

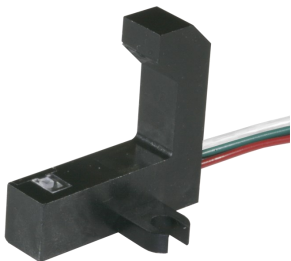
Slotted Optical Switch

OPB420AZ, OPB420BZ



Features:

- Non-contact switching
- Right Angle Sensor: LED in tower, photosensor in base
- Choice of output configuration
- Optical line can be broken in three axis
- 24" minimum, 26 AWG UL approved wire leads



Description:

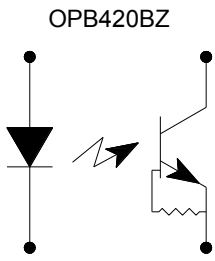
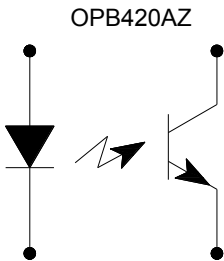
The OPB420 series optical switch consists of an infrared emitting diode (LED) and a phototransistor. The LED is mounted on the tower with the phototransistor mounted on the base of a right angle shape package. The L-Shape or right angle package configuration allows for an opaque object to block the light beam from a multitude of directions including the X-axis Y-axis and Z-axis. The optical center line between the emitter and photosensor is at 45° from the mounting base of the device. The OPB420AZ utilizes a phototransistor with a current output proportional to the input drive current of the LED. The OPB420BZ utilizes a phototransistor with a base-emitter resistance (R_{BE}) which provides protection from low level light conditions. The OPB420BZ is ideal for applications that require an enhanced contrast ratio and immunity to background irradiance, such as detection of semi-transparent media.

Custom electrical, wire and cabling and connectors are available. Contact your local representative or OPTEK for more information.

Applications:

- Non-contact interruptive object sensing
- Tray-out sensor
- Low paper tray sensor
- Corner sensor
- Printers
- Copying machines
- Paper sorting equipment
- Amusement gaming equipment
- Door sensor
- Optical Switch

Part #	LED Wavelength	PhotoSensor
OPB420AZ	880 nm	Phototransistor
OPB420BZ		R _{BE} Phototransistor



RoHS

General Note
TT Electronics reserves the right to make changes in product specification without notice or liability. All information is subject to TT Electronics' own data and is considered accurate at time of going to print.

TT Electronics | Optek Technology, Inc.
1645 Wallace Drive, Ste. 130, Carrollton, TX USA 75006 | Ph: +1 972 323 2200
www.ttelectronics.com | sensors@ttelectronics.com

Slotted Optical Switch

OPB420AZ, OPB420BZ



Electrical Specifications

Phototransistor Version

Absolute Maximum Ratings ($T_A=25^{\circ}\text{C}$ unless otherwise noted)

Storage & Operating Temperature Range	-40°C to $+85^{\circ}\text{C}$
Lead Soldering Temperature [1/16 inch (1.6mm) from the case for 5 sec. with soldering iron] ⁽¹⁾	260°C

Input Diode

Continuous Forward Current	50 mA
Peak Forward Current (1 μs pulse width, 300 pps)	1 A
Reverse Voltage	2 V
Power Dissipation ⁽²⁾	100 mW

Output Phototransistor

Collector-Emitter Breakdown Voltage OPB420AZ OPB420BZ	30 V 24 V
Power Dissipation ⁽²⁾	100 mW

Electrical Characteristics

 ($T_A = 25^{\circ}\text{C}$ unless otherwise noted)

SYMBOL	PARAMETER	MIN	TYP	MAX	UNITS	TEST CONDITIONS
--------	-----------	-----	-----	-----	-------	-----------------

Input Diode

 (See OP240 or OP265 for additional information)

V_F	Forward Voltage	1.2	-	1.7	V	$I_F = 20\text{ mA}$
I_R	Reverse Current	-	-	100	μA	$V_R = 2\text{ V}$

Output Phototransistor

 (See OP505 or OP705 for additional information)

$V_{(BR)CEO}$	Collector-Emitter Breakdown Voltage OPB420AZ OPB420BZ	30 24	- -	- -	V	$I_C = 1\text{ mA}$ $I_C = 100\text{ }\mu\text{A}$
$V_{(BR)ECO}$	Emitter-Collector Breakdown Voltage OPB420AZ OPB420BZ	5.0 0.4	- -	- -	V	$I_E = 100\text{ }\mu\text{A}$
I_{CEO}	Collector-Emitter Dark Current	-	-	100	nA	$V_{CE} = 10\text{ V}$, $I_F = 0$, $E_E = 0$

