

# Photointerrupter

## Model No: LBT-135

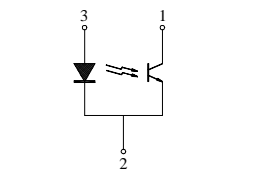
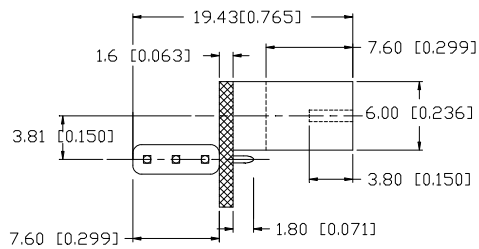
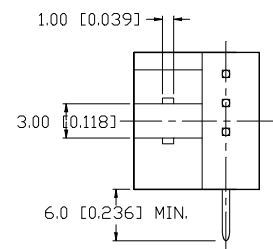
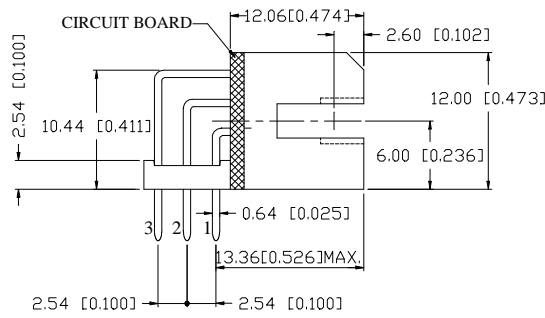
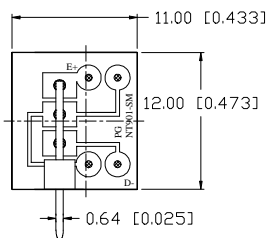
### Features

- High sensing accuracy (Slit width: 1.0 mm)
- PWB direct mounting type package

### Applications

- Copiers, printers, facsimiles
- Optoelectronic switches

### Outline Dimensions



PIN 1 D- (Collector)  
 PIN 2 COMMON (Emitter/Cathode)  
 PIN 3 E+ (Anode)

NOTE:  
 1. All dimensions are in millimeters (inches).  
 2. Tolerance is  $\pm 0.25\text{mm}$  (0.010") unless otherwise noted.

## Absolute Maximum Ratings (Ambient Temperature: 25°C)

Item		Symbol	Rating	Unit
Input	Forward current	$I_F$	50	mA
	Reverse voltage	$V_R$	5	V
	Pulse forward*1 current	$I_{FP}$	1	A
Output	Collector power dissipation	$P_C$	75	mW
	Collector current	$I_C$	50	mA
	C-E voltage	$V_{CEO}$	30	V
	E-C voltage	$V_{ECO}$	5	V
Operating Temp		$T_{opr.}$	-25~+85	°C
Storage Temp		$T_{stg.}$	-30~+100	°C
Soldering Temperature		$T_{sol}$	240	°C

## ELECTRO-OPTICAL CHARACTERISTICS

 $(T_a = 25^\circ\text{C})$ 

Item		Symbol	Conditions	Min.	Typ.	Max.	Unit.
Input	Forward voltage	$V_F$	$I_F=20\text{mA}$		<b>1.2</b>	<b>1.4</b>	V
	Reverse current	$I_R$	$V_R=5\text{V}$			<b>10</b>	$\mu\text{A}$
	Peak wavelength	$\lambda_p$			<b>940</b>		nm
Output	Collector dark current	$I_D$	$V_{CE}=24\text{V}, I_F=0$		<b>5</b>	<b>100</b>	nA
Collector current		$I_C$	$V_{CE}=5\text{V}, I_F=20\text{mA}$	<b>0.5</b>	<b>2.0</b>		mA
C-E Saturation voltage		$V_{CE(SAT)}$	$I_C=1\text{mA}, I_F=20\text{mA}$		<b>0.15</b>	<b>0.4</b>	V
Switching	Rise time	$t_r$	$V_{CE}=2\text{V}, I_C=100\mu\text{A}$		<b>30</b>		$\mu\text{sec.}$
speeds	Fall time	$t_f$	$R_L=1\text{k}\Omega$		<b>25</b>		$\mu\text{sec.}$

## Reference Data

Fig.1 Forward Current vs. Ambient Temperature

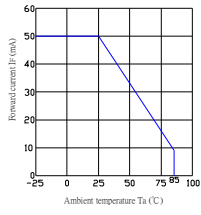


Fig.2 Collector Power Dissipation vs. Ambient Temperature

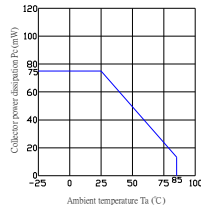


Fig.7 Collector Current vs. Ambient Temperature

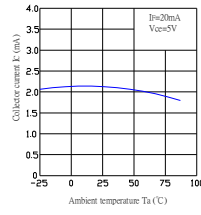


Fig.8 Collector-Emitter Saturation Voltage vs. Ambient Temperature

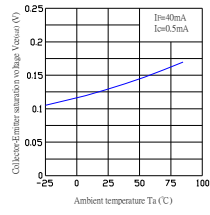


Fig.3 Peak Forward Current vs. Duty Ratio

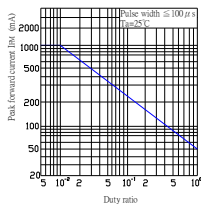


Fig.4 Forward Current vs. Forward Voltage

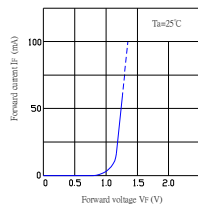


Fig.9 Response Time vs. Load Resistance

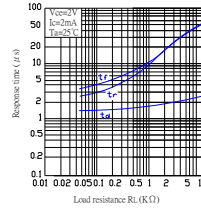


Fig.10 Collector Dark Current vs. Ambient Temperature

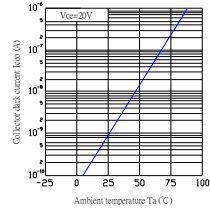


Fig.5 Collector Current vs. Forward Current

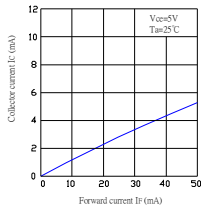


Fig.6 Collector Current vs. Collector-Emitter Voltage

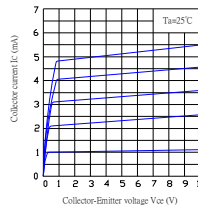
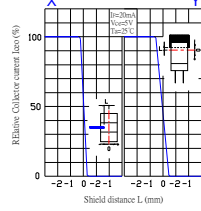


Fig.11 Relative Collector Current vs. Shield Distance



Test Circuit for Response Time

