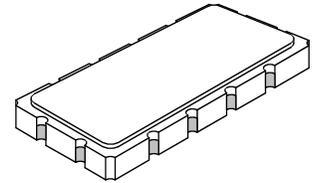


- **Excellent Size-to-Performance Ratio**
- **Hermetic 13.3 X 6.5 mm Surface-Mount Case**
- **Complies with Directive 2002/95/EC (RoHS)**



SF2140A-1

**140.0 MHz
SAW Filter**



SMP-53

Absolute Maximum Ratings

| Rating | Value | Units |
|--|-----------------|-------|
| Input Power Level | +10 | dBm |
| Storage Temperature Range | -40 to +85 | °C |
| Operating Temperature Range | -30 to +80 | °C |
| Suitable for Lead-free Soldering - Maximum Soldering Profile | 260 °C for 30 s | |

Electrical Characteristics

| Characteristic | Sym | Notes | Min | Typ | Max | Units |
|---|-------|-------|------|-------|------|--------|
| Nominal Center Frequency | f_C | 1 | | 140.0 | | MHz |
| Maximum Insertion Loss at f_C | IL | | | 10.3 | 11.0 | dB |
| 1 dB Bandwidth | | | 18.4 | 20.8 | | MHz |
| 3 dB Bandwidth | | | 19.6 | 21.4 | | MHz |
| 35 dB Bandwidth | | | | 25.2 | 26.4 | MHz |
| Passband Ripple, 130.8 to 149.2 MHz | | | | 0.8 | 1.0 | dB |
| Group Delay Ripple, 130.8 to 149.2 MHz | | | | 115 | 160 | ns |
| Absolute Group Delay | | | | 1.0 | | µs |
| Input VSWR, 130.8 to 149.2 MHz | | | | 1.7 | 2.8 | dB |
| Output VSWR, 130.8 to 149.2 MHz | | | | 1.8 | 2.3 | dB |
| Temperature Coefficient | | | | | | ppm/°C |
| Attenuation Referenced to Insertion Loss at f_C | | | | | | dB |
| 10 to 90 MHz | | | 35 | 49 | | |
| 90 to 120 MHz | | | 40 | 47 | | |
| 120 to 126.8 MHz | | | 35 | 50 | | |
| 153.2 to 160 MHz | | | 35 | 45 | | |
| 160 to 190 MHz | | | 40 | 53 | | |
| 190 to 800 MHz | | | 35 | 62 | | |
| Source/Load Impedance | | | | 50 | | ohms |

| | |
|---|--|
| Case Style | SMP-53 13.3 X 6.5 mm Nominal Footprint |
| Lid Symbolization (YY=year, WW=week) See note 4 | RFM SF2140A-1 YYWWS## |

