

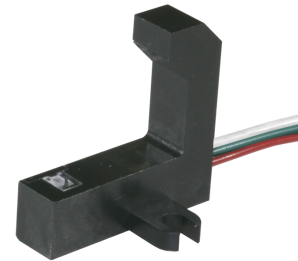
Slotted Optical Switch

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:

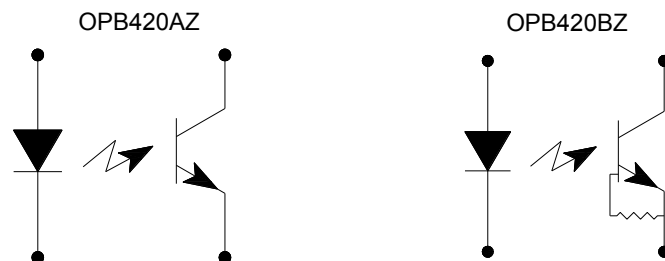
The OPB420 series optical switch consists of an infrared emitting diode (LED) and a phototransistor. The LED is mounted on the tower with the phototransistor mounted on the base of a right angle shape package. The L-Shape or right angle package configuration allows for an opaque object to block the light 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° 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	$I_C = 1\text{ mA}$ $I_C = 100\ \mu\text{A}$
$V_{(BR)ECO}$	Emitter-Collector Breakdown Voltage OPB420AZ OPB420BZ	5.0 0.4	- -	- -	V	$I_E = 100\ \mu\text{A}$
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	$I_C = 250\ \mu\text{A}, I_F = 20\text{ mA}$
$I_{C(ON)}$	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/°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

