

# Programmable - High Performance SMD Crystal Oscillator

## ASG-C Series

Moisture Sensitivity Level (MSL) - This product is Hermetically Sealed and not Moisture Sensitive; therefore MSL = N/A (Not Applicable)



RoHS  
Compliant



7.0 x 5.0 x 2.0mm

### FEATURES:

- ASG series is a High Performance crystal based oscillator; available either as an XO or a VCXO
- Frequency range from 10MHz to 250MHz with LVCMOS output
- Available from 10MHz to 1.50GHz with LVDS or LVPECL output
- Offered with either 2.50V or 3.30V bias voltage
- Quick turn, 1~5 business days for small quantity orders

### APPLICATIONS:

- Networking, SONET/SDH
- WiMax / WLAN
- Computing
- Phase Locked Loops
- Direct Digital Synthesis (DDS)
- DSL/ADSL
- Base Terminal Stations

### STANDARD SPECIFICATIONS:

| Parameters  | Minimum  | Typical                | Maximum                | Units | Notes                |                |
|---|--|------------------------|------------------------|-------|----------------------|----------------|
| Frequency Range:  | V <sub>dd</sub> = 3.3V   | 10                     | 250                    | MHz   |                      |                |
|   | V <sub>dd</sub> = 2.5V   | 10                     | 250                    | MHz   |                      |                |
| Operating Temperature:  | -40  |                        | +85                    | °C    |                      |                |
| Storage Temperature:  | -55  |                        | +125                   | °C    |                      |                |
| Overall Frequency Stability:                                      | -50  |                        | +50                    | ppm   | <i>See Note # 1</i>  |                |
| Initial Set Tolerance   | -5.00  | ≤ ±1.00                | +5.00                  | ppm   |                      |                |
| Stability over operating temperature                              | -35.00   | ≤ ±20.00               | +35.00                 | ppm   |                      |                |
| Aging @ 25°C over 10-years  | -7.00  |                        | +7.00                  | ppm   |                      |                |
| Frequency variation over supply voltage change (±5%)              | -2.00  |                        | +2.00                  | ppm   |                      |                |
| Frequency variation over load variation (15pF ± 5%)               | -1.00  |                        | +1.00                  | ppm   |                      |                |
| Supply Voltage (V <sub>dd</sub> ):                                | V <sub>dd</sub> = 3.3V   | 3.135                  | 3.300                  | 3.465 | V                    |                |
|   | V <sub>dd</sub> = 2.5V   | 2.375                  | 2.500                  | 2.625 | V                    |                |
| Input Current:  | V <sub>dd</sub> = 3.3V   |                        | 45                     | mA    | Frequency dependent  |                |
|   | V <sub>dd</sub> = 2.5V   |                        | 35                     | mA    | Frequency dependent  |                |
| Symmetry:   | 48   | 50                     | 52                     | %     | @ 1/2V <sub>dd</sub> |                |
| Rise and Fall Time (Tr/Tf):                                       |  | ≤ 450                  | 1000                   | ps    |                      |                |
| Output Load:  |  |                        | 15                     | pF    | CMOS                 |                |
| Output Voltage:   | VOH  | V <sub>dd</sub> * 0.90 |                        | V     |                      |                |
|   | VOL  |                        | V <sub>dd</sub> * 0.10 | V     |                      |                |
| Start-up Time:  |  | ≤ 2.0                  | 3.0                    | ms    |                      |                |
| Enable/Disable Function :   | "1" (V <sub>IH</sub> ≥ 0.7*V <sub>dd</sub> ) or Open: Oscillation<br>"0" (V <sub>IL</sub> < 0.3*V <sub>dd</sub> ) : High Z |                        |                        |       |                      |                |
| V <sub>control</sub> Range  | 0.00   |                        | V <sub>dd</sub>        | Volts |                      |                |
| Frequency Pull  | ±50  |                        |                        | ppm   |                      |                |
| Control Port Bandwidth  | 10   |                        |                        | kHz   |                      |                |
| Phase jitter RMS [ t <sub>jitter(φ)</sub> ]<br><i>See Note #2</i> | Integer Mode   |                        | < 0.60                 | 1.60  | ps                   | 12kHz to 20MHz |
|   | Fractional Mode  |                        | < 0.90                 | 1.60  | ps                   | 12kHz to 20MHz |

**Note #1:** Inclusive of initial tolerance at 25°C±3°C, operating temperature range, input voltage variation, load variation & aging.

**Note #2:** The rms jitter over 12kHz to 20MHz Bandwidth is dependent on the carrier and whether or not the final frequency is achieved without engaging the Fractional Mode

ABRACON IS  
ISO9001:2008  
CERTIFIED



**ABRACON**  
CORPORATION

Visit [www.abracon.com](http://www.abracon.com) for Terms & Conditions of Sale **Revised: 04.27.12**  
30332 Esperanza, Rancho Santa Margarita, California 92688  
tel 949-546-8000 | fax 949-546-8001 | [www.abracon.com](http://www.abracon.com)

# Programmable - High Performance SMD Crystal Oscillator

ASG-C Series

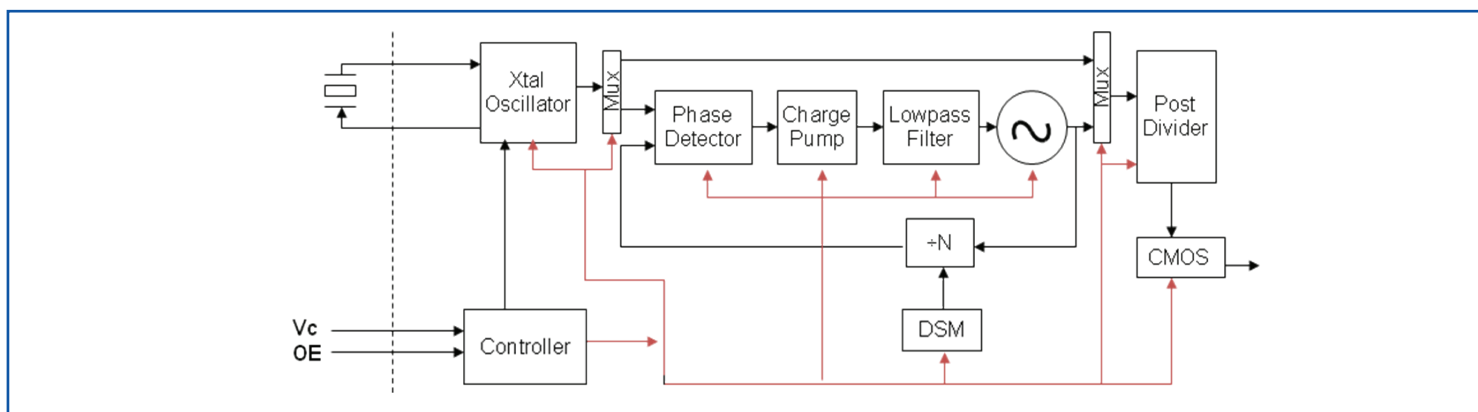


RoHS  
Compliant



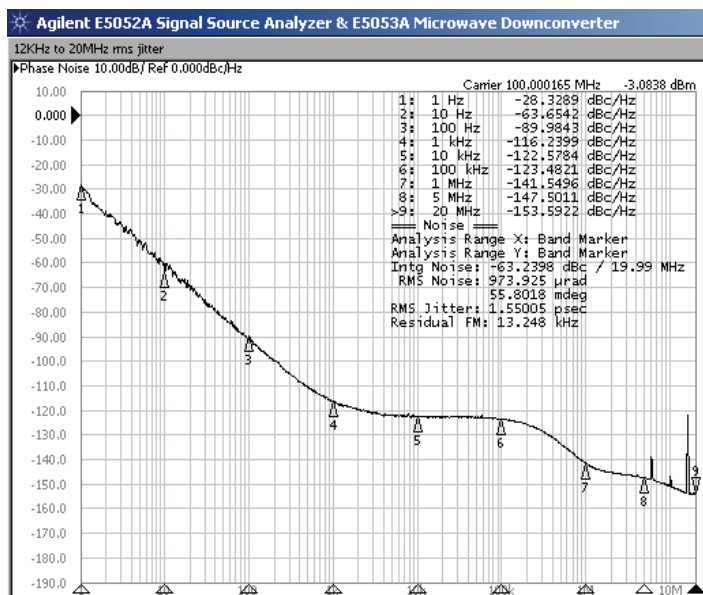
7.0 x 5.0 x 2.0mm

## OVERALL SYSTEM BLOCK DIAGRAM

