



BRIGHT LED ELECTRONICS CORP.

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Revision: 1.0

- Device Number: BPR-105F
- Features:
 - * Compact
 - * High performance
 - * High-speed response
 - * Easy to mount on PCB
 - * Widely applicable

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2003.04.26	1.0	1.0	1.0	1.0	1.0	1.0			Initial Released

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BRIGHT LED ELECTRONICS CORP.

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BRIGHT LED ELECTRONICS

- Device Number: BPR-105F
- Absolute Maximum Rating (Ta=25°C)

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Item		Symbol	Rating	Unit
Input	Power Dissipation	Pd	75	mW
	Reverse Voltage	V _R	5	V
	Forward Current	I _F	50	mA
	Peak Forward Current (*1)	I _{FP}	1	A
Output	Collector Power Dissipation	P _C	100	mW
	Collector Current	I _C	20	mA
	C-E Voltage	V _{CEO}	30	V
	E-C Voltage	V _{ECO}	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

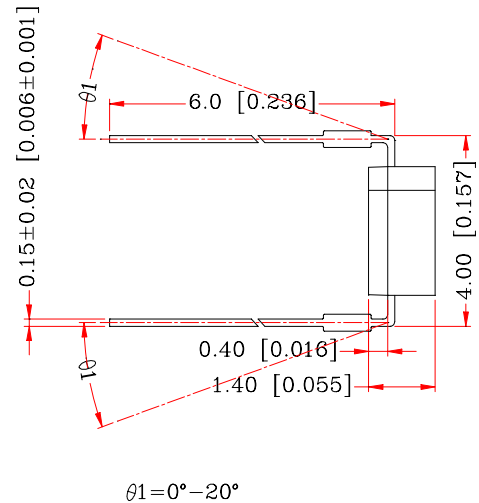
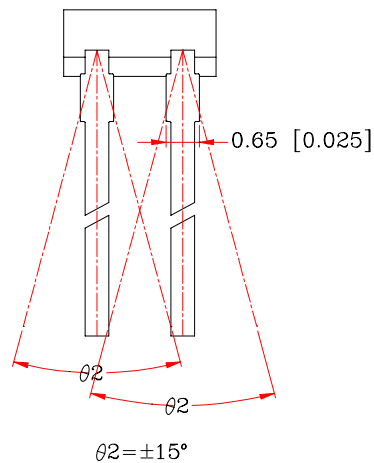
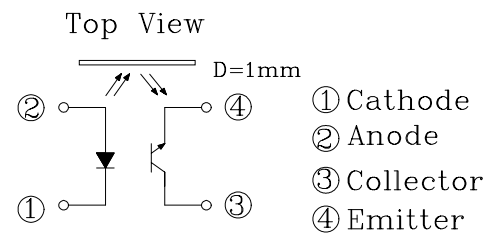
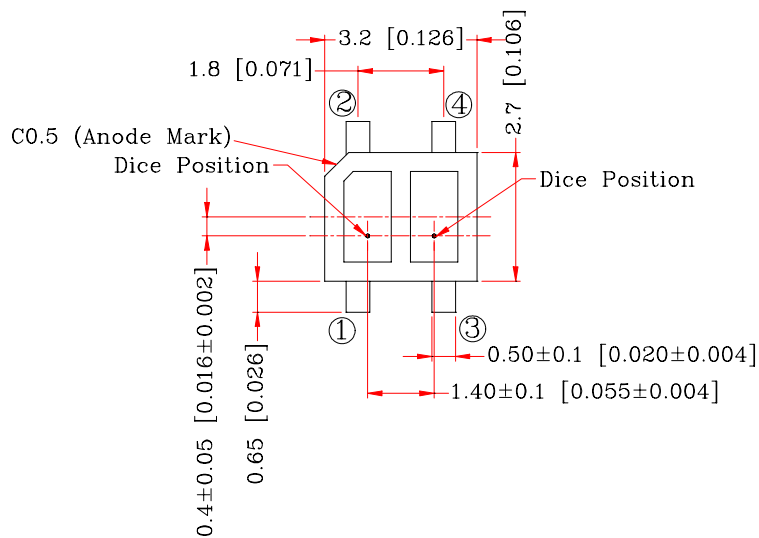
- Electrical Optical Characteristics (Ta=25°C)

