
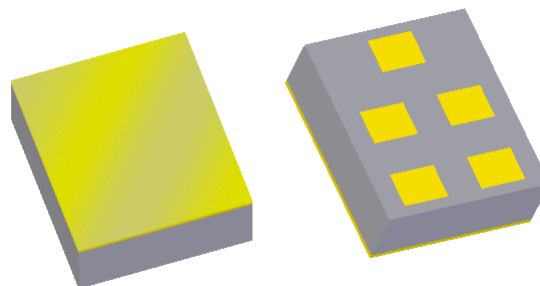


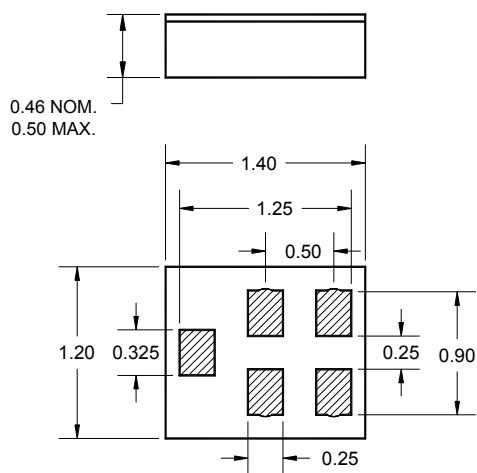
**Features**

- For Satellite Radio Applications
- Usable Bandwidth 45 MHz
- Low Loss
- Good Selectivity
- Ceramic Chip Scale Package (CSP)
- Single-ended Input, 50Ω
- Balanced Output, 100Ω or 200Ω
- Hermetic
- RoHS compliant (2002/95/EC), Pb-free 



**Package**

Surface Mount 1.40 x 1.20 x 0.46 mm

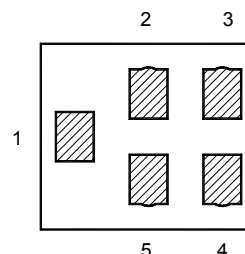


Dimensions shown are nominal in millimeters  
All tolerances are  $\pm 0.10$ mm

Body:  $Al_2O_3$  ceramic  
Lid: Kovar or Alloy 42, Au over Ni plated  
Terminations: Au plating 0.5 - 1.0 $\mu$ m,  
over a 2 - 6 $\mu$ m Ni plating

**Pin Configuration**

Bottom View



Pin No.	Description
1	Input
3,4	Output
2,5	Case ground

**Target Electrical Specifications <sup>(1)</sup>**

Operating Temperature Range: <sup>(2)</sup> -40 to +85°C

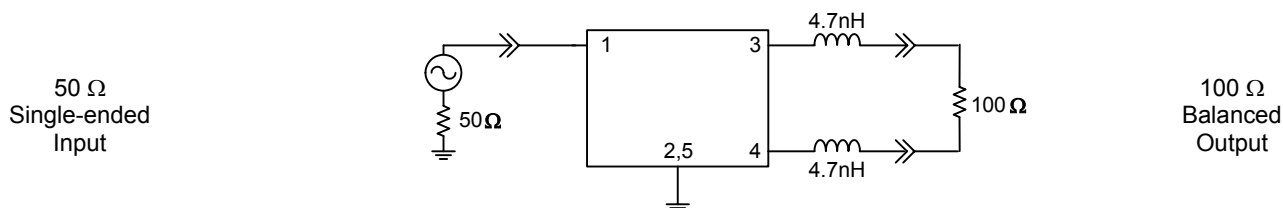
Parameter <sup>(3)</sup>	Minimum	Typical	Maximum	Unit
<b>Center Frequency</b>	-	2332.5	-	MHz
<b>Maximum Insertion Loss</b> 2310 - 2355 MHz	-	1.70	2.0	dB
<b>Absolute Attenuation</b> 0880 - 0960 MHz	35	45	-	dB
1710 - 1900 MHz	30	34	-	
2106 MHz	30	38	-	
2224 MHz	13	21	-	
2453 MHz	12	15	-	
2570 MHz	15	31	-	
<b>Amplitude Variation</b> 2310 - 2355 MHz	-	0.35	1.0	dB p-p
<b>Output Amplitude Balance (<math> S_{31}/S_{21} </math>)</b> 2310 - 2355 MHz	-1.5	-	1.5	dB
<b>Output Phase Balance [<math>\phi(S_{31})-\phi(S_{21})</math>]</b> 2310 - 2355 MHz	-7.5	-	7.5	degree
<b>Source Impedance (single-ended) <sup>(4)</sup></b>	-	50	-	$\Omega$
<b>Load Impedance (balanced) <sup>(4)</sup></b>	-	100	-	$\Omega$