Combined

$V_{CE(SAT)}$	Collector-Emitter Saturation Voltage	-	-	0.4	V	$I_C = 250\text{ }\mu\text{A}$, $I_F = 20\text{ mA}$
$I_{C(ON)}$	On-State Collector Current	1.0	-	10.0	mA	$V_{CE} = 5.0\text{ V}$, $I_F = 20\text{ mA}$
$I_{C(OFF)}$	Off-State Collector Current—OPB420BZ	-	-	450	μA	$V_{CE} = 5\text{ V}$, $I_F = 1\text{ mA}$ ⁽⁵⁾

Notes:

- (1) RMA flux is recommended. Duration can be extended to 10 seconds maximum when flow soldering.
- (2) Derate linearly 1.67 mW/ $^{\circ}\text{C}$ above 25°C .
- (3) Methanol or isopropanol are recommended as cleaning agents. Plastic housing is soluble in chlorinated hydrocarbons and ketones.
- (4) All parameters were tested using pulse technique.
- (5) Simulated optical path blocked with infrared semi-transparent object

General Note

TT Electronics reserves the right to make changes in product specification without notice or liability. All information is subject to TT Electronics' own data and is considered accurate at time of going to print.

TT Electronics | Optek Technology, Inc.
1645 Wallace Drive, Ste. 130, Carrollton, TX USA 75006 | Ph: +1 972 323 2200
www.ttelectronics.com | sensors@ttelectronics.com