Parameter		Symbol	Condition	Min.	Typ.	Max.	Unit	BIN No.
Input	Forward Voltage	V _F	I _F =20mA	—	1.2	1.5	V	
	Reverse Current	I _R	V _R =5V	—	—	100	μA	
	Peak Wavelength	λ _p	I _F =10mA		940		nm	
Output	Dark Current	I _D	V _{CE} =10V	—	—	200	nA	
	C-E Saturation Voltage	V _{CE(sat)}	I _C =0.25mA I _F =10mA	—	—	0.4	V	
Light Current		I _L	V _{CE} =5V I _F =10mA D=1.0mm (90% Reflective white paper)	80	—	240	μA	BIN A
				160	—	480		BIN B
				320	—	960		BIN C
				640	—	1920		BIN D
Speed	Rise Time	Tr	I _{FP} =20mA V _{CE} =5V R _L =1000Ω	—	20	—	μsec	
	Fall Time	Tf		—	20	—	μsec	

BRIGHT LED ELECTRONICS

- Device Number: BPR-105F
- Package Dimensions

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Notes:

1. All dimensions are in millimeters (inches).
2. Tolerance is $\pm 0.25\text{mm}$ 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: BPR-105F
- Typical Electrical / Optical Characteristics Curves (Ta=25°C)

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Fig.1 Power Dissipation vs. Ambient Temperature

