EN: This Datasheet/Document is presented by the manufacturer.

Please visit our website for pricing and availability at www.hestore.hu.

Reflective Photointerrupters

LTH-209-01/LTH-1550-01/LTH-1650-01

Features

- Non-contact switching.
- For direct PC board or dual-in-line socket mounting.
- Fast switching speed.
- Reflective object sensor.

Application

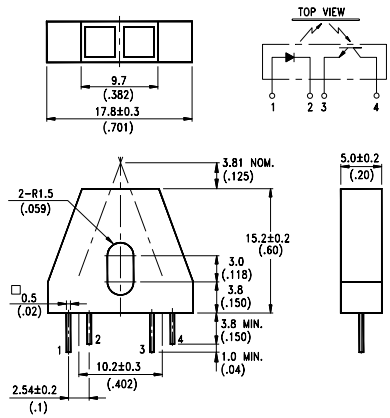
- FAX machine
- Printer
- COPY machine
- Counter

Description

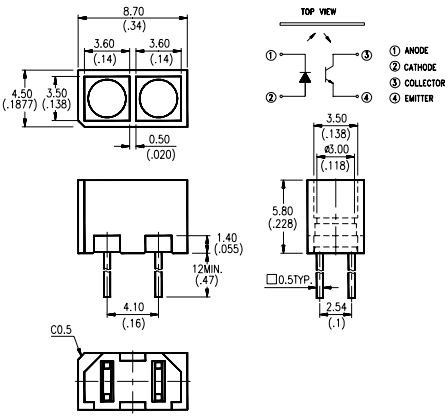
The LTH-209-01/LTH-1550-01/LTH-1650-01 reflective object sensors consist of an infrared emitting diode and a NPN sillicon phototransistor mounted side by side on converging optical axis in a black plastic housing.

Package Dimensions

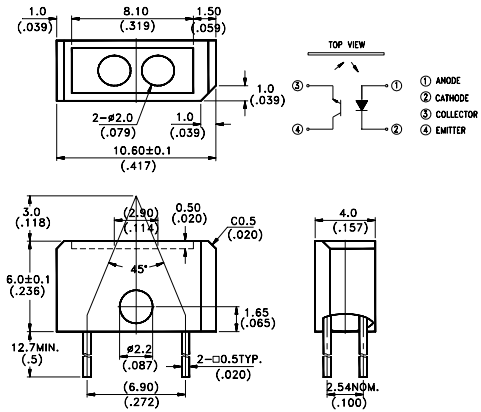
LTH-209-01



LTH-1550-01



LTH-1650-01



Notes:

1. All dimensions are in millimeters (inches).
2. Tolerance is ± 0.25 mm (.010").
3. Lead spacing is measured where the leads emerge from the package.
4. Specifications are subject to change without notice.

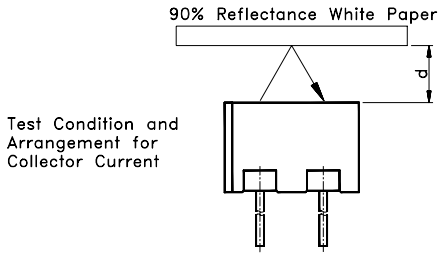
Absolute Maximum Rating at Ta=25℃

Parameter		Symbol	Maximum Rating	Unit
Input LED	Continuous Forward Current	I_F	60	mA
	Reverse Voltage	V_R	5	V
	Peak Forward Current (Pulse Wide=10 μ S,300PPS)	I_{CP}	1	A
	Power Dissipation	P_D	75	mW
Output phototransistor	Collector Current	I_C	20	mA
	Power Dissipation	P_C	100	mW
	Collector-emitter Voltage	V_{CEO}	30	V
	Emitter-collector Voltage	V_{ECO}	5	V
Operating Temperature Range		T_{opr}	-25℃ to + 85℃	
Storage Temperature Range		T_{stg}	-40℃ to + 100℃	
Lead Soldering Temperature [1.6mm(.063 in.)from body]		Ts	260℃ for 5 Seconds	

Electrical Optical Characteristics at Ta=25℃

Parameter		Symbol	Part No.	Min.	Typ.	Max.	Unit	Test Condition	Bin No.
Input LED									
Forward Voltage		V_F			1.2	1.6	V	I_F=20mA	
Reverse Current		I_R				100	μ A	V_R=5V	
Output phototransistor									
Collector Dark Current		I_{CEO}				100	nA	V_{CE}=10V	
Coupler									
Collector-Emitter Saturation Voltage		$V_{CE(sat)}$	LTH-209-01			0.4	V	I_C=0.08mA,I_F=20mA	
			LTH-1550-01			0.4		I_C=0.10mA,I_F=20mA	
			LTH-1650-01			0.4		I_C=0.05mA,I_F=20mA	
On State Collector Current		$I_{C(ON)}$	LTH-209-01	160			μ A	NOTE1	
			LTH-1550-01	200	400	400		NOTE2	BINA
				300		600			BINB
				500		1000			BINC
				800		1600			BIND
			LTH-1650-01	100		300		NOTE3	BINA
				200		600			BINB
				400		1200			BINC
Response Time	Rise Time	tr			3	15	μ S	V_{CE}=5V,I_C=2mA R_L=100 Ω	
	Fall Time	tf			4	20			

NOTE1: VCE=5V, IF=20mA, d=3.81MM, 90% Reflectance White Paper
NOTE2: VCE=5V, IF=20mA, d=3.50MM, 90% Reflectance White Paper
NOTE3: VCE=5V, IF=20mA, d=3.00MM, 90% Reflectance White Paper