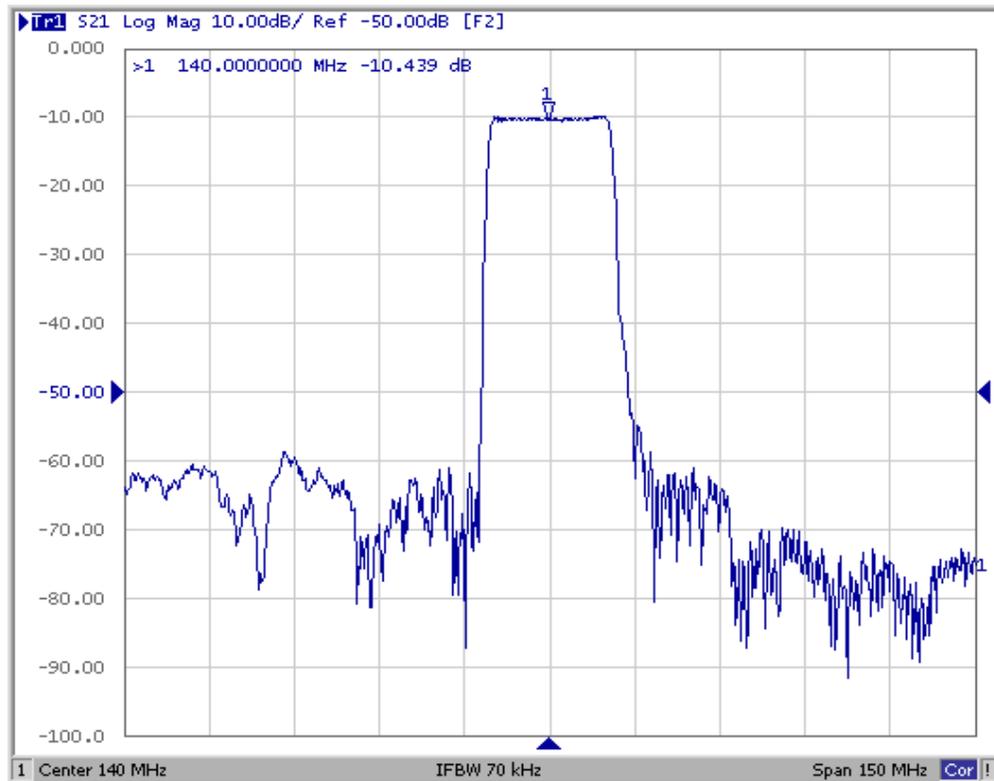


CAUTION: Electrostatic Sensitive Device. Observe precautions for handling.

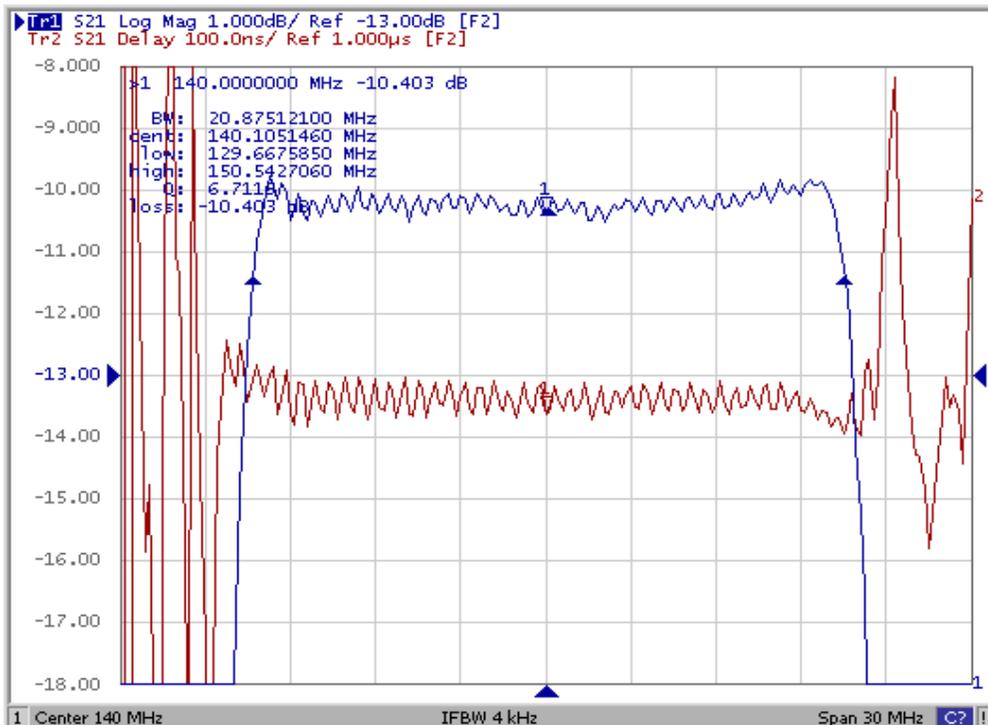
NOTES:

1. Unless noted otherwise, all specifications apply over the operating temperature range with filter soldered to the specified demonstration board with impedance matching to 50 Ω and measured with 50 Ω network analyzer.
2. Unless noted otherwise, all frequency specifications are referenced to the nominal center frequency, f_C .
3. Rejection is measured as attenuation below the minimum IL point in the passband. Rejection in final user application is dependent on PCB layout and external impedance matching design. See Application Note No. 42 for details.
4. "LRIP" or "L" after the part number indicates "low rate initial production" and "ENG" or "E" indicates "engineering prototypes."
5. The design, manufacturing process, and specifications of this filter are subject to change.
6. Either Port 1 or Port 2 may be used for either input or output in the design. However, impedances and impedance matching may vary between Port 1 and Port 2, so that the filter must always be installed in one direction per the circuit design.
7. US and international patents may apply.
8. Murata, stylized Murata logo, and Murata N.A., Inc. are registered trademarks of Murata Manufacturing Co., Ltd.

