LITEON®
OPTOELECTRONICS

Photointerrupter

Product Data Sheet

LTH-860/870 SERIES

Spec No.: DS-55-92-0008

Effective Date: 07/04/2000

Revision: -

LITE-ON DCC

RELEASE

BNS-OD-FC001/A4

LITE-ON Technology Corp. / Optoelectronics
No.90,Chien 1 Road, Chung Ho, New Taipei City 23585, Taiwan, R.O.C.
Tel: 886-2-2222-6181 Fax: 886-2-2221-1948 / 886-2-2221-0660
http://www.liteon.com/opto

FEATURES

* NON-CONTCACT SWITCHING.
* FAST SWITCHING SPEED.
* FOR DIRECT PC BOARD OR DUAL-IN-LINE SOCKET MOUNTING.
* CHOICE OF MOUNTING CONFIGURATION.

APPLICATION

* FAX MACHINE
* SCANNER
* COPY MACHINE
* DISK DRIVER

Part Numbering Guide

LTH – 8 X X – X X X

Basic Part Number

Housing Material
6=Polysulfone , IR Transmissive
7=Polysulfone,Opaque

Mechanical and Electrical Spec.
0=Electrical Parameter A
Lead Spacing : .320 in.(8.13mm)
1=Electrical Parameter B
Lead Spacing : .320 in.(8.13mm)
2=Electrical Parameter C
Lead Spacing : .320 in.(8.13mm)
5=Electrical Parameter A
Lead Spacing : .220 in.(5.59mm)
6=Electrical Parameter B
Lead Spacing : .220 in.(5.59mm)
7=Electrical Parameter C
Lead Spacing : .220 in.(5.59mm)

Aperture Width in front of Sensor
(5) 5=. 050 in. (1.27mm)
* 1=. 010 in. (. 25mm)
Aperture Lengths are 0.06 in. (1.52mm)
*Available with Parameter A only

Apreture Width in front of IRED (5)
5= .050 in. (1.27mm)

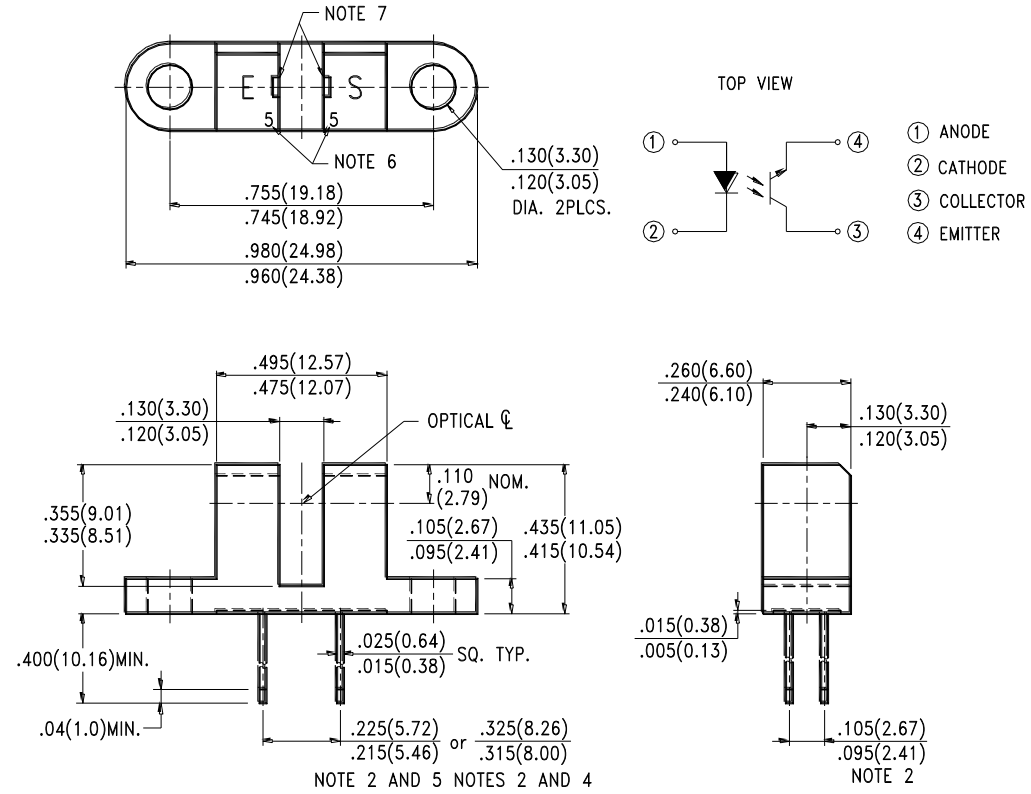
Mounting Configurations
T=Both Mounting Tabs.
P=Single Mounting Tabs,
Sensor Side
L=Single Mounting Tabs,
Emitter Side
N=No Mounting Tabs.