Typical Electrical/Optical Characteristic Curves (25℃ Ambient Temperature Unless Otherwise Noted)

Fig.1 Power Dissipation vs. Ambient Temperature

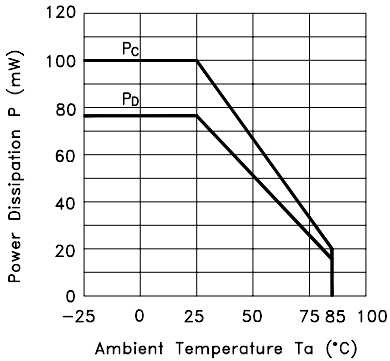


Fig.2 Forward Current vs. Forward Voltage

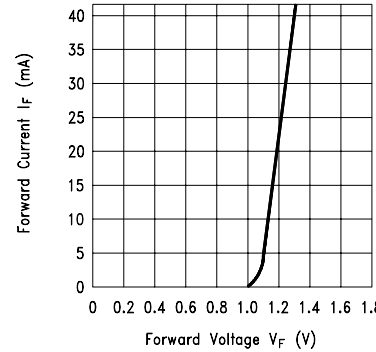


Fig.3 Collector Current vs. Collector−emitter Voltage

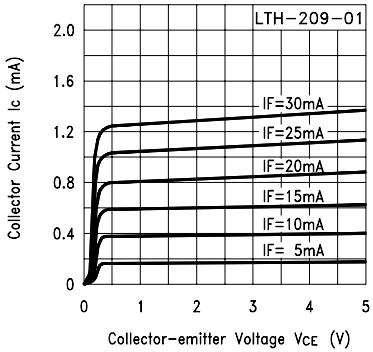


Fig.4 Collector Current vs. Collector−emitter Voltage

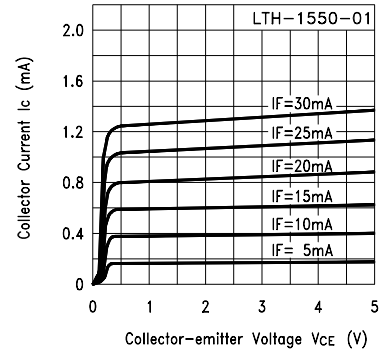


Fig.5 Collector Current vs. Collector−emitter Voltage

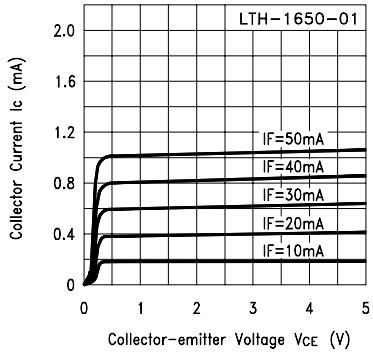
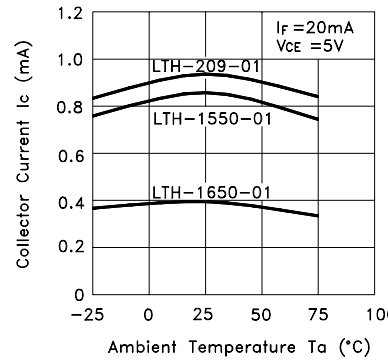


Fig.6 Collector Current vs. Ambient Temperature



Typical Electrical/Optical Characteristic Curves (25℃ Ambient Temperature Unless Otherwise Noted)

Fig.7 Collector−emtter Saturation Voltage vs. Ambient Temperature

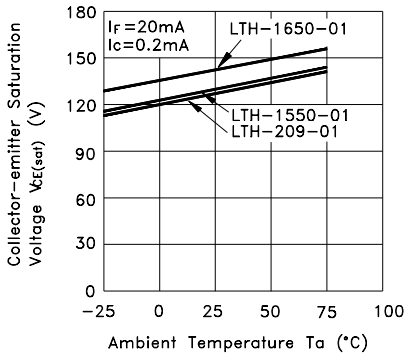


Fig.8 Relative Collector Current vs. Object Distance

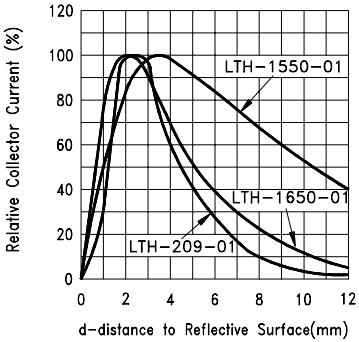
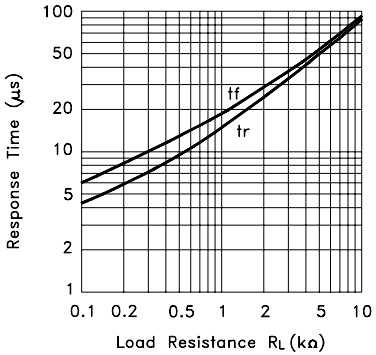
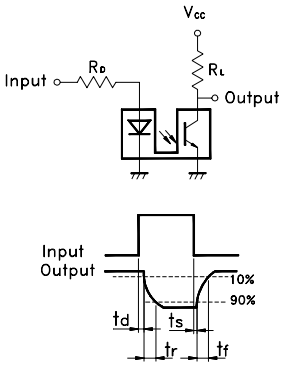


Fig.9 Response Time vs. Load Resistance



Test Circuit for Response Time



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