

# Ceramic Resonators (CERALOCK®)

Ceramic resonators (CERALOCK®) are made of high stability piezoelectric ceramics that function as a mechanical resonator. At present, CERALOCK® find a broad range of applications such as automotive electronics, communications, personal computing, and medical/healthcare equipment.



« Search Conditions »

cstn(Starting with ...)

Part Number	Frequency	Frequency Tolerance	Frequency Shift by Temperature	Operating Temperature Range	Other Applications	Shape
CSTNE10M0G520000R0 <small>Under development</small>	10.000MHz	±0.50%	±0.20%	-40°C to 85°C	Consumer/Industrial	SMD
CSTNE10M0G52A000R0 <small>Under development</small>	10.000MHz	±0.50%	±0.20%	-40°C to 125°C	Automotive	SMD
CSTNE10M0G52Z000R0 <small>Under development</small>	10.000MHz	±0.50%	±0.20%	-40°C to 125°C	Consumer/Industrial	SMD
CSTNE10M0G550000R0 <small>In Production</small> <small>Recommended</small>	10.000MHz	±0.50%	±0.20%	-40°C to 85°C	Consumer/Industrial	SMD
CSTNE10M0G55A000R0 <small>In Production</small> <small>Recommended</small>	10.000MHz	±0.50%	±0.20%	-40°C to 125°C	Automotive	SMD
CSTNE10M0G55Z000R0 <small>In Production</small> <small>Recommended</small>	10.000MHz	±0.50%	±0.20%	-40°C to 125°C	Consumer/Industrial	SMD

**Attention**

1. This catalog is downloaded from the website of Murata Manufacturing Co., Ltd. Therefore, it's specifications are subject to change or our products in it may be discontinued without advance notice. Please check with our sales representatives or product engineers before ordering.
2. This catalog has only typical specifications because there is no space for detailed specifications. Therefore, please review our product specifications or consult the approval sheet for product specifications before ordering.

# Ceramic Resonators (CERALOCK®)

Part Number	Frequency	Frequency Tolerance	Frequency Shift by Temperature	Operating Temperature Range	Other Applications	Shape
CSTNE10M0GH5C000R0 <small>In Production Recommended</small>	10.000MHz	±0.07%	±0.13%	-40°C to 125°C	Automotive	SMD
CSTNE10M0GH5L000R0 <small>In Production Recommended</small>	10.000MHz	±0.07%	±0.11%	-40°C to 85°C	Consumer/Industrial	SMD
CSTNE11M0G520000R0 <small>Under development</small>	11.000MHz	±0.50%	±0.20%	-40°C to 85°C	Consumer/Industrial	SMD
CSTNE11M2G550000R0 <small>In Production Recommended</small>	11.289MHz	±0.50%	±0.20%	-40°C to 85°C	Consumer/Industrial	SMD
CSTNE12M0G520000R0 <small>Under development</small>	12.000MHz	±0.50%	±0.20%	-40°C to 85°C	Consumer/Industrial	SMD
CSTNE12M0G52A000R0 <small>Under development</small>	12.000MHz	±0.50%	±0.20%	-40°C to 125°C	Automotive	SMD
CSTNE12M0G52Z000R0 <small>Under development</small>	12.000MHz	±0.50%	±0.20%	-40°C to 125°C	Consumer/Industrial	SMD
CSTNE12M0G550000R0 <small>In Production Recommended</small>	12.000MHz	±0.50%	±0.20%	-40°C to 85°C	Consumer/Industrial	SMD
CSTNE12M0G55A000R0 <small>In Production Recommended</small>	12.000MHz	±0.50%	±0.20%	-40°C to 125°C	Automotive	SMD
CSTNE12M0G55Z000R0 <small>In Production Recommended</small>	12.000MHz	±0.50%	±0.20%	-40°C to 125°C	Consumer/Industrial	SMD
CSTNE12M0GH5C000R0 <small>In Production Recommended</small>	12.000MHz	±0.07%	±0.13%	-40°C to 125°C	Automotive	SMD
CSTNE12M0GH5L000R0 <small>In Production Recommended</small>	12.000MHz	±0.07%	±0.11%	-40°C to 85°C	Consumer/Industrial	SMD
CSTNE12M2G520000R0 <small>Under development</small>	12.288MHz	±0.50%	±0.20%	-40°C to 85°C	Consumer/Industrial	SMD
CSTNE12M2G550000R0 <small>In Production Recommended</small>	12.288MHz	±0.50%	±0.20%	-40°C to 85°C	Consumer/Industrial	SMD
CSTNE12M2G55A000R0 <small>In Production Recommended</small>	12.288MHz	±0.50%	±0.20%	-40°C to 125°C	Automotive	SMD