**Notes:**

1. All target specifications are based on TriQuint test circuit shown below
2. In production, devices will be tested at room temperature to a guardbanded specification to ensure electrical compliance over temperature
3. Electrical margin has been built into the design to account for the variations due to temperature drift and manufacturing tolerances
4. This is the optimum impedance in order to achieve the performance shown

**Test Circuit:**

Actual matching values may vary due to PCB layout and parasitics

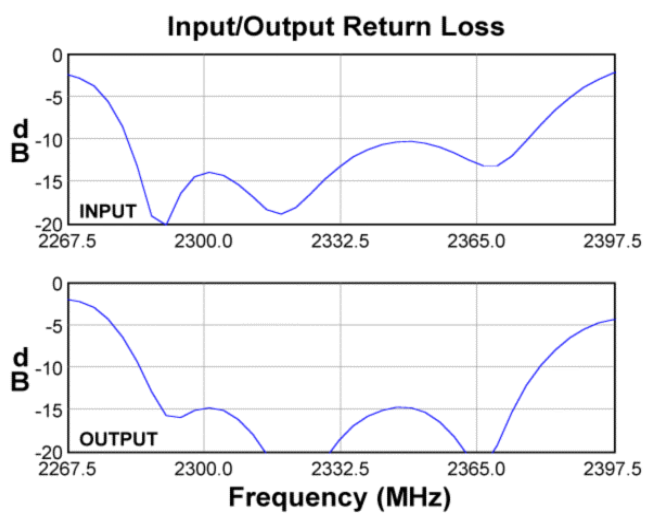
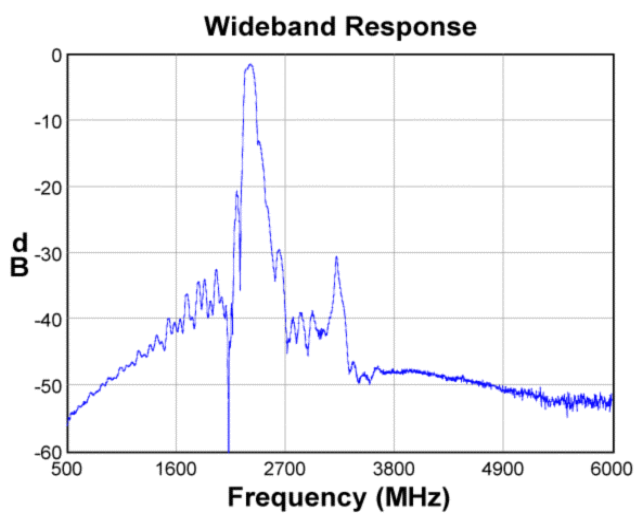
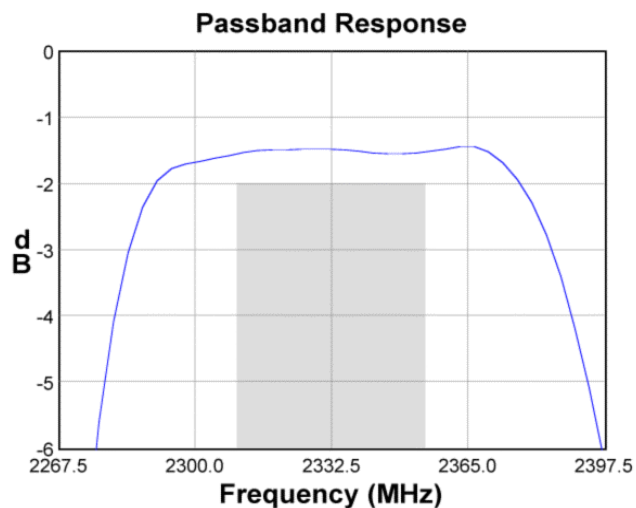
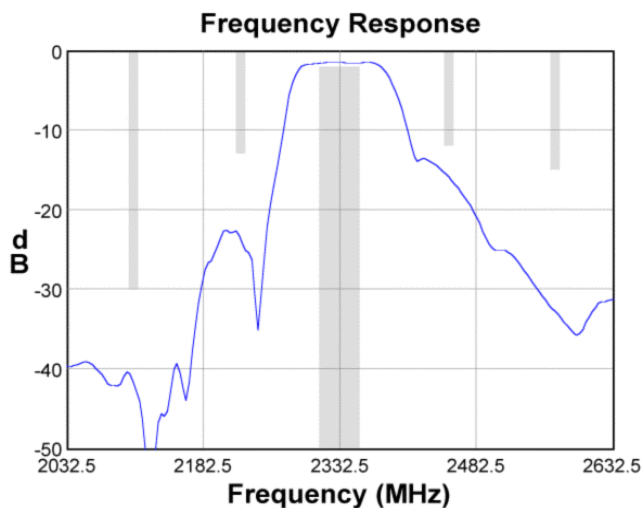