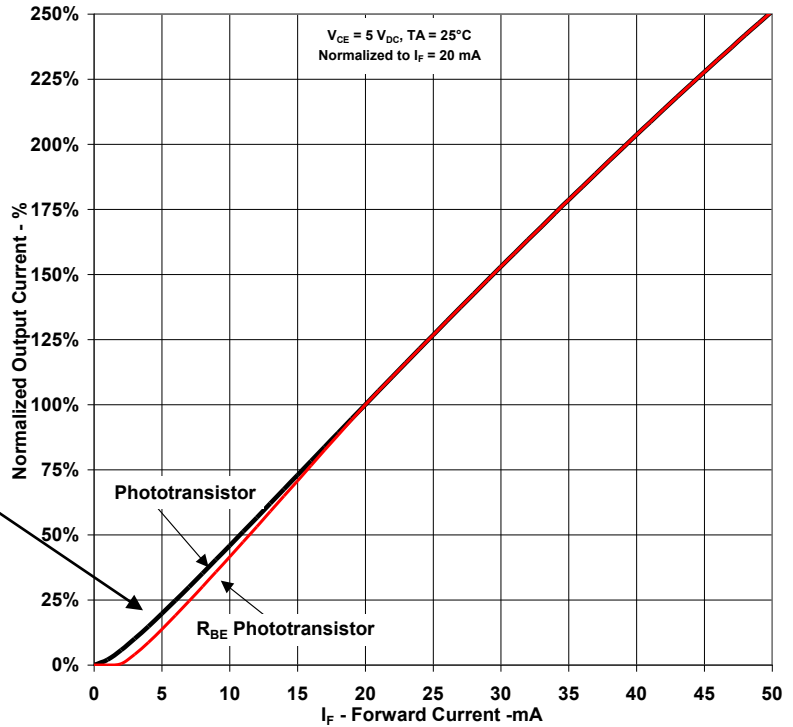
Slotted Optical Switch

OPB420AZ, OPB420BZ

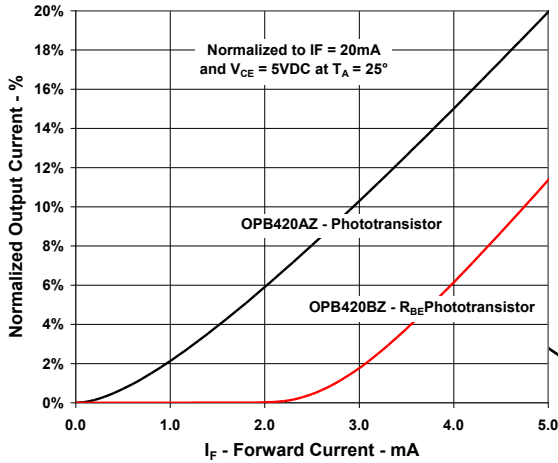


Performance

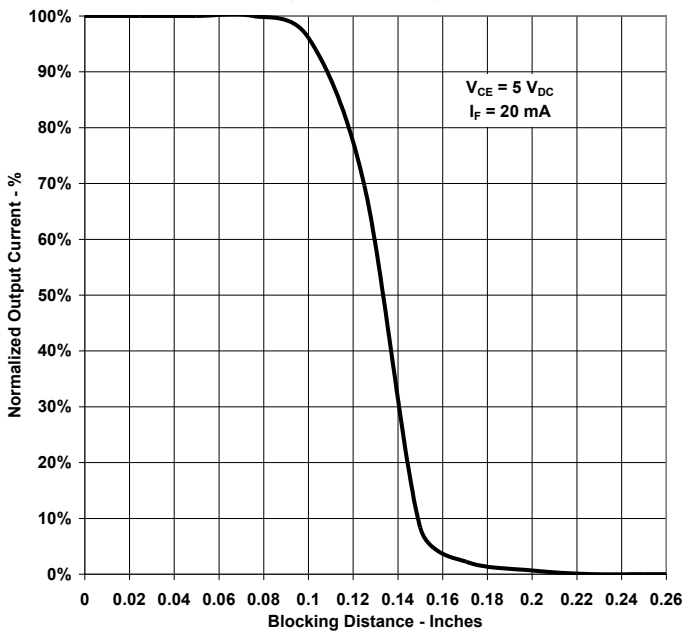
Typical Output Current Vs Forward Current



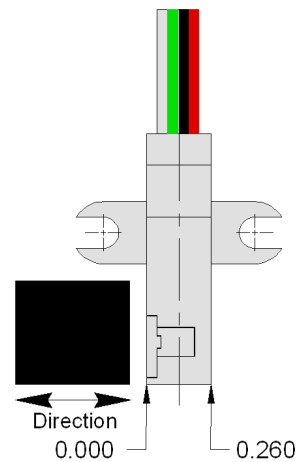
Typical Output Current Vs Forward Current



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.

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

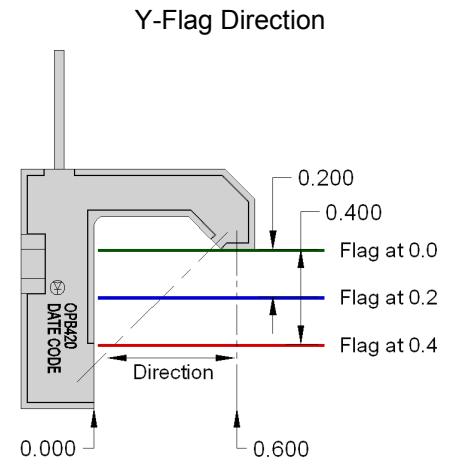
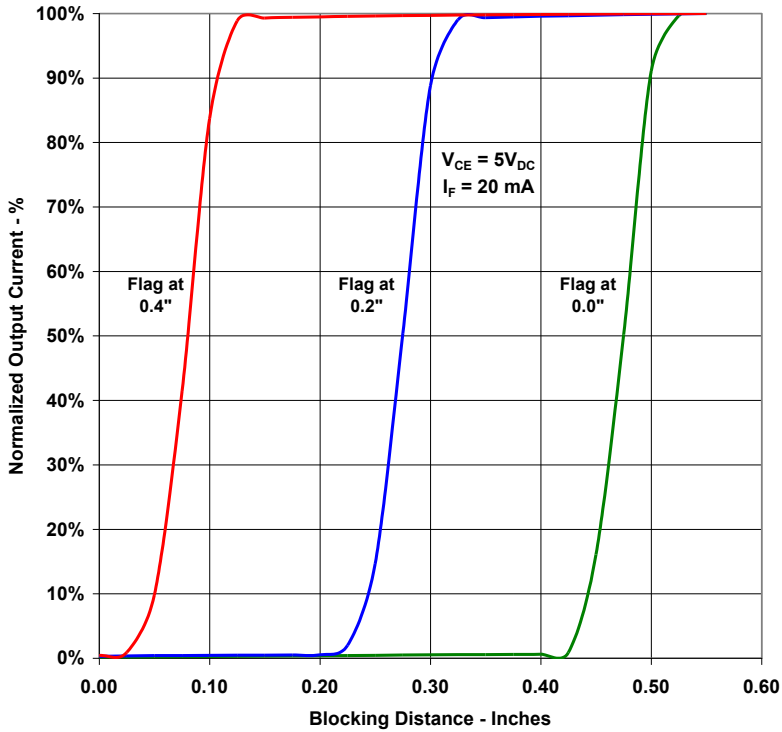
Slotted Optical Switch