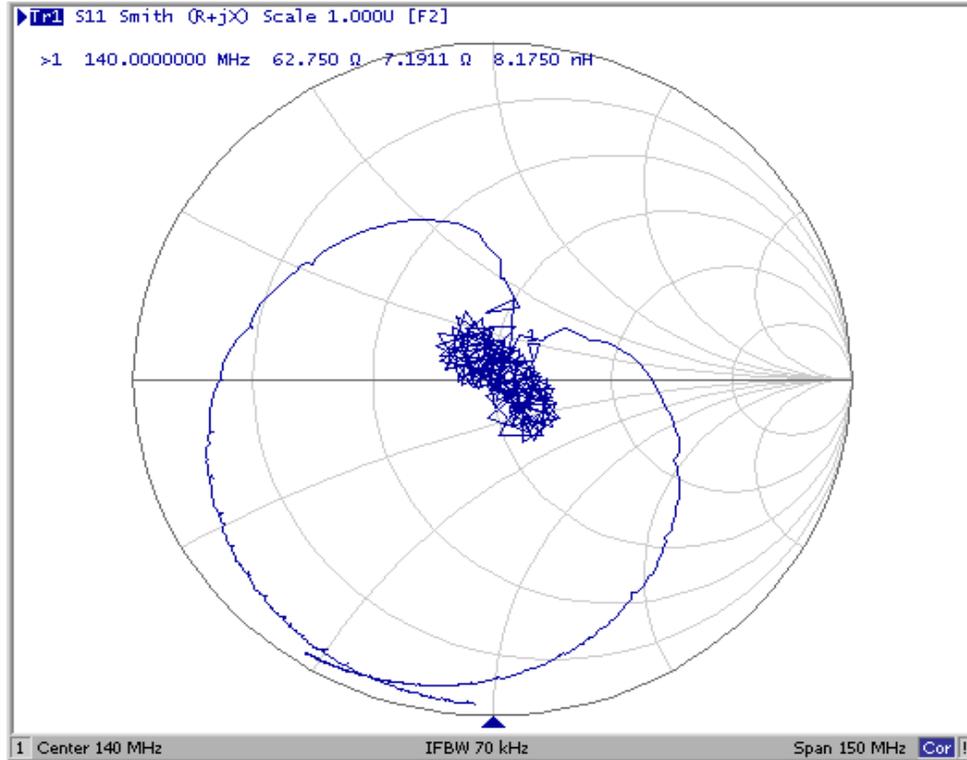
SF2140A-1 S₂₁ Amplitude Response



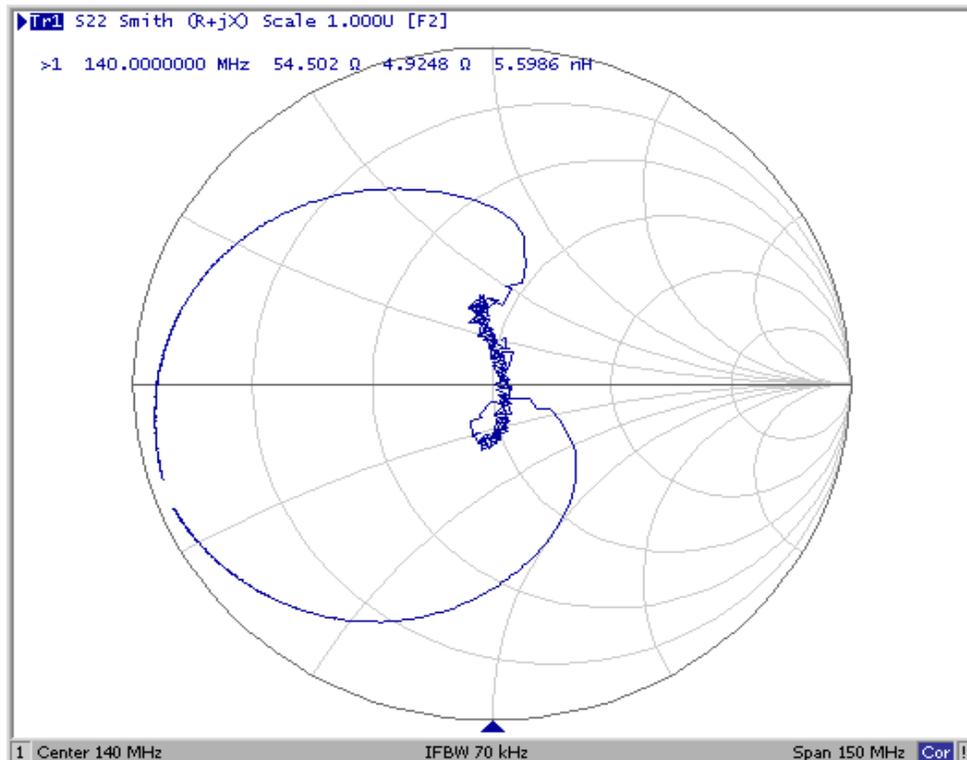
SF2140A-1 Pass-band Amplitude and Group Delay Ripple