**PCB:** PCB-5BT V-1

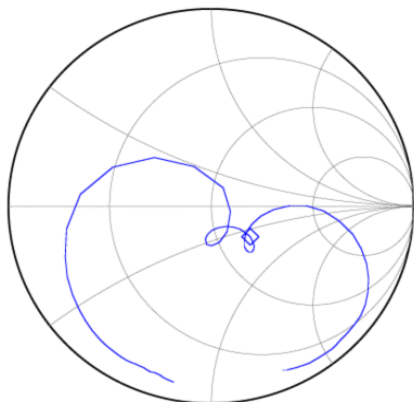
**Inductor Kit:** LQW15AN4N7D10 0402 series inductors

**Port extension:** 58psec (input), 43psec (output+), 43psec (output-)

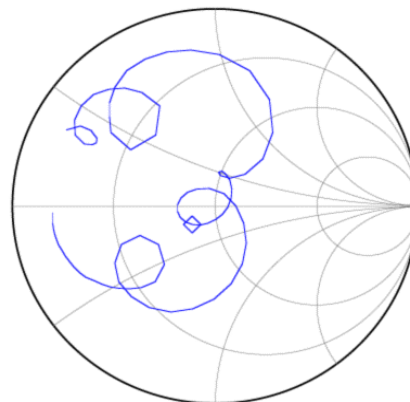
**Typical Performance (at +25°C)**



**Input Smith Chart**



**Output Smith Chart**



**Target Electrical Specifications <sup>(1)</sup>**

Operating Temperature Range: <sup>(2)</sup> -40 to +85°C

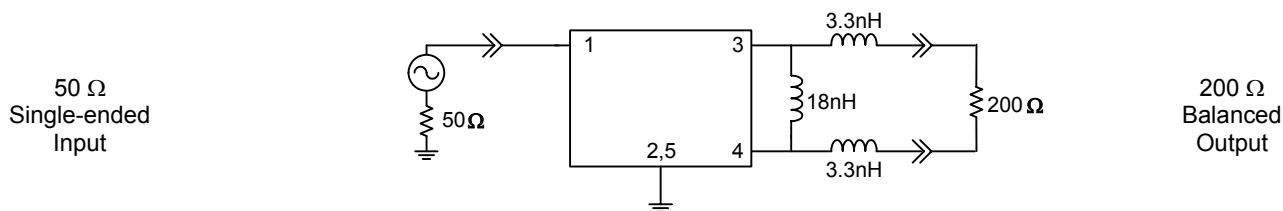
Parameter <sup>(3)</sup>	Minimum	Typical	Maximum	Unit
<b>Center Frequency</b>	-	2332.5	-	MHz
<b>Maximum Insertion Loss</b> 2310 - 2355 MHz	-	1.70	2.0	dB
<b>Absolute Attenuation</b> 0880 - 0960 MHz	35	45	-	dB
1710 - 1900 MHz	30	34	-	
2106 MHz	30	38	-	
2224 MHz	13	21	-	
2453 MHz	12	15	-	
2570 MHz	15	31	-	
<b>Amplitude Variation</b> 2310 - 2355 MHz	-	0.35	1.0	dB p-p
<b>Output Amplitude Balance (<math> S_{31}/S_{21} </math>)</b> 2310 - 2355 MHz	-1.5	-	1.5	dB
<b>Output Phase Balance [<math>\phi(S_{31})-\phi(S_{21})</math>]</b> 2310 - 2355 MHz	-7.5	-	7.5	degree
<b>Source Impedance (single-ended) <sup>(4)</sup></b>	-	50	-	$\Omega$
<b>Load Impedance (balanced) <sup>(4)</sup></b>	-	200	-	$\Omega$