DESCRIPTION

THE LTH-860/LTH-870 SERIES PROVIDE THE DESIGN ENGINEER WITH THE FLEXIBILITY OF A CUSTOM DEVICE FROM A STANDARD PRODUCT LINE. THE USER CAN SPECIFY (1) ELECTRICAL OUTPUT PARAMETERS, (2) MOUNTING TAB CONFIGURATION, (3) CHOICE OF LEAD SPACING, (4) DISCRET SHELL MATERIAL AND (5) APERTURE WIDTH.

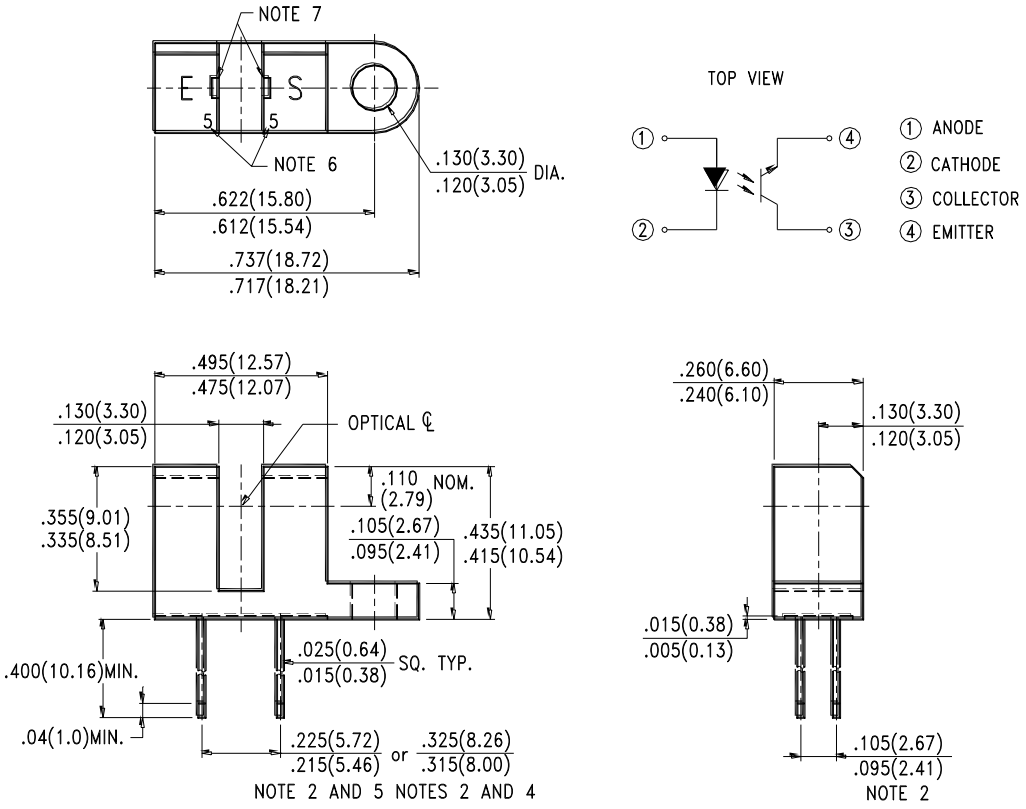
PACKAGE DIMENSIONS

Package Configuration T



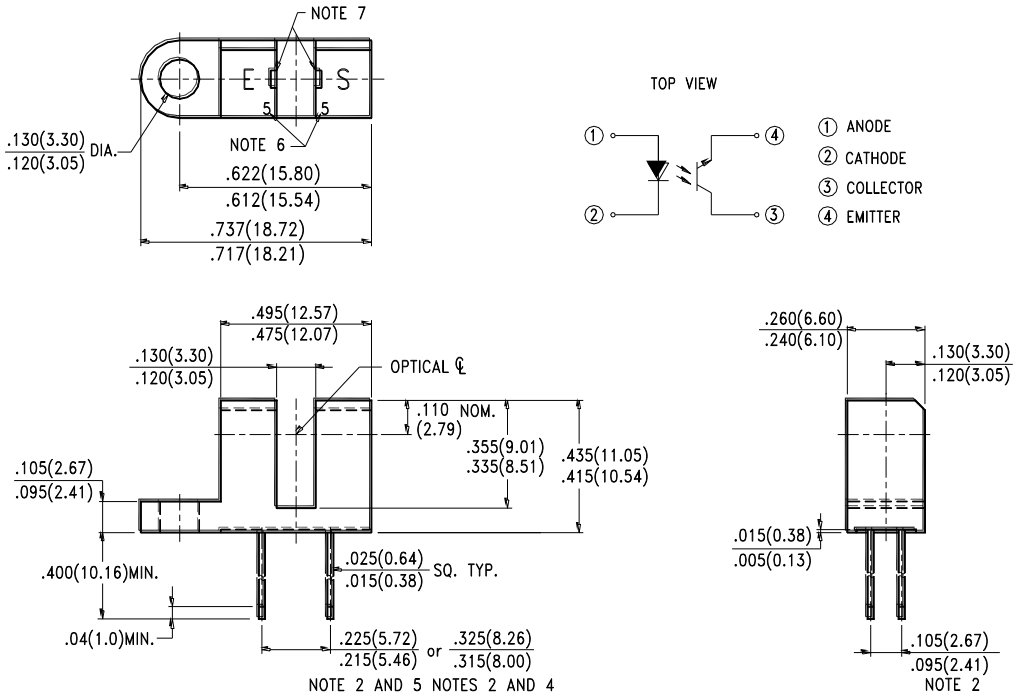
PACKAGE DIMENSIONS

Package Configuration P



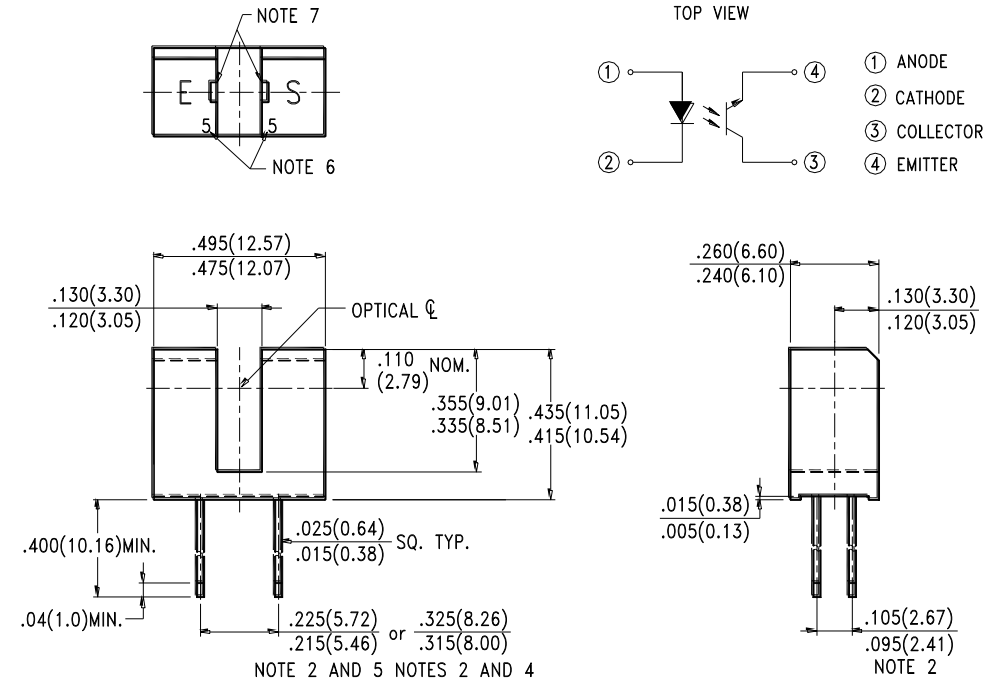
PACKAGE DIMENSIONS

Package Configuration L



PACKAGE DIMENSIONS

Package Configuration N



NOTES:

1. All dimensions are in inches (millimeters).
2. Dimension controlled at housing surface only.
3. Housing is soluble in chlorinated hydrocarbons and ketones.
4. LTH-860, LTH-861, LTH-862, LTH-870, LTH-871, LTH-872.
5. LTH-865, LTH-866, LTH-867, LTH-875, LTH-876, LTH-877.
6. Molded number to identify aperture size. See part number guide.
7. Dimensions of aperture opening dependent on housing material. See part number guide.
8. Housing shown are opaque polysulfone.