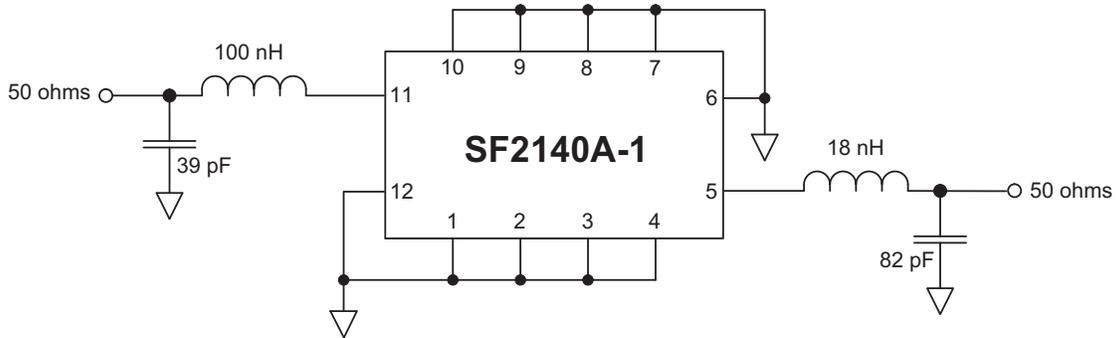
SF2140A-1 S_{11} Impedance Plot through Matching Network



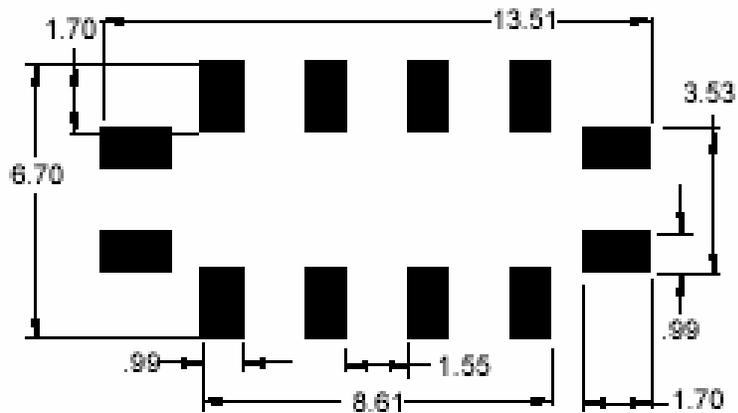
SF2140A-1 S_{22} Impedance Plot through Matching Network



