltage

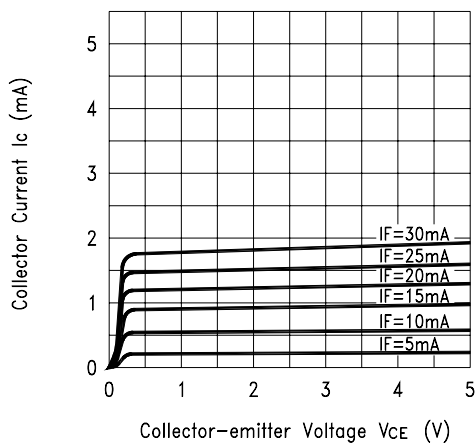
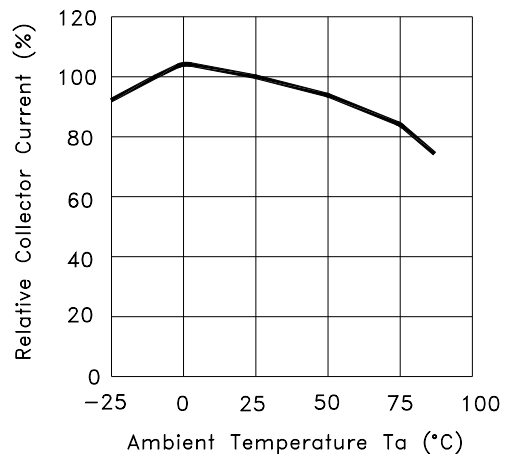


Fig.4 Collector Current vs. Ambient Temperature



# BRIGHT LED ELECTRONICS

- Device Number : BPI-3C1-05
- Typical Electric / Optical Characteristics Curves ( $T_a=25^\circ\text{C}$ )

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

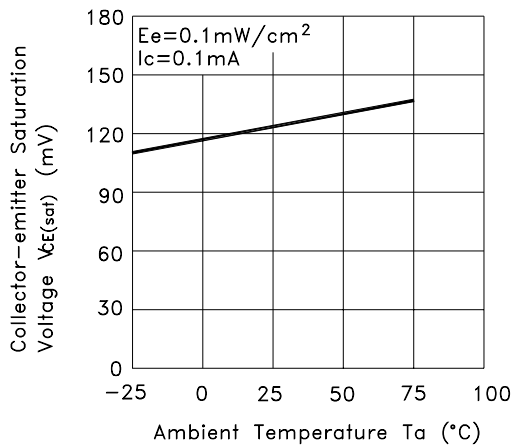


Fig.6 Response Time vs. Load Resistance

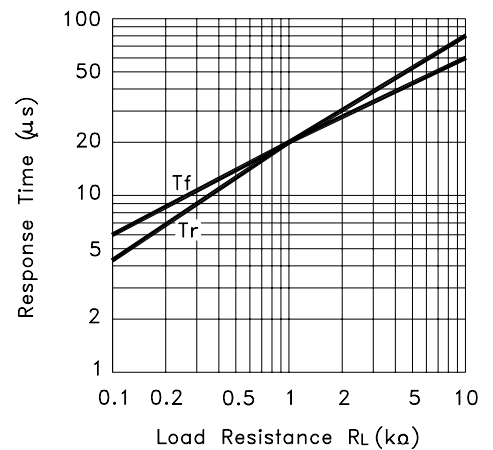
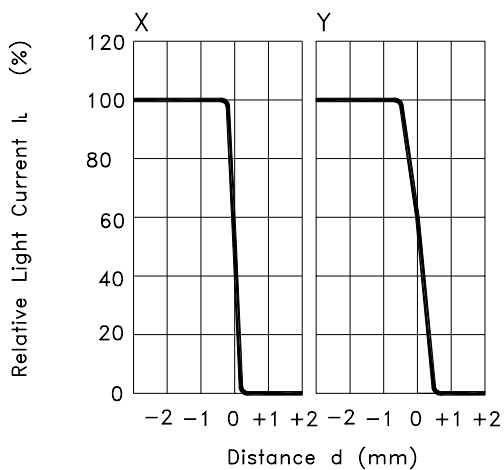
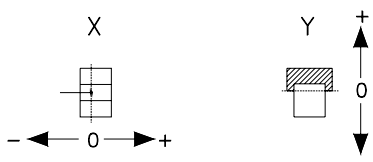