**Attention**

1. This catalog is downloaded from the website of Murata Manufacturing Co., Ltd. Therefore, it's specifications are subject to change or our products in it may be discontinued without advance notice. Please check with our sales representatives or product engineers before ordering.
2. This catalog has only typical specifications because there is no space for detailed specifications. Therefore, please review our product specifications or consult the approval sheet for product specifications before ordering.

# Ceramic Resonators (CERALOCK®)

Part Number	Frequency	Frequency Tolerance	Frequency Shift by Temperature	Operating Temperature Range	Other Applications	Shape
CSTNE12M2GH5L000R0 <span>In Production</span> <span>Recommended</span>	12.288MHz	±0.07%	±0.11%	-40°C to 85°C	Consumer/Industrial	SMD
CSTNE12M5G520000R0 <span>Under development</span>	12.500MHz	±0.50%	±0.20%	-40°C to 85°C	Consumer/Industrial	SMD
CSTNE12M5G550000R0 <span>In Production</span> <span>Recommended</span>	12.500MHz	±0.50%	±0.20%	-40°C to 85°C	Consumer/Industrial	SMD
CSTNE12M5G55A000R0 <span>In Production</span> <span>Recommended</span>	12.500MHz	±0.50%	±0.20%	-40°C to 125°C	Automotive	SMD
CSTNE12M5G55Z000R0 <span>In Production</span> <span>Recommended</span>	12.500MHz	±0.50%	±0.20%	-40°C to 125°C	Consumer/Industrial	SMD
CSTNE13M0G520000R0 <span>Under development</span>	13.000MHz	±0.50%	±0.20%	-40°C to 85°C	Consumer/Industrial	SMD
CSTNE13M0G55A000R0 <span>In Production</span> <span>Recommended</span>	13.000MHz	±0.50%	±0.20%	-40°C to 125°C	Automotive	SMD
CSTNE13M5G520000R0 <span>Under development</span>	13.500MHz	±0.50%	±0.20%	-40°C to 85°C	Consumer/Industrial	SMD
CSTNE13M5G550000R0 <span>In Production</span> <span>Recommended</span>	13.500MHz	±0.50%	±0.20%	-40°C to 85°C	Consumer/Industrial	SMD
CSTNE14M0V510000R0 <span>Under development</span>	14.000MHz	±0.50%	±0.30%	-40°C to 85°C	Consumer/Industrial	SMD
CSTNE14M0V530000R0 <span>In Production</span> <span>Recommended</span>	14.000MHz	±0.50%	±0.30%	-40°C to 85°C	Consumer/Industrial	SMD
CSTNE14M0V53C000R0 <span>In Production</span> <span>Recommended</span>	14.000MHz	±0.50%	±0.15%	-40°C to 125°C	Automotive	SMD
CSTNE14M3V530000R0 <span>In Production</span> <span>Recommended</span>	14.318MHz	±0.50%	±0.30%	-40°C to 85°C	Consumer/Industrial	SMD
CSTNE14M7V510000R0 <span>Under development</span>	14.746MHz	±0.50%	±0.30%	-40°C to 85°C	Consumer/Industrial	SMD
CSTNE14M7V530000R0 <span>In Production</span> <span>Recommended</span>	14.746MHz	±0.50%	±0.30%	-40°C to 85°C	Consumer/Industrial	SMD

### Attention

1. This catalog is downloaded from the website of Murata Manufacturing Co., Ltd. Therefore, it's specifications are subject to change or our products in it may be discontinued without advance notice. Please check with our sales representatives or product engineers before ordering.
2. This catalog has only typical specifications because there is no space for detailed specifications. Therefore, please review our product specifications or consult the approval sheet for product specifications before ordering.

