Chipsmall Limited consists of a professional team with an average of over 10 year of expertise in the distribution of electronic components. Based in Hongkong, we have already established firm and mutual-benefit business relationships with customers from,Europe,America and south Asia,supplying obsolete and hard-to-find components to meet their specific needs.

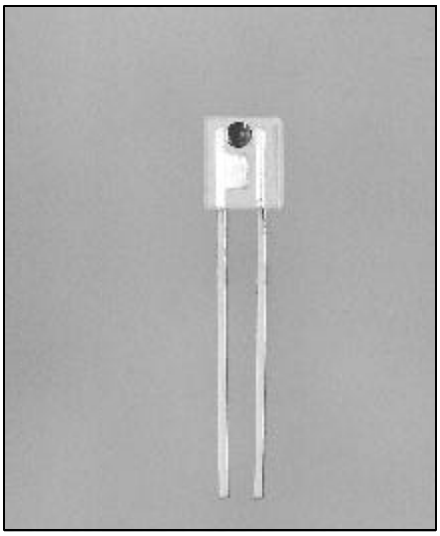
With the principle of “Quality Parts,Customers Priority,Honest Operation,and Considerate Service”,our business mainly focus on the distribution of electronic components. Line cards we deal with include Microchip,ALPS,ROHM,Xilinx,Pulse,ON,Everlight and Freescale. Main products comprise IC,Modules,Potentiometer,IC Socket,Relay,Connector.Our parts cover such applications as commercial,industrial, and automotives areas.

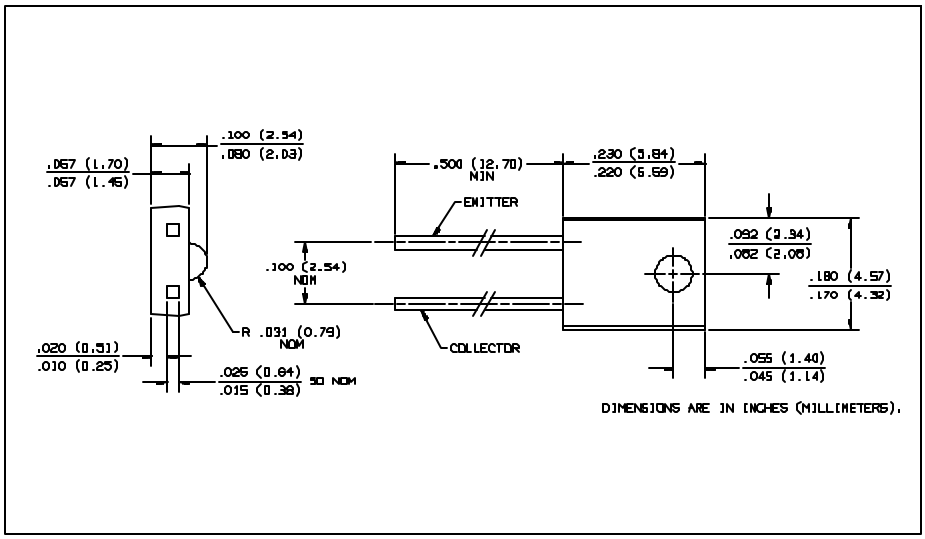
We are looking forward to setting up business relationship with you and hope to provide you with the best service and solution. Let us make a better world for our industry!

Contact us

Tel: +86-755-8981 8866 Fax: +86-755-8427 6832
Email & Skype: info@chipsmall.com Web: www.chipsmall.com
Address: A1208, Overseas Decoration Building, #122 Zhenhua RD., Futian, Shenzhen, China

NPN Phototransistor with Base-Emitter Resistor
Types OP750A, OP750B, OP750C, OP750D





Features

- Wide receiving angle
- Variety of sensitivity ranges
- Side-looking package for space limited applications
- Base-emitter resistor provides ambient light protection

Description

The OP750 series devices consist of an NPN silicon phototransistor molded in a clear epoxy package. The wide receiving angle provides relatively even reception over a large area. The side-looking package is designed for easy PC board mounting of slotted optical switches or optical interrupt detectors. This series is mechanically and spectrally matched to the OP140 and OP240 series of infrared emitting diodes.