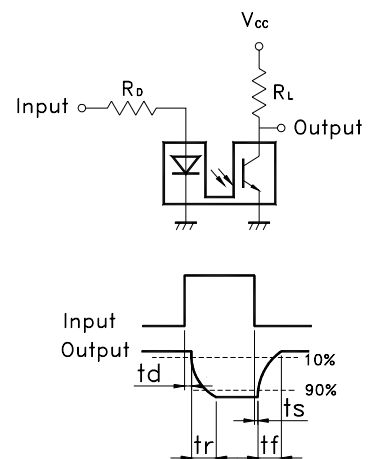
Fig.7 Sensing Position Characteristics (Typical)



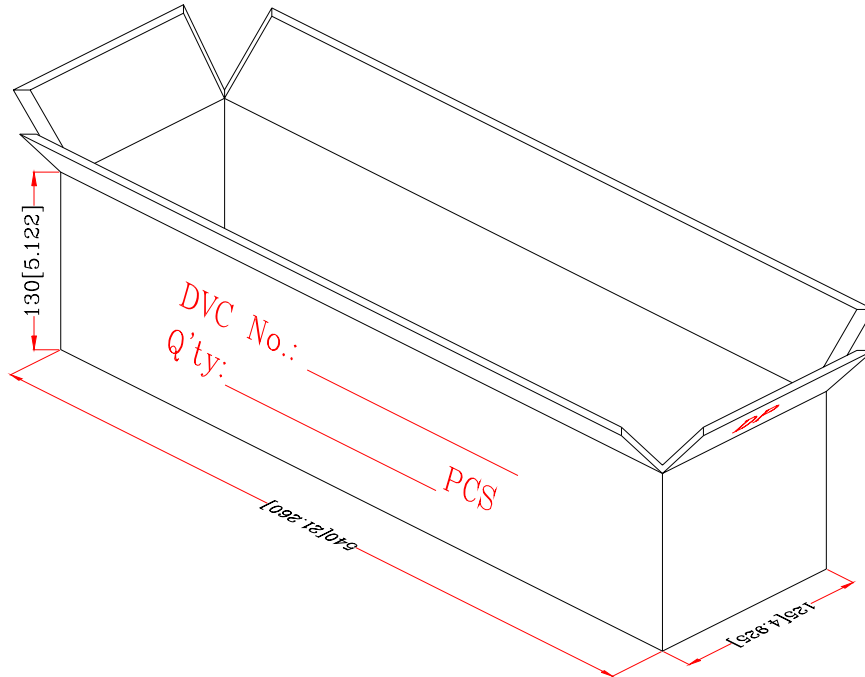
(Center of Optical axis)



Test Circuit for Response Time



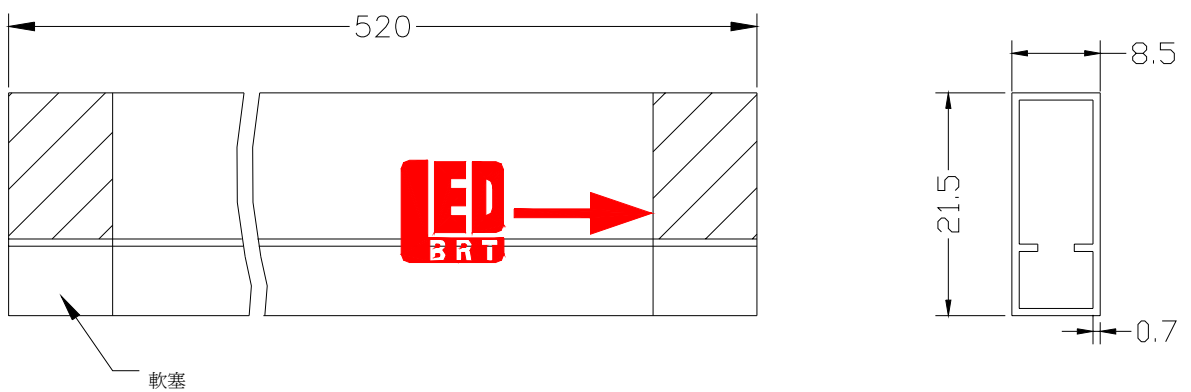
# BRIGHT LED ELECTRONICS



- Device Number : BPI-3C1-05
- Packaging Box Dimensions

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- Packaging Tube Dimensions



## Notes:

1. 35pcs per tube, 2.73kpcs per box.
2. All Dimensions are in millimeters (inches).
3. Specifications are subject to change without notice.