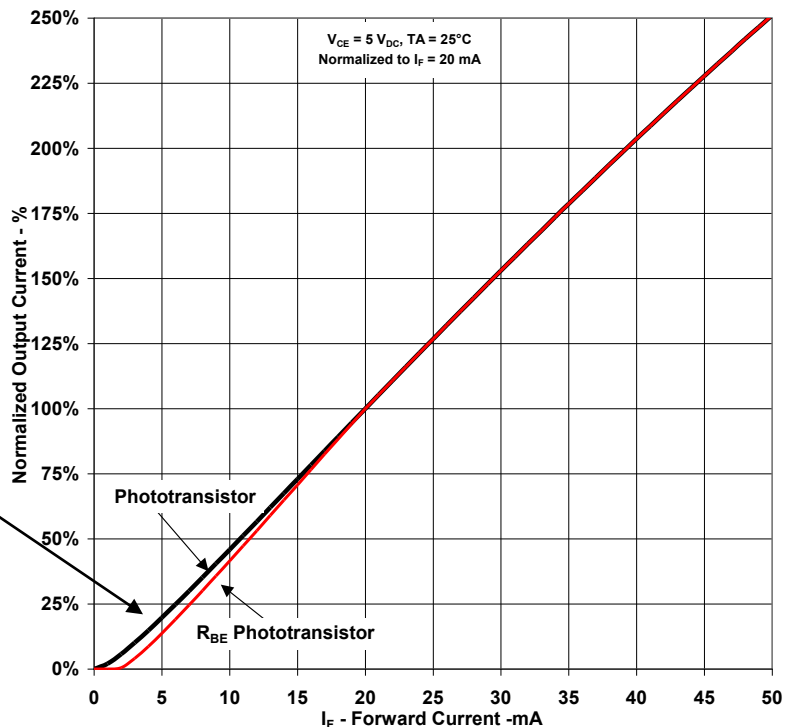
Slotted Optical Switch

OPB420AZ, OPB420BZ

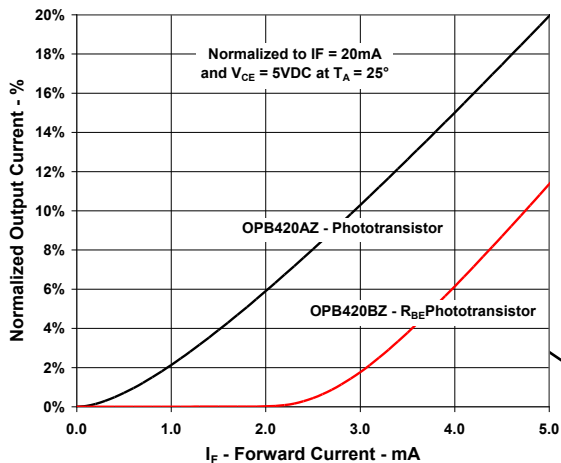


Performance

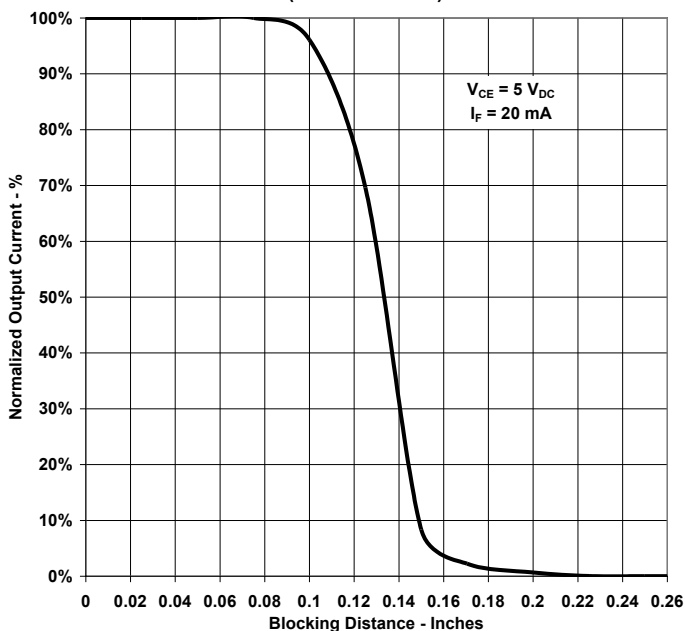
Typical Output Current Vs Forward Current



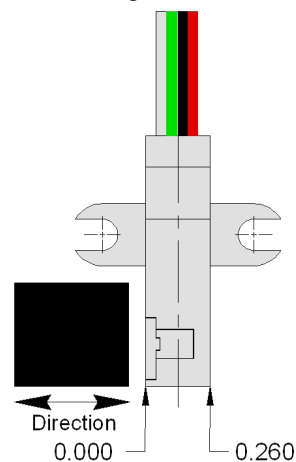
Typical Output Current Vs Forward Current



Typical Output Current Vs Distance
(Z Axis Blocked)



Z-Flag Direction



General Note

TT Electronics reserves the right to make changes in product specification without notice or liability. All information is subject to TT Electronics' own data and is considered accurate at time of going to print.

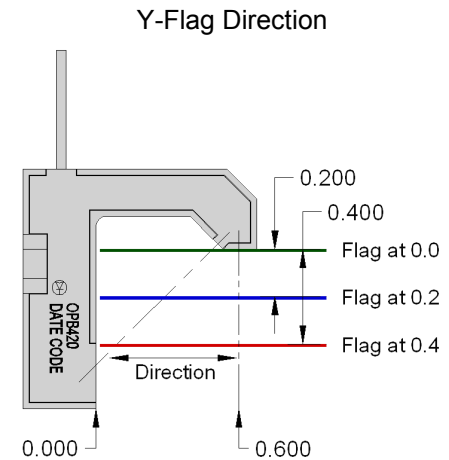
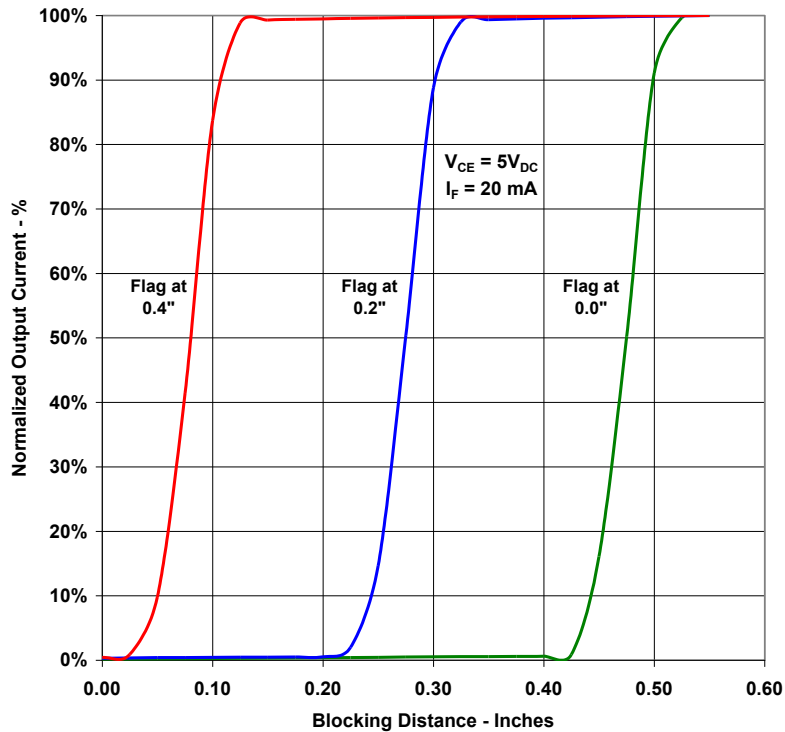
Slotted Optical Switch