The phototransistor has an internal base-emitter resistor which provides protection from low level ambient lighting conditions. This feature is also useful when the media being detected is semi-transparent to infrared light in interruptive applications.

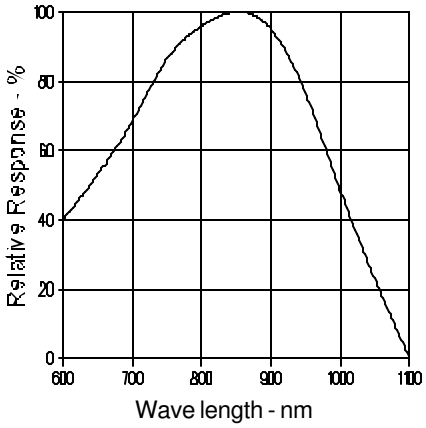
Absolute Maximum Ratings (T_A = 25° C unless otherwise noted)

Collector-Emitter Voltage	30 V
Emitter Reverse Current	10 mA
Collector DC Current	30 mA
Storage and Operating Temperature Range	-40° C to +100° C
Lead Soldering Temperature [1/16 inch (1.6 mm) from case for 5 sec. with soldering iron]	260° C(1)
Power Dissipation	200 mW(2)

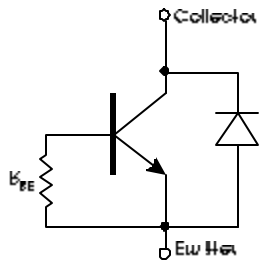
NOTES:
(1) RMA flux is recommended. Duration can be extended to 10 sec. max. when flow soldering. Max. 20 grams force may be applied to leads when soldering.
(2) Derate linearly 1.33 mW/° C above 25° C.
(3) Light source is an unfiltered GaAs LED with a peak emission wavelength of 935 nm and a radiometric intensity level which varies less than 10% over the entire lens surface of the phototransistor being tested.
(4) The knee point irradiance is defined as the irradiance required to increase $I_{C(ON)}$ to 50 µA.

Typical Performance Curves

Typical Spectral Response



Schematic



Types OP750A, OP750B, OP750C, OP750D

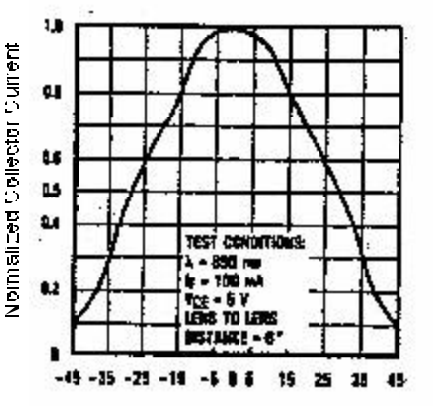
Electrical Characteristics (T_A = 25° C unless otherwise noted)

SYMBOL	PARAMETER	MIN	TYP	MAX	UNITS	TEST CONDITIONS
$I_{C(ON)}$	On-State Collector Current					V_{CE} = 5 V, E_e = 1 mW/cm^2 [3]
	OP750A	2.25		7.00	mA	
	OP750B	1.50		4.20		
	OP750C	0.85		2.80		
	OP750D	0.85		7.00		
E_{KP}	Knee Point Irradiance		.03		mW/cm^2	V_{CE} = 5 V [4]
I_{CEO}	Collector-Emitter Dark Current			100	nA	V_{CE} = 10 V, E_e = 0
I_{ECO}	Emitter-Reverse Current			100	µA	V_{EC} = 0.4 V
$V_{(BR)CEO}$	Collector-Emitter Breakdown Voltage	30			V	I_C = 100 µA
$V_{CE(SAT)}$	Collector-Emitter Saturation Voltage			0.4	V	I_C = 100 µA, E_e = 1 mW/cm^2 [3]