# Ceramic Resonators (CERALOCK®)

Part Number	Frequency	Frequency Tolerance	Frequency Shift by Temperature	Operating Temperature Range	Other Applications	Shape
CSTNE14M7V53C000R0 <span>In Production</span> <span>Recommended</span>	14.746MHz	±0.50%	±0.15%	-40°C to 125°C	Automotive	SMD
CSTNE15M0V530000R0 <span>In Production</span> <span>Recommended</span>	15.000MHz	±0.50%	±0.30%	-40°C to 85°C	Consumer/Industrial	SMD
CSTNE15M0V53C000R0 <span>In Production</span> <span>Recommended</span>	15.000MHz	±0.50%	±0.15%	-40°C to 125°C	Automotive	SMD
CSTNE16M0V510000R0 <span>Under development</span>	16.000MHz	±0.50%	±0.30%	-40°C to 85°C	Consumer/Industrial	SMD
CSTNE16M0V51C000R0 <span>Under development</span>	16.000MHz	±0.50%	±0.30%	-40°C to 125°C	Automotive	SMD
CSTNE16M0V51Z000R0 <span>Under development</span>	16.000MHz	±0.50%	±0.30%	-40°C to 125°C	Consumer/Industrial	SMD
CSTNE16M0V530000R0 <span>In Production</span> <span>Recommended</span>	16.000MHz	±0.50%	±0.30%	-40°C to 85°C	Consumer/Industrial	SMD
CSTNE16M0V53C000R0 <span>In Production</span> <span>Recommended</span>	16.000MHz	±0.50%	±0.15%	-40°C to 125°C	Automotive	SMD
CSTNE16M0V53Z000R0 <span>In Production</span> <span>Recommended</span>	16.000MHz	±0.50%	±0.30%	-40°C to 125°C	Consumer/Industrial	SMD
CSTNE16M0VH3C000R0 <span>In Production</span> <span>Recommended</span>	16.000MHz	±0.07%	±0.13%	-40°C to 125°C	Automotive	SMD
CSTNE16M0VH3L000R0 <span>In Production</span> <span>Recommended</span>	16.000MHz	±0.07%	±0.11%	-40°C to 85°C	Consumer/Industrial	SMD
CSTNE16M3V530000R0 <span>In Production</span> <span>Recommended</span>	16.384MHz	±0.50%	±0.30%	-40°C to 85°C	Consumer/Industrial	SMD
CSTNE16M5V530000R0 <span>In Production</span> <span>Recommended</span>	16.500MHz	±0.50%	±0.30%	-40°C to 85°C	Consumer/Industrial	SMD
CSTNE16M6V530000R0 <span>In Production</span> <span>Recommended</span>	16.670MHz	±0.50%	±0.30%	-40°C to 85°C	Consumer/Industrial	SMD
CSTNE16M6V53C000R0 <span>In Production</span> <span>Recommended</span>	16.670MHz	±0.50%	±0.15%	-40°C to 125°C	Automotive	SMD

### Attention

1. This catalog is downloaded from the website of Murata Manufacturing Co., Ltd. Therefore, it's specifications are subject to change or our products in it may be discontinued without advance notice. Please check with our sales representatives or product engineers before ordering.
2. This catalog has only typical specifications because there is no space for detailed specifications. Therefore, please review our product specifications or consult the approval sheet for product specifications before ordering.