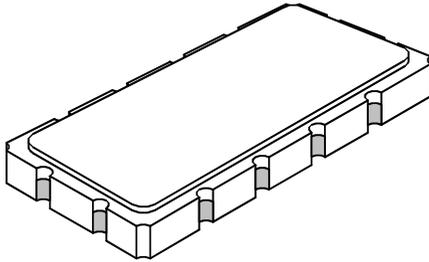
SF2140A-1 50 ohm Matching Network



SF2140A-1 Circuit Board Pad Layout



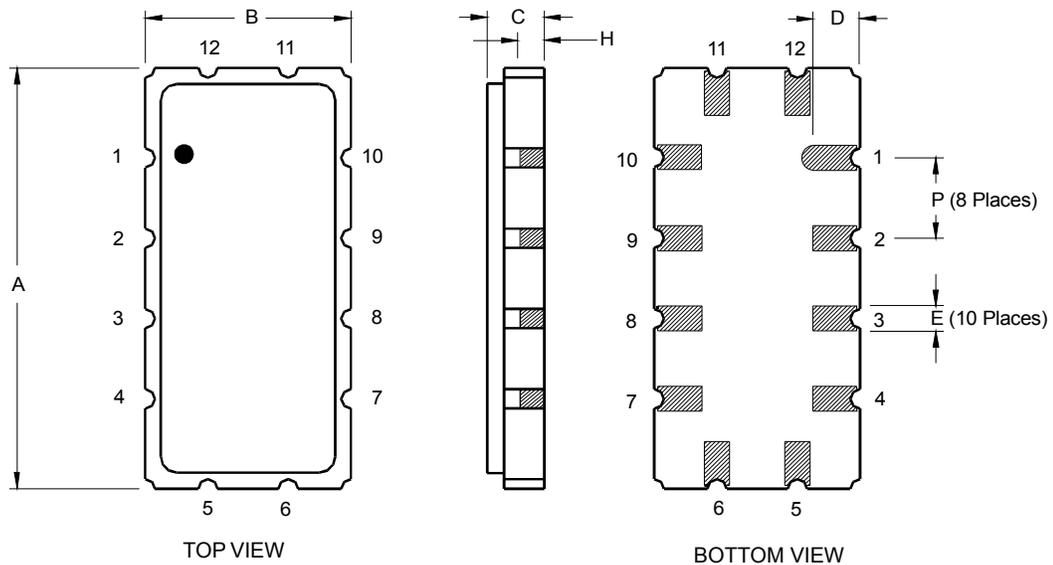
12-Terminal Ceramic Surface-Mount Case 13.3 x 6.5 mm Nominal Footprint



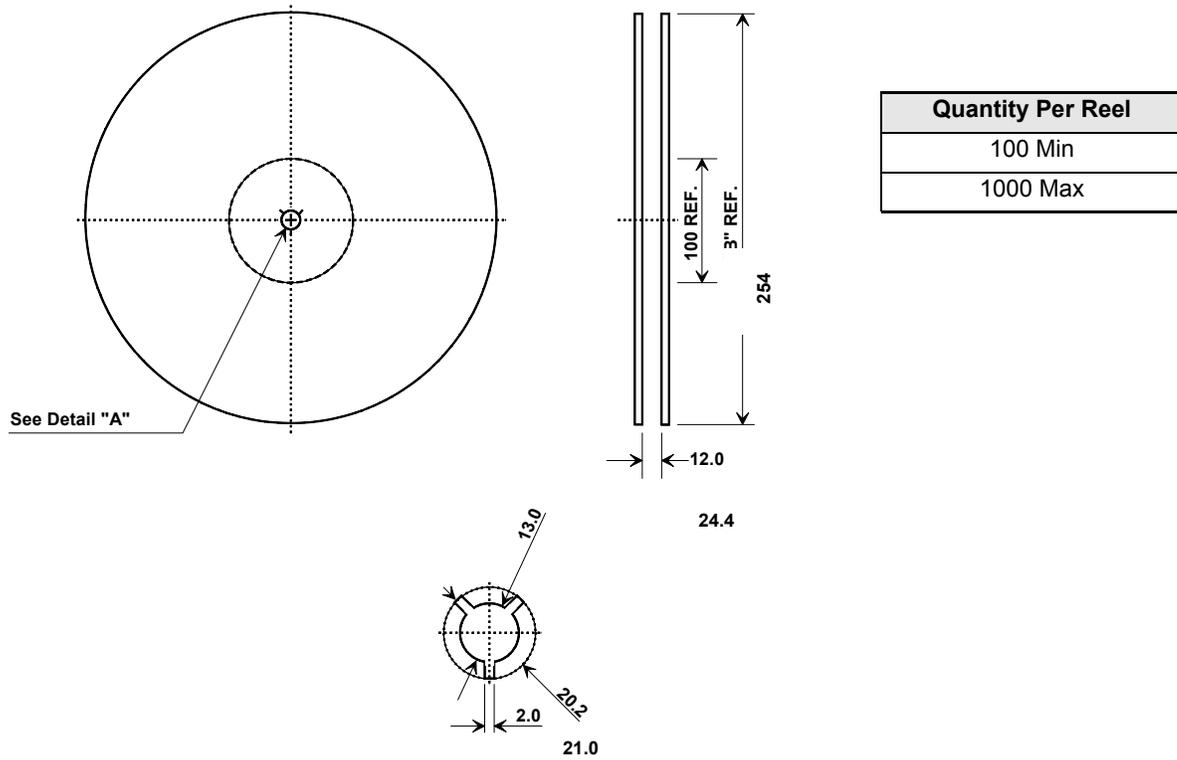
| Case Dimensions | | | | | | |
|-----------------|-------|-------|-------|--------|-------|-------|
| Dimension | mm | | | Inches | | |
| | Min | Nom | Max | Min | Nom | Max |
| A | 13.08 | 13.31 | 13.60 | 0.515 | 0.524 | 0.535 |
| B | 6.27 | 6.50 | 6.80 | 0.247 | 0.256 | 0.268 |
| C | | 1.91 | 2.00 | | 0.075 | 0.079 |
| D | | 1.50 | | | 0.059 | |
| E | | 0.79 | | | 0.031 | |
| H | | 1.0 | | | 0.039 | |
| P | | 2.54 | | | 0.100 | |