**Notes:**

1. All target specifications are based on TriQuint test circuit shown below
2. In production, devices will be tested at room temperature to a guardbanded specification to ensure electrical compliance over temperature
3. Electrical margin has been built into the design to account for the variations due to temperature drift and manufacturing tolerances
4. This is the optimum impedance in order to achieve the performance shown

**Test Circuit:**

Actual matching values may vary due to PCB layout and parasitics

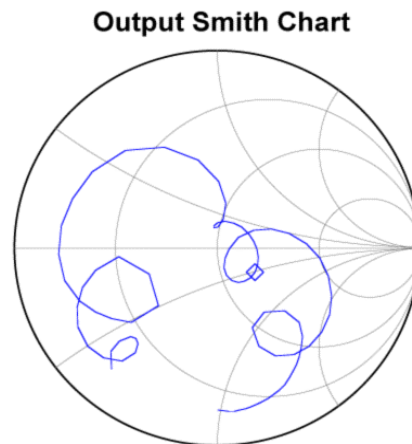
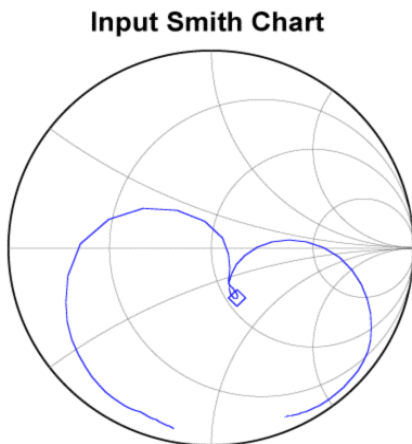
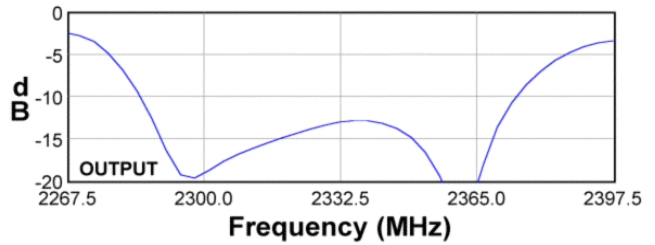
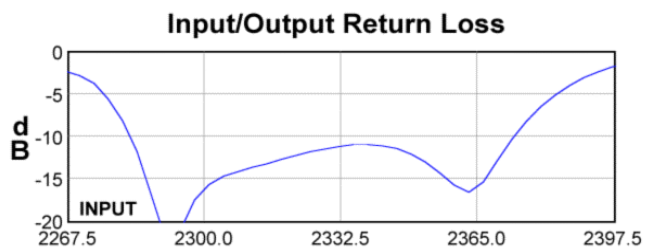
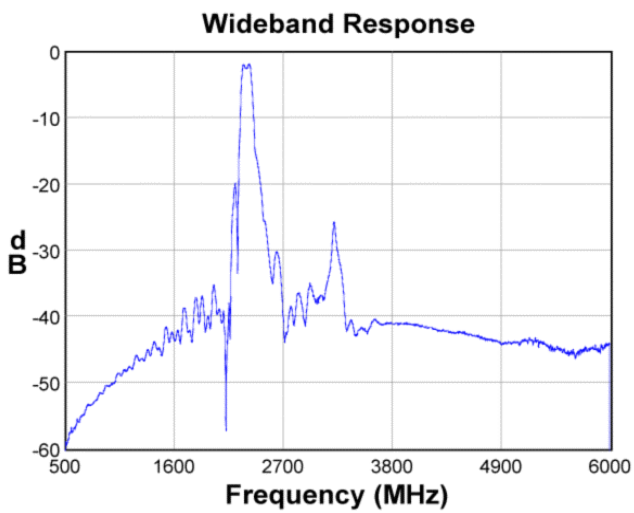
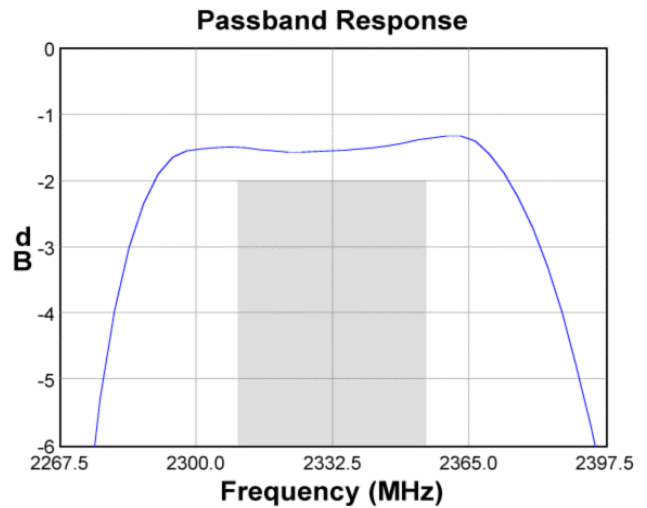
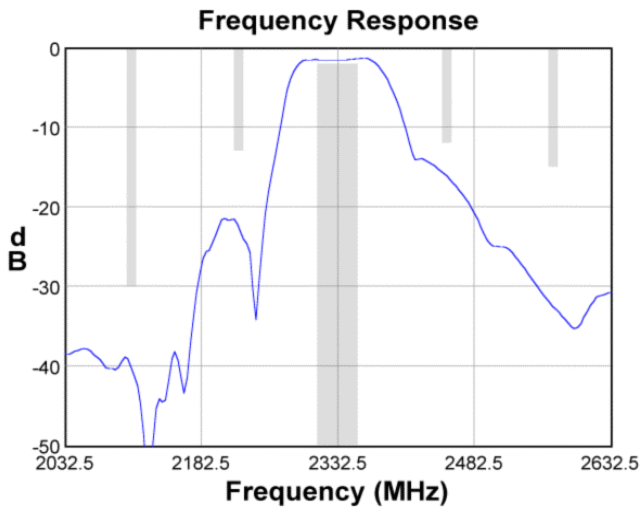