OPB420AZ, OPB420BZ

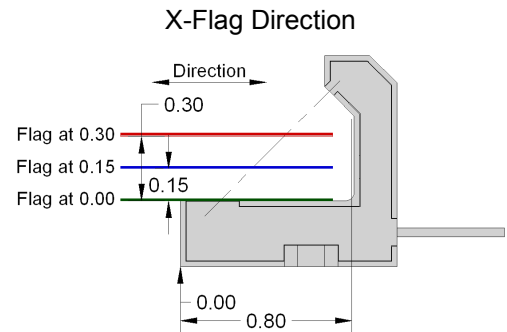
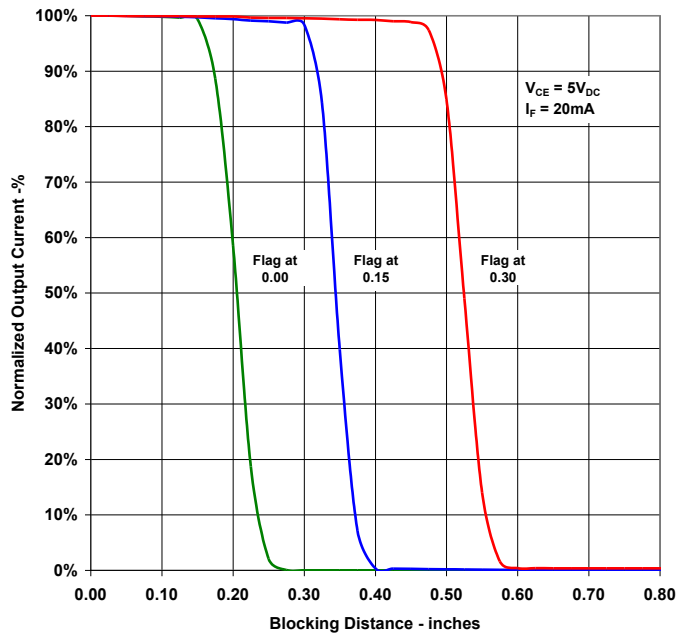


Performance

Typical Output Current Vs Distance (Y-Axis Blocked)