# Ceramic Resonators (CERALOCK®)

Part Number	Frequency	Frequency Tolerance	Frequency Shift by Temperature	Operating Temperature Range	Other Applications	Shape
CSTNE16M6V53Z000R0 <span>In Production</span> <span>Recommended</span>	16.670MHz	±0.50%	±0.30%	-40°C to 125°C	Consumer/Industrial	SMD
CSTNE16M8V530000R0 <span>In Production</span> <span>Recommended</span>	16.800MHz	±0.50%	±0.30%	-40°C to 85°C	Consumer/Industrial	SMD
CSTNE16M9V530000R0 <span>In Production</span> <span>Recommended</span>	16.934MHz	±0.50%	±0.30%	-40°C to 85°C	Consumer/Industrial	SMD
CSTNE16M9V53C000R0 <span>In Production</span> <span>Recommended</span>	16.934MHz	±0.50%	±0.15%	-40°C to 125°C	Automotive	SMD
CSTNE16M9V53Z000R0 <span>In Production</span> <span>Recommended</span>	16.934MHz	±0.50%	±0.30%	-40°C to 125°C	Consumer/Industrial	SMD
CSTNE17M0V530000R0 <span>In Production</span> <span>Recommended</span>	17.000MHz	±0.50%	±0.30%	-40°C to 85°C	Consumer/Industrial	SMD
CSTNE17M2V530000R0 <span>In Production</span> <span>Recommended</span>	17.200MHz	±0.50%	±0.30%	-40°C to 85°C	Consumer/Industrial	SMD
CSTNE18M0V510000R0 <span>Under development</span>	18.000MHz	±0.50%	±0.30%	-40°C to 85°C	Consumer/Industrial	SMD
CSTNE18M0V530000R0 <span>In Production</span> <span>Recommended</span>	18.000MHz	±0.50%	±0.30%	-40°C to 85°C	Consumer/Industrial	SMD
CSTNE18M0VH3C000R0 <span>In Production</span> <span>Recommended</span>	18.000MHz	±0.07%	±0.13%	-40°C to 125°C	Automotive	SMD
CSTNE18M4V530000R0 <span>In Production</span> <span>Recommended</span>	18.432MHz	±0.50%	±0.30%	-40°C to 85°C	Consumer/Industrial	SMD
CSTNE18M4V53C000R0 <span>In Production</span> <span>Recommended</span>	18.432MHz	±0.50%	±0.15%	-40°C to 125°C	Automotive	SMD
CSTNE18M4V53Z000R0 <span>In Production</span> <span>Recommended</span>	18.432MHz	±0.50%	±0.30%	-40°C to 125°C	Consumer/Industrial	SMD
CSTNE18M7V530000R0 <span>In Production</span> <span>Recommended</span>	18.750MHz	±0.50%	±0.30%	-40°C to 85°C	Consumer/Industrial	SMD
CSTNE19M2V530000R0 <span>In Production</span> <span>Recommended</span>	19.200MHz	±0.50%	±0.30%	-40°C to 85°C	Consumer/Industrial	SMD

**Attention**

1. This catalog is downloaded from the website of Murata Manufacturing Co., Ltd. Therefore, it's specifications are subject to change or our products in it may be discontinued without advance notice. Please check with our sales representatives or product engineers before ordering.
2. This catalog has only typical specifications because there is no space for detailed specifications. Therefore, please review our product specifications or consult the approval sheet for product specifications before ordering.