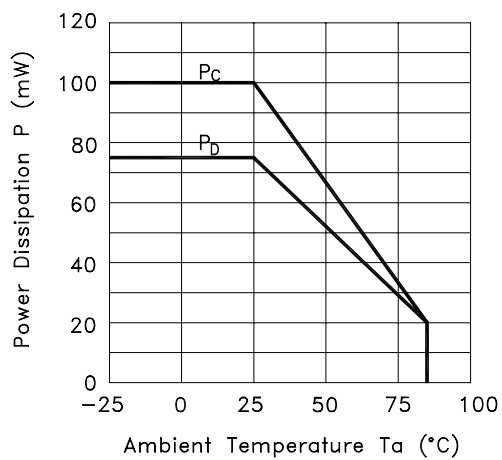


Fig.2 Forward Current vs. Forward Voltage

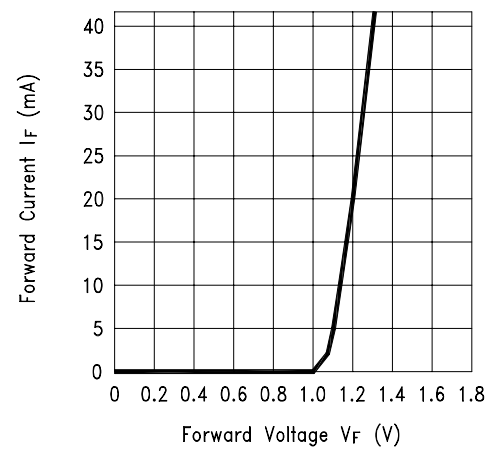


Fig.3 Collector Current vs. Collector-emitter Voltage

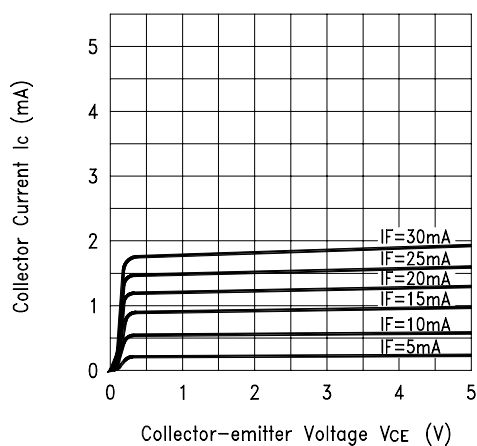
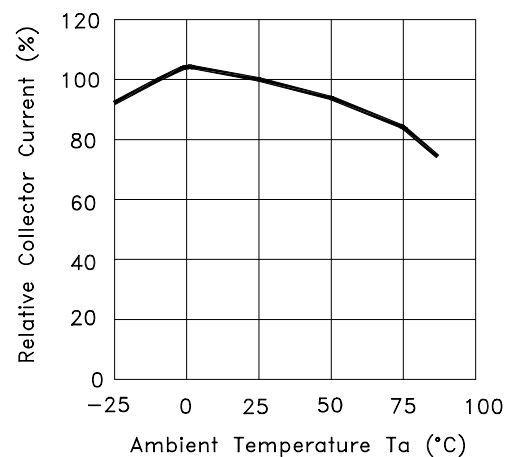


Fig.4 Collector Current vs. Ambient Temperature



BRIGHT LED ELECTRONICS

- Device Number: BPR-105F
- Typical Electric / Optical Characteristics Curves ($T_a=25^\circ\text{C}$)

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

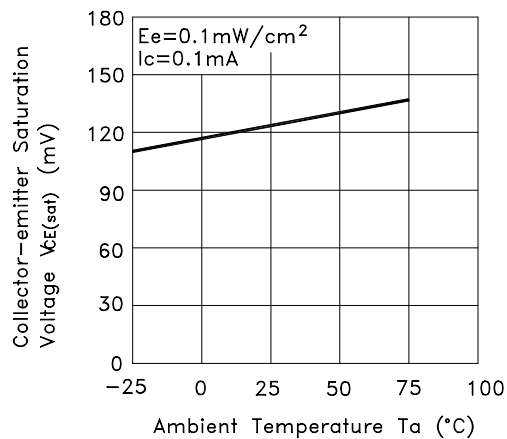


Fig.6 Response Time vs. Load Resistance

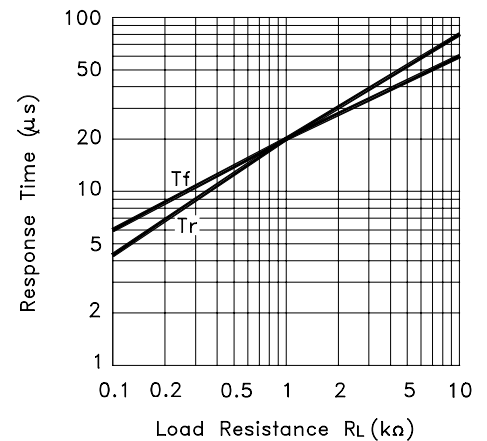
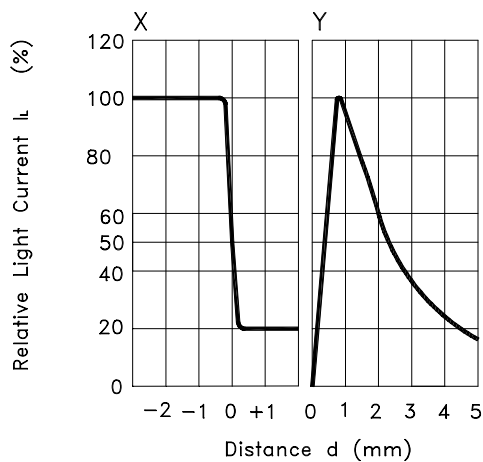
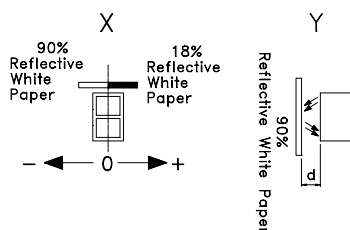