Typical Output Current Vs Distance X-Axis Blocked



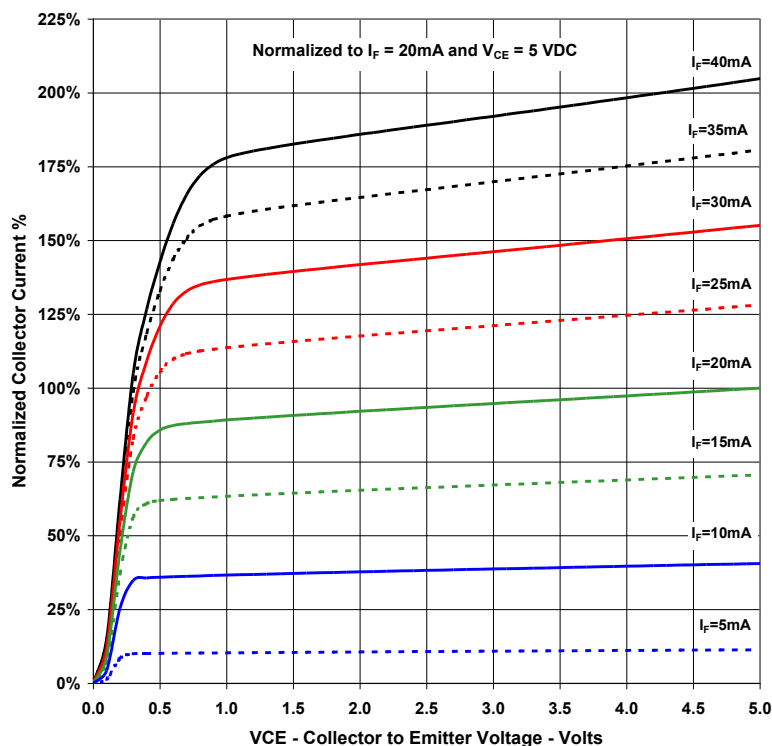
General Note

TT Electronics reserves the right to make changes in product specification without notice or liability. All information is subject to TT Electronics' own data and is considered accurate at time of going to print.

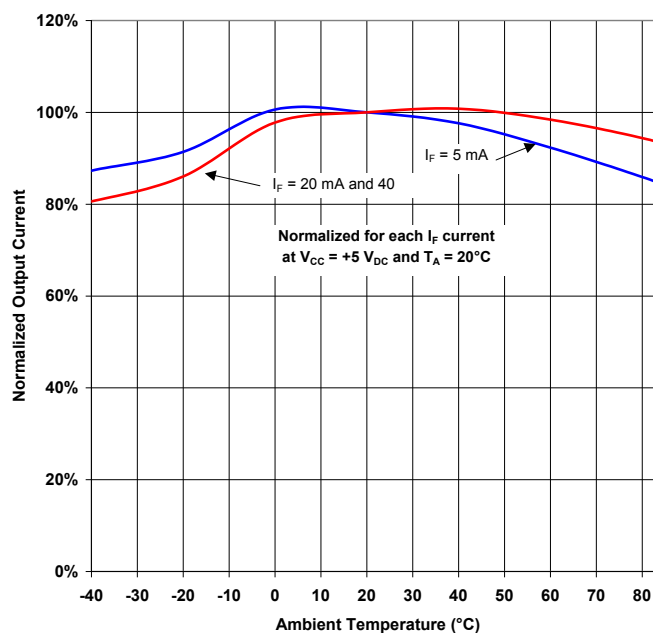
TT Electronics | Optek Technology, Inc.
1645 Wallace Drive, Ste. 130, Carrollton, TX USA 75006 | Ph: +1 972 323 2200
www.ttelectronics.com | sensors@ttelectronics.com

Performance

Typical Collector Current vs Collector to Emitter Voltage



Typical Output Current vs Ambient Temperature



General Note

TT Electronics reserves the right to make changes in product specification without notice or liability. All information is subject to TT Electronics' own data and is considered accurate at time of going to print.