OPB420AZ, OPB420BZ

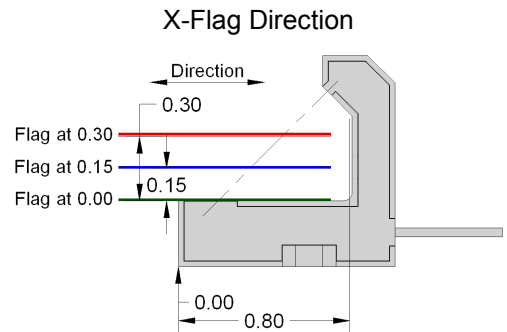
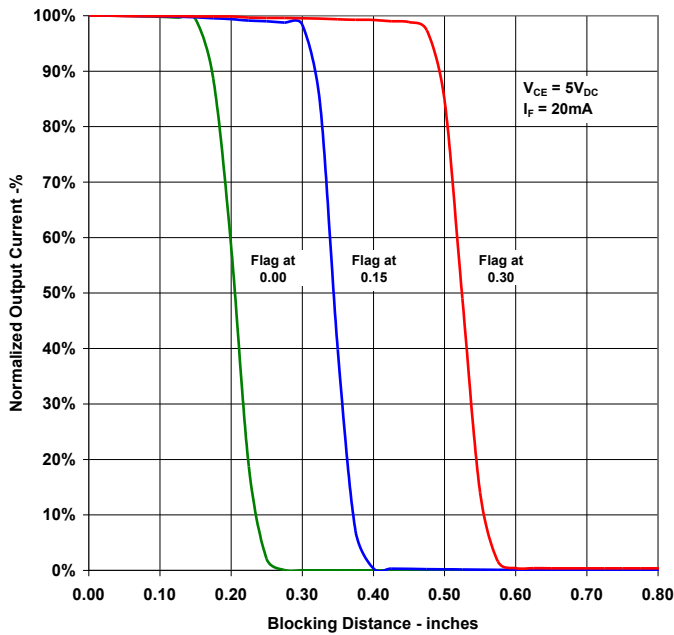


Performance

Typical Output Current Vs Distance (Y-Axis Blocked)