| Electrical Connections | | |
|------------------------|------------------|------------|
| Connection | | Terminals |
| Port 1 | RF Input | 11 |
| | RF Input Ground | 12 |
| Port 2 | RF Output | 5 |
| | RF Output Ground | 6 |
| Ground | | All others |

| Materials | |
|--------------------|--|
| Solder Pad Plating | 0.3 to 1.0 μm Gold over 1.27 to 8.89 μm Nickel |
| Lid Plating | 2.0 to 3.0 μm Nickel |
| Body | Al_2O_3 Ceramic |
| Pb Free | |

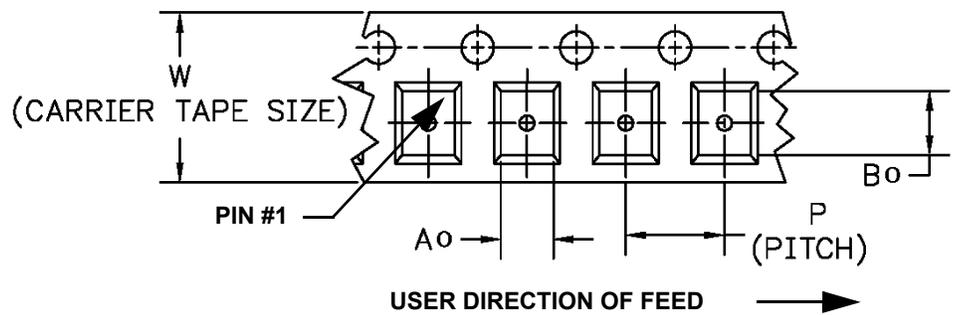
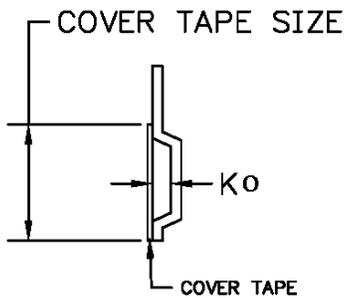


Tape and Reel Specifications



COMPONENT ORIENTATION and DIMENSIONS

| Carrier Tape Dimensions | |
|-------------------------|---------|
| Ao | 7.0 mm |
| Bo | 13.8 mm |
| Ko | 2.0 mm |
| Pitch | 12.0 mm |
| W | 24.0 mm |



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

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



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