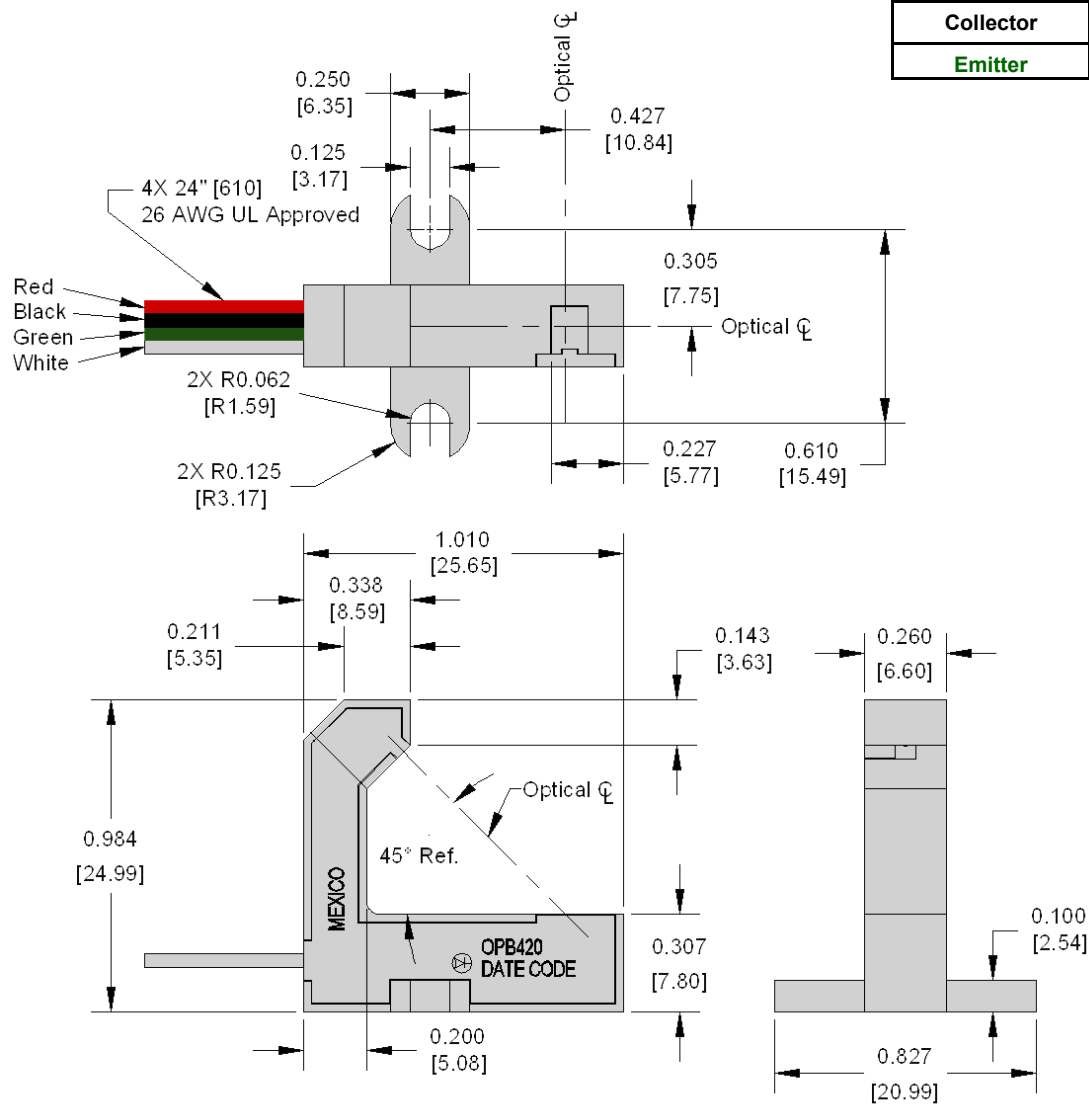
Slotted Optical Switch

OPB420AZ, OPB420BZ



Packaging Mechanical Package Information

Description	Wire Color
Anode	Red
Cathode	Black
Collector	White
Emitter	Green



Dimensions are in Inches [Millimeters]
Tolerances ± 0.010 " [0.25mm]

General Note

TT Electronics reserves the right to make changes in product specification without notice or liability. All information is subject to TT Electronics' own data and is considered accurate at time of going to print.

TT Electronics | Optek Technology, Inc.
1645 Wallace Drive, Ste. 130, Carrollton, TX USA 75006 | Ph: +1 972 323 2200
www.ttelectronics.com | sensors@ttelectronics.com

Компания «Life Electronics» занимается поставками электронных компонентов импортного и отечественного производства от производителей и со складов крупных дистрибьюторов Европы, Америки и Азии.

С конца 2013 года компания активно расширяет линейку поставок компонентов по направлению коаксиальный кабель, кварцевые генераторы и конденсаторы (керамические, пленочные, электролитические), за счёт заключения дистрибьюторских договоров

Мы предлагаем:

- Конкурентоспособные цены и скидки постоянным клиентам.
- Специальные условия для постоянных клиентов.
- Подбор аналогов.
- Поставку компонентов в любых объемах, удовлетворяющих вашим потребностям.
- Приемлемые сроки поставки, возможна ускоренная поставка.
- Доставку товара в любую точку России и стран СНГ.
- Комплексную поставку.
- Работу по проектам и поставку образцов.
- Формирование склада под заказчика.
- Сертификаты соответствия на поставляемую продукцию (по желанию клиента).
- Тестирование поставляемой продукции.
- Поставку компонентов, требующих военную и космическую приемку.
- Входной контроль качества.
- Наличие сертификата ISO.

В составе нашей компании организован Конструкторский отдел, призванный помогать разработчикам, и инженерам.

Конструкторский отдел помогает осуществить:

- Регистрацию проекта у производителя компонентов.
- Техническую поддержку проекта.
- Защиту от снятия компонента с производства.
- Оценку стоимости проекта по компонентам.
- Изготовление тестовой платы монтаж и пусконаладочные работы.



Тел: +7 (812) 336 43 04 (многоканальный)

Email: org@lifeelectronics.ru

www.lifeelectronics.ru