# Ceramic Resonators (CERALOCK®)

Part Number	Frequency	Frequency Tolerance	Frequency Shift by Temperature	Operating Temperature Range	Other Applications	Shape
CSTNE19M2VH3L000R0 <span>In Production</span> <span>Recommended</span>	19.200MHz	±0.07%	±0.11%	-40°C to 85°C	Consumer/Industrial	SMD
CSTNE19M6V510000R0 <span>Under development</span>	19.660MHz	±0.50%	±0.30%	-40°C to 85°C	Consumer/Industrial	SMD
CSTNE19M6V530000R0 <span>In Production</span> <span>Recommended</span>	19.660MHz	±0.50%	±0.30%	-40°C to 85°C	Consumer/Industrial	SMD
CSTNE19M8V530000R0 <span>In Production</span> <span>Recommended</span>	19.800MHz	±0.50%	±0.30%	-40°C to 85°C	Consumer/Industrial	SMD
CSTNE20M0V510000R0 <span>Under development</span>	20.000MHz	±0.50%	±0.30%	-40°C to 85°C	Consumer/Industrial	SMD
CSTNE20M0V51C000R0 <span>Under development</span>	20.000MHz	±0.50%	±0.30%	-40°C to 125°C	Automotive	SMD
CSTNE20M0V51Z000R0 <span>Under development</span>	20.000MHz	±0.50%	±0.30%	-40°C to 125°C	Consumer/Industrial	SMD
CSTNE20M0V530000R0 <span>In Production</span> <span>Recommended</span>	20.000MHz	±0.50%	±0.30%	-40°C to 85°C	Consumer/Industrial	SMD
CSTNE20M0V53C000R0 <span>In Production</span> <span>Recommended</span>	20.000MHz	±0.50%	±0.15%	-40°C to 125°C	Automotive	SMD
CSTNE20M0V53Z000R0 <span>In Production</span> <span>Recommended</span>	20.000MHz	±0.50%	±0.30%	-40°C to 125°C	Consumer/Industrial	SMD
CSTNE20M0VH3C000R0 <span>In Production</span> <span>Recommended</span>	20.000MHz	±0.07%	±0.13%	-40°C to 125°C	Automotive	SMD
CSTNE20M0VH3L000R0 <span>In Production</span> <span>Recommended</span>	20.000MHz	±0.07%	±0.11%	-40°C to 85°C	Consumer/Industrial	SMD
CSTNE8M00G520000R0 <span>Under development</span>	8.000MHz	±0.50%	±0.20%	-40°C to 85°C	Consumer/Industrial	SMD
CSTNE8M00G52A000R0 <span>Under development</span>	8.000MHz	±0.50%	±0.20%	-40°C to 125°C	Automotive	SMD
CSTNE8M00G52Z000R0 <span>Under development</span>	8.000MHz	±0.50%	±0.20%	-40°C to 125°C	Consumer/Industrial	SMD

### Attention

1. This catalog is downloaded from the website of Murata Manufacturing Co., Ltd. Therefore, it's specifications are subject to change or our products in it may be discontinued without advance notice. Please check with our sales representatives or product engineers before ordering.
2. This catalog has only typical specifications because there is no space for detailed specifications. Therefore, please review our product specifications or consult the approval sheet for product specifications before ordering.

# Ceramic Resonators (CERALOCK®)

Part Number	Frequency	Frequency Tolerance	Frequency Shift by Temperature	Operating Temperature Range	Other Applications	Shape
CSTNE8M00G55000R0 <span>In Production</span> <span>Recommended</span>	8.000MHz	±0.50%	±0.20%	-40°C to 85°C	Consumer/Industrial	SMD
CSTNE8M00G55A000R0 <span>In Production</span> <span>Recommended</span>	8.000MHz	±0.50%	±0.20%	-40°C to 125°C	Automotive	SMD
CSTNE8M00G55Z000R0 <span>In Production</span> <span>Recommended</span>	8.000MHz	±0.50%	±0.20%	-40°C to 125°C	Consumer/Industrial	SMD
CSTNE8M00GH5C000R0 <span>In Production</span> <span>Recommended</span>	8.000MHz	±0.07%	±0.13%	-40°C to 125°C	Automotive	SMD
CSTNE8M00GH5L000R0 <span>In Production</span> <span>Recommended</span>	8.000MHz	±0.07%	±0.11%	-40°C to 85°C	Consumer/Industrial	SMD
CSTNE8M19G55000R0 <span>In Production</span> <span>Recommended</span>	8.192MHz	±0.50%	±0.20%	-40°C to 85°C	Consumer/Industrial	SMD
CSTNE8M38G52000R0 <span>Under development</span>	8.388MHz	±0.50%	±0.20%	-40°C to 85°C	Consumer/Industrial	SMD
CSTNE8M38G52A000R0 <span>Under development</span>	8.388MHz	±0.50%	±0.20%	-40°C to 125°C	Automotive	SMD
CSTNE8M38G55000R0 <span>In Production</span> <span>Recommended</span>	8.388MHz	±0.50%	±0.20%	-40°C to 85°C	Consumer/Industrial	SMD
CSTNE8M38G55A000R0 <span>In Production</span> <span>Recommended</span>	8.388MHz	±0.50%	±0.20%	-40°C to 125°C	Automotive	SMD
CSTNE8M50G55000R0 <span>In Production</span> <span>Recommended</span>	8.500MHz	±0.50%	±0.20%	-40°C to 85°C	Consumer/Industrial	SMD
CSTNE9M00G52000R0 <span>Under development</span>	9.000MHz	±0.50%	±0.20%	-40°C to 85°C	Consumer/Industrial	SMD
CSTNE9M00G55000R0 <span>In Production</span> <span>Recommended</span>	9.000MHz	±0.50%	±0.20%	-40°C to 85°C	Consumer/Industrial	SMD
CSTNE9M21G52000R0 <span>Under development</span>	9.210MHz	±0.50%	±0.20%	-40°C to 85°C	Consumer/Industrial	SMD
CSTNE9M60GH5L000R0 <span>In Production</span> <span>Recommended</span>	9.600MHz	±0.07%	±0.11%	-40°C to 85°C	Consumer/Industrial	SMD