PHOTOSENSORS

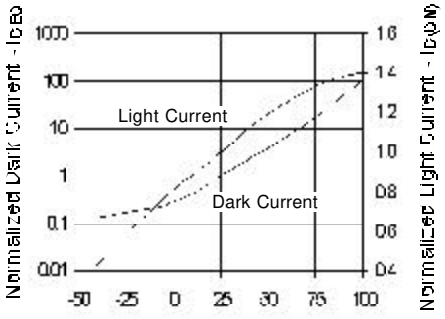
Typical Performance Curves

Normalized Collector Current vs. Angular Displacement



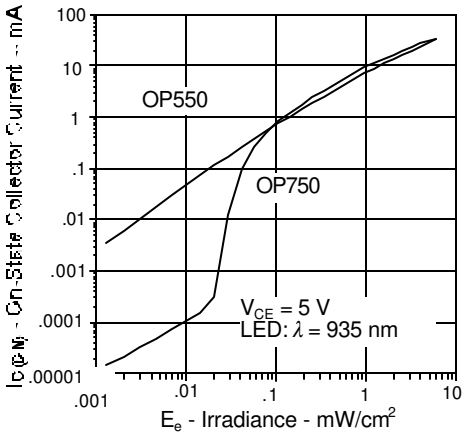
θ - Angular Displacement - Deg.

Normalized Light and Dark Current vs. Ambient Temperature



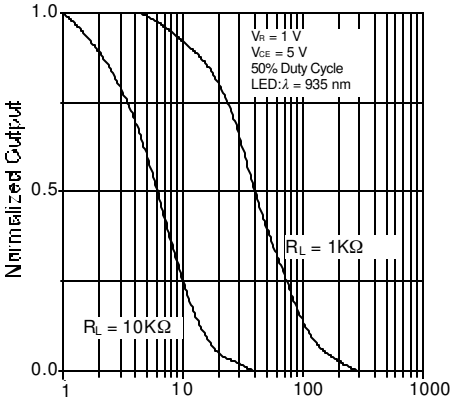
T_A - Ambient Temperature - ° C

On-State Collector Current vs. Irradiance



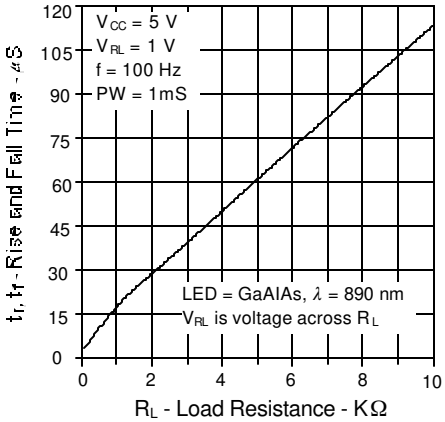
E_e - Irradiance - mW/cm^2

Normalized Output vs. Frequency



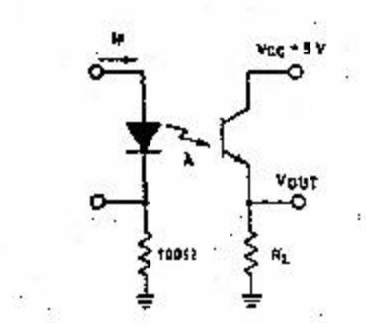
Frequency - KHz

Typical Rise and Fall Time vs. Load Resistance



R_L - Load Resistance - KΩ

Switching Time Test Circuit



Test Conditions:
Light source is pulsed LED with t_r and $t_f \leq$ 500 ns.
I_F is adjusted for V_{OUT} = 1 Volt.