Typical Output Current Vs Distance X-Axis Blocked

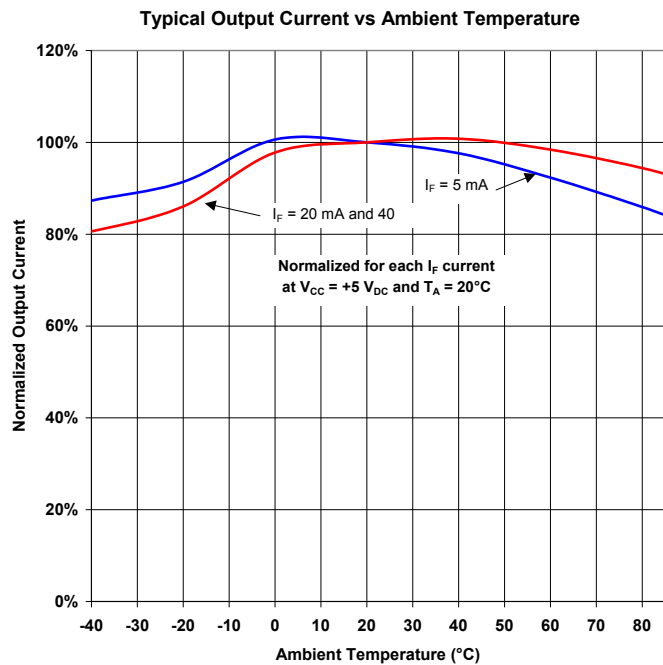
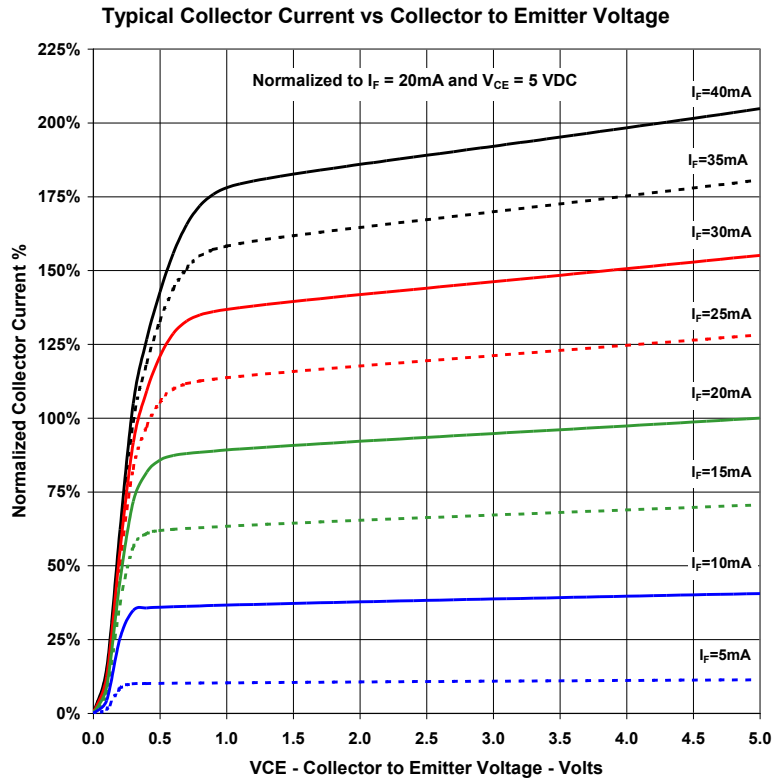