**PCB:** PCB-5BT V-1

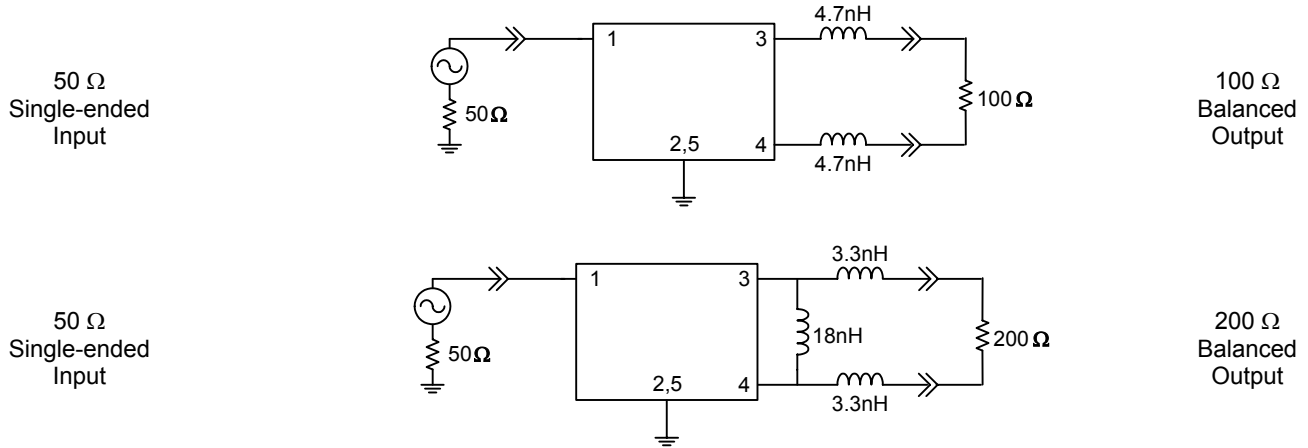
**Inductor Kit:** LQW15AN4N7D10, LQW15AN18NH00 0402 series inductors