ABSOLUTE MAXIMUM RATINGS AT T_A=25℃

PARAMETER	SYMBOL	MAXIMUM RATING	UNIT
INPUT LED			
Power Dissipation	P_D	75	mW
Continuous Forward Current	I_F	50	mA
Peak Forward Current (Pulse Wide = 10μS , 300PPS)	Icp	1	A
Reverse Voltage	V_R	5	V
OUTPUT PHOTOTRANSISTOR			
Power Dissipation	P_C	100	mW
Collector-Emitter Voltage	V_{CEO}	30	V
Emitter-Collector Voltage	V_{ECO}	5	V
Collector Current	I_C	20	mA
Operating Temperature Range	T_{opr}	-25℃ to + 85℃	
Storage Temperature Range	T_{stg}	-40℃ to + 100℃	
Lead Soldering Temperature [1.6mm (.063") Form Case]	T_{sol}	260℃ for 5 Seconds	

ELECTRICAL OPTICAL CHARACTERISTICS AT T_A=25℃

PARAMETER		SYMBOL	MIN.	TYP.	MAX.	UNIT	TEST CONDITION
INPUT LED							
Forward Voltage		V_F		1.2	1.6	V	I_F = 20mA
Reverse Current		I_R			100	μA	V_R=5V
OUTPUT PHOTOTRANSISTOR							
Collector-Emitter Dark Current		I_{CEO}			100	nA	V_{CE}=10V
COUPLER							
Collector-Emitter Saturation Voltage	Parameter A	$V_{CE(SAT)}$				V	I_C=0.25mA,I_F=20mA
	Parameter B				0.4		I_C=0.5mA,I_F=20mA
	Parameter C						I_C=0.9mA,I_F=20mA
On State Collector Current	Parameter A	$I_{C(ON)}$	0.5			mA	V_{CE}=5V,I_F=20mA
	Parameter B		1.0				
	Parameter C		1.8				
Response Time	Rise Time	tr		3	15	μS	V_{CE}=5V, I_C=2mA R_L=100 Ω
	Fall Time	tf		4	20		

TYPICAL ELECTRICAL / OPTICAL CHARACTERISTICS CURVES

(25℃ Ambient Temperature Unless Otherwise Noted)