General Note

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



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

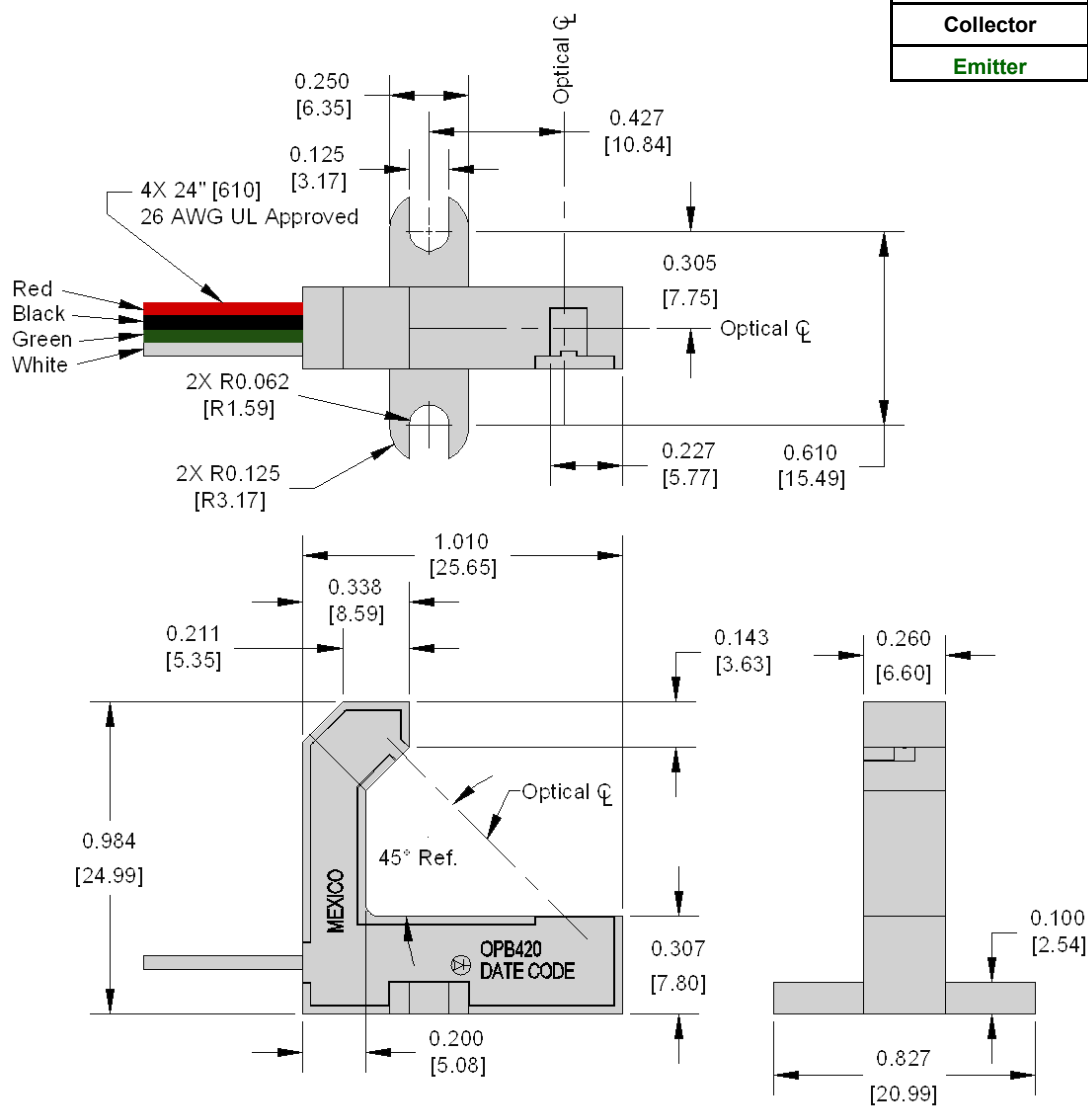
Slotted Optical Switch

OPB420AZ, OPB420BZ



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 «Океан Электроники» предлагает заключение долгосрочных отношений при поставках импортных электронных компонентов на взаимовыгодных условиях!

Наши преимущества:

- Поставка оригинальных импортных электронных компонентов напрямую с производств Америки, Европы и Азии, а так же с крупнейших складов мира;
- Широкая линейка поставок активных и пассивных импортных электронных компонентов (более 30 млн. наименований);
- Поставка сложных, дефицитных, либо снятых с производства позиций;
- Оперативные сроки поставки под заказ (от 5 рабочих дней);
- Экспресс доставка в любую точку России;
- Помощь Конструкторского Отдела и консультации квалифицированных инженеров;
- Техническая поддержка проекта, помощь в подборе аналогов, поставка прототипов;
- Поставка электронных компонентов под контролем ВП;
- Система менеджмента качества сертифицирована по Международному стандарту ISO 9001;
- При необходимости вся продукция военного и аэрокосмического назначения проходит испытания и сертификацию в лаборатории (по согласованию с заказчиком);
- Поставка специализированных компонентов военного и аэрокосмического уровня качества (Xilinx, Altera, Analog Devices, Intersil, Interpoint, Microsemi, Actel, Aeroflex, Peregrine, VPT, Syfer, Eurofarad, Texas Instruments, MS Kennedy, Miteq, Cobham, E2V, MA-COM, Hittite, Mini-Circuits, General Dynamics и др.);

Компания «Океан Электроники» является официальным дистрибьютором и эксклюзивным представителем в России одного из крупнейших производителей разъемов военного и аэрокосмического назначения «**JONHON**», а так же официальным дистрибьютором и эксклюзивным представителем в России производителя высокотехнологичных и надежных решений для передачи СВЧ сигналов «**FORSTAR**».



JONHON

«**JONHON**» (основан в 1970 г.)

Разъемы специального, военного и аэрокосмического назначения:

(Применяются в военной, авиационной, аэрокосмической, морской, железнодорожной, горно- и нефтедобывающей отраслях промышленности)

«**FORSTAR**» (основан в 1998 г.)

ВЧ соединители, коаксиальные кабели,
кабельные сборки и микроволновые компоненты:

(Применяются в телекоммуникациях гражданского и специального назначения, в средствах связи, РЛС, а так же военной, авиационной и аэрокосмической отраслях промышленности).



Телефон: 8 (812) 309-75-97 (многоканальный)

Факс: 8 (812) 320-03-32

Электронная почта: ocean@oceanchips.ru

Web: <http://oceanchips.ru/>

Адрес: 198099, г. Санкт-Петербург, ул. Калинина, д. 2, корп. 4, лит. А