### Attention

1. This catalog is downloaded from the website of Murata Manufacturing Co., Ltd. Therefore, it's specifications are subject to change or our products in it may be discontinued without advance notice. Please check with our sales representatives or product engineers before ordering.
2. This catalog has only typical specifications because there is no space for detailed specifications. Therefore, please review our product specifications or consult the approval sheet for product specifications before ordering.

# Ceramic Resonators (CERALOCK®)

Part Number	Frequency	Frequency Tolerance	Frequency Shift by Temperature	Operating Temperature Range	Other Applications	Shape
CSTNE9M83G52000R0 <small>Under development</small>	9.830MHz	±0.50%	±0.20%	-40°C to 85°C	Consumer/Industrial	SMD
CSTNE9M83GH5L000R0 <small>In Production Recommended</small>	9.830MHz	±0.07%	±0.11%	-40°C to 85°C	Consumer/Industrial	SMD
CSTNE9M84G52A000R0 <small>Under development</small>	9.843MHz	±0.50%	±0.20%	-40°C to 125°C	Automotive	SMD
CSTNR4M00GH5C000R0 <small>In Production Recommended</small>	4.000MHz	±0.07%	±0.13%	-40°C to 125°C	Automotive	SMD
CSTNR4M00GH5L000R0 <small>In Production Recommended</small>	4.000MHz	±0.07%	±0.11%	-20°C to 85°C	Consumer/Industrial	SMD
CSTNR4M91GH5L000R0 <small>In Production Recommended</small>	4.915MHz	±0.07%	±0.11%	-20°C to 85°C	Consumer/Industrial	SMD
CSTNR5M00GH5C000R0 <small>In Production Recommended</small>	5.000MHz	±0.07%	±0.13%	-40°C to 125°C	Automotive	SMD
CSTNR5M00GH5L000R0 <small>In Production Recommended</small>	5.000MHz	±0.07%	±0.11%	-20°C to 85°C	Consumer/Industrial	SMD
CSTNR6M00GH5C000R0 <small>In Production Recommended</small>	6.000MHz	±0.07%	±0.13%	-40°C to 125°C	Automotive	SMD
CSTNR6M00GH5L000R0 <small>In Production Recommended</small>	6.000MHz	±0.07%	±0.11%	-20°C to 85°C	Consumer/Industrial	SMD
CSTNR7M37GH5L000R0 <small>In Production Recommended</small>	7.370MHz	±0.07%	±0.11%	-20°C to 85°C	Consumer/Industrial	SMD

**Attention**

1. This catalog is downloaded from the website of Murata Manufacturing Co., Ltd. Therefore, it's specifications are subject to change or our products in it may be discontinued without advance notice. Please check with our sales representatives or product engineers before ordering.
2. This catalog has only typical specifications because there is no space for detailed specifications. Therefore, please review our product specifications or consult the approval sheet for product specifications before ordering.



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:

- Конкуренспособные 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](mailto:org@lifeelectronics.ru)

[www.lifeelectronics.ru](http://www.lifeelectronics.ru)