Fig.1 Power Dissipation vs. Ambient Temperature

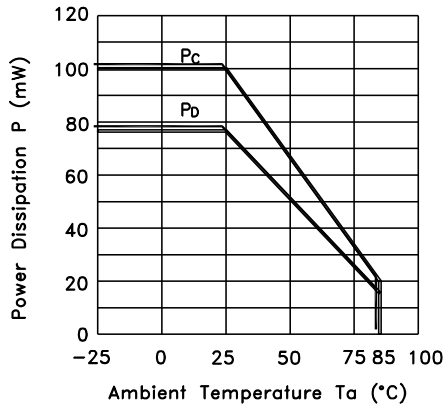


Fig.2 Forward Current vs. Forward Voltage

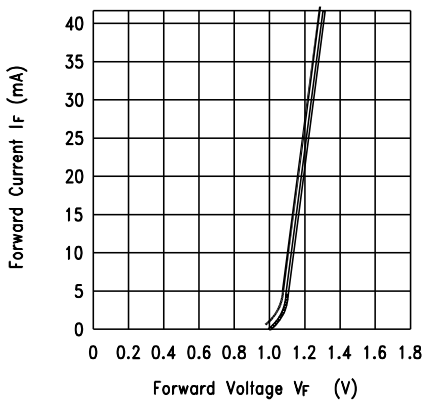


Fig.3 Cllector Current vs. Collector−emitter Voltage

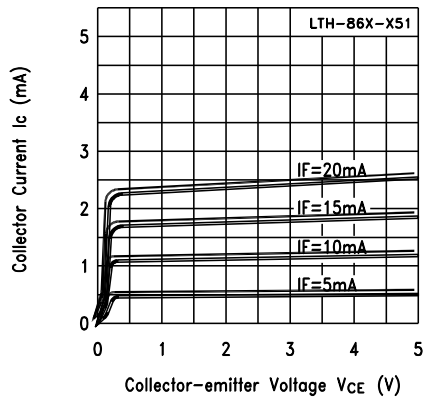
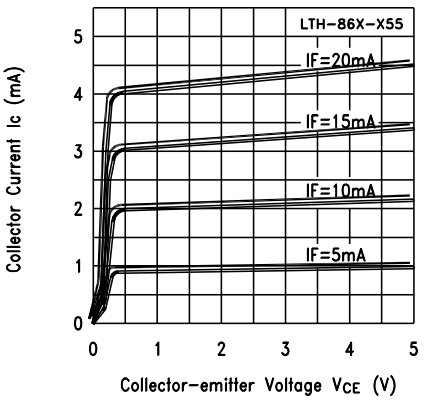


Fig.4 Cllector Current vs. Collector−emitter Voltage



TYPICAL ELECTRICAL / OPTICAL CHARACTERISTICS CURVES

(25℃ Ambient Temperature Unless Otherwise Noted)

Fig.5 Collector Current vs. Collector-emitter Voltage

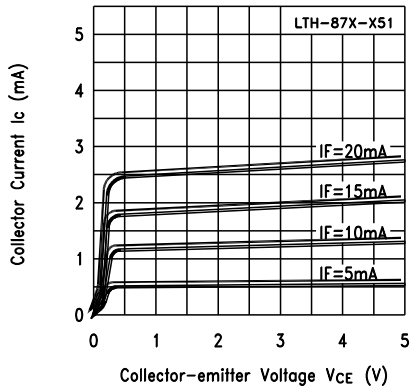


Fig.6 Collector Current vs. Collector-emitter Voltage

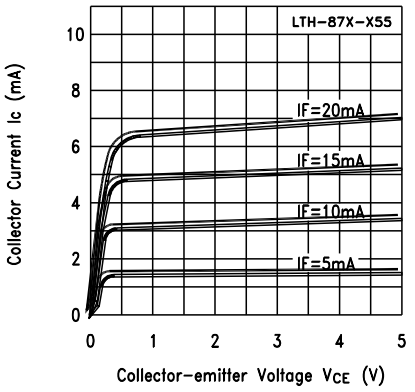


Fig.7 Collector Current vs. Ambient Temperature

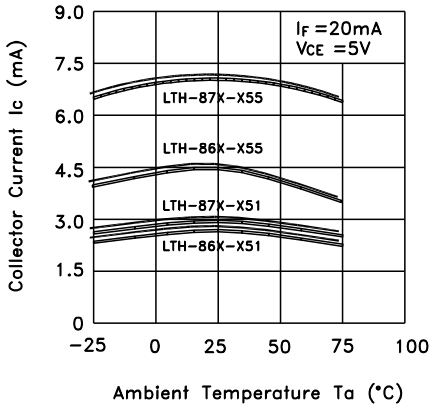
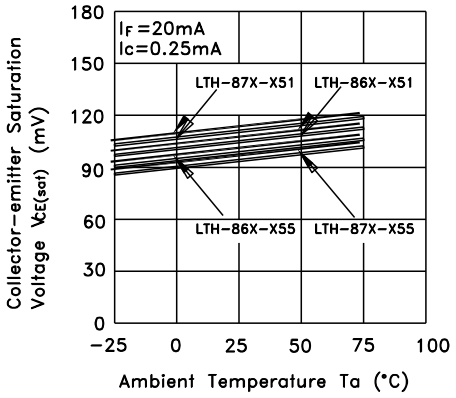


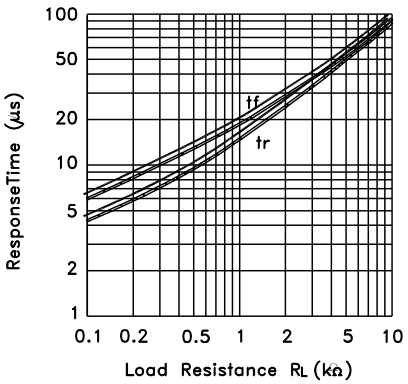
Fig.8 Collector-emitter Saturation Voltage vs. Ambient Temperature



TYPICAL ELECTRICAL / OPTICAL CHARACTERISTICS CURVES

(25℃ Ambient Temperature Unless Otherwise Noted)

Fig.9 Response Time vs. Load Resistance



Test Circuit for Response Time