**Port extension:** 58ps (input), 43ps (output +), 43ps (output -)

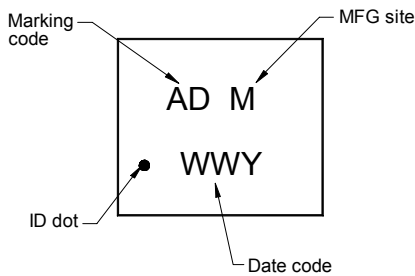
**Typical Performance (at +25°C)**



**Matching Schematics**

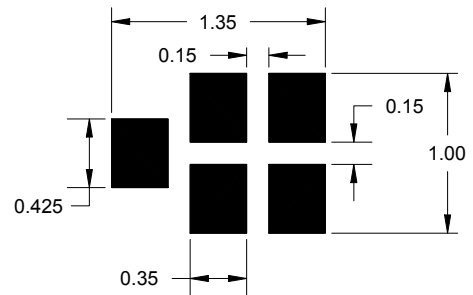


**Marking**



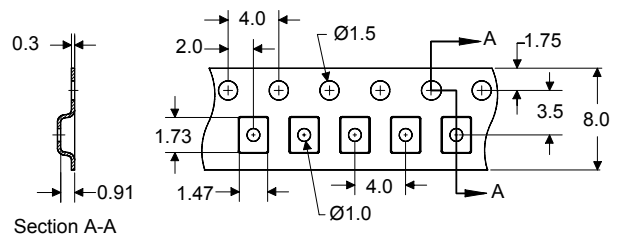
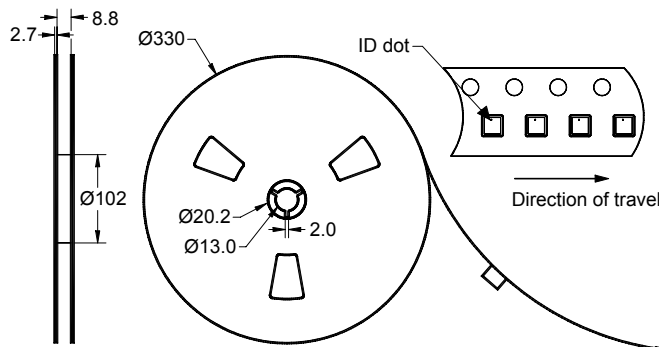
The date code consists of: WW = 2 digit week,  
Y = last digit of year, M = manufacturing site code

**PCB Footprint**



This footprint represents a recommendation only  
Dimensions shown are nominal in millimeters

**Tape and Reel**



Dimensions shown are nominal in millimeters  
Packaging quantity: 10,000 units/reel

# Data Sheet

## Maximum Ratings

Parameter	Symbol	Minimum	Maximum	Unit
Operating Temperature Range	T	-40	+85	°C
Storage Temperature Range	T <sub>stg</sub>	-40	+115	°C

## Important Notes

### Warnings

- Electrostatic Sensitive Device (ESD)
- Avoid ultrasonic exposure



### RoHS Compliance

- This product complies with EU directive 2002/95/EC (RoHS)



### Solderability

- Compatible with JEDEC J-STD-020C **Pb-free** process, **260°C** peak reflow temperature ([see soldering profile](#))

## Links to Additional Technical Information

[PCB Layout Tips](#)

[Qualification Flowchart](#)

[Soldering Profile](#)

[S-Parameters](#)

[RoHS Information](#)

[Other Technical Information](#)

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- Поставка сложных, дефицитных, либо снятых с производства позиций;
- Оперативные сроки поставки под заказ (от 5 рабочих дней);
- Экспресс доставка в любую точку России;
- Техническая поддержка проекта, помощь в подборе аналогов, поставка прототипов;
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- Лицензия ФСБ на осуществление работ с использованием сведений, составляющих государственную тайну;
- Поставка специализированных компонентов (Xilinx, Altera, Analog Devices, Intersil, Interpoint, Microsemi, Aeroflex, Peregrine, Syfer, Eurofarad, Texas Instrument, Miteq, Cobham, E2V, MA-COM, Hittite, Mini-Circuits, General Dynamics и др.);

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- Подбор оптимального решения, техническое обоснование при выборе компонента;
- Подбор аналогов;
- Консультации по применению компонента;
- Поставка образцов и прототипов;
- Техническая поддержка проекта;
- Защита от снятия компонента с производства.



#### Как с нами связаться

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**Адрес:** 198099, г. Санкт-Петербург, ул. Калинина, дом 2, корпус 4, литера А.