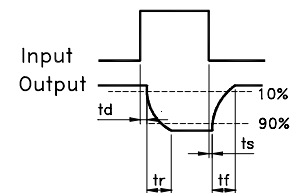
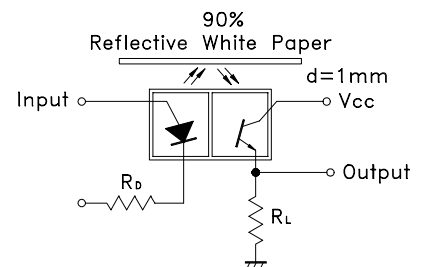
Fig.7 Sensing Position Characteristics (Typical)



(Center of Optical axis)



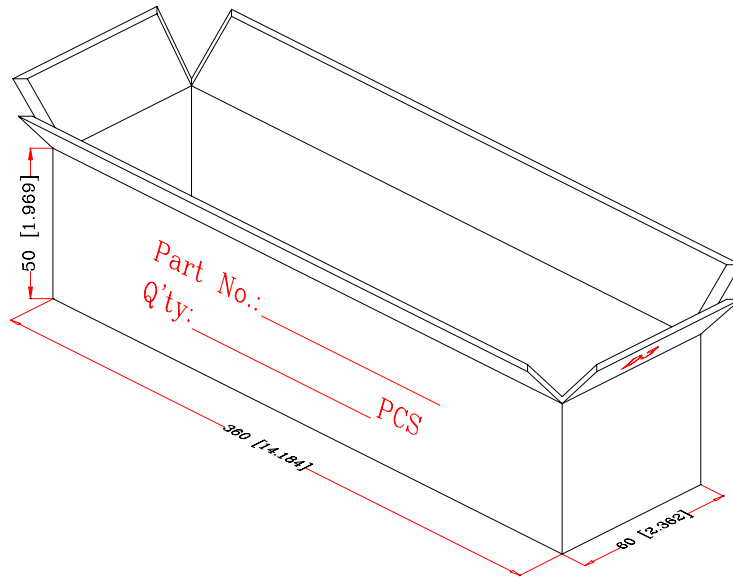
Test Circuit for Response Time



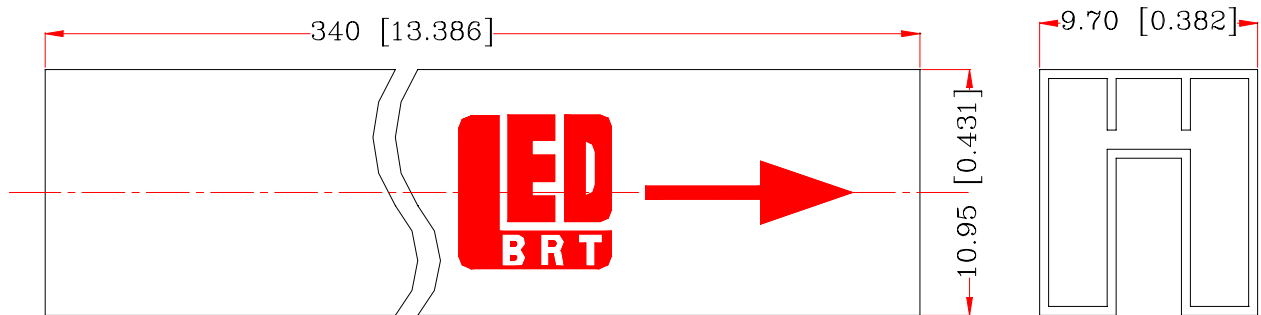
BRIGHT LED ELECTRONICS

- Device Number : BPR-105F
- Packaging Box Dimensions

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- Packaging Tube Dimensions



Notes:

1. 100pcs per tube, 5kpcs per box.
2. All Dimensions are in millimeters (inches).
3. Specifications are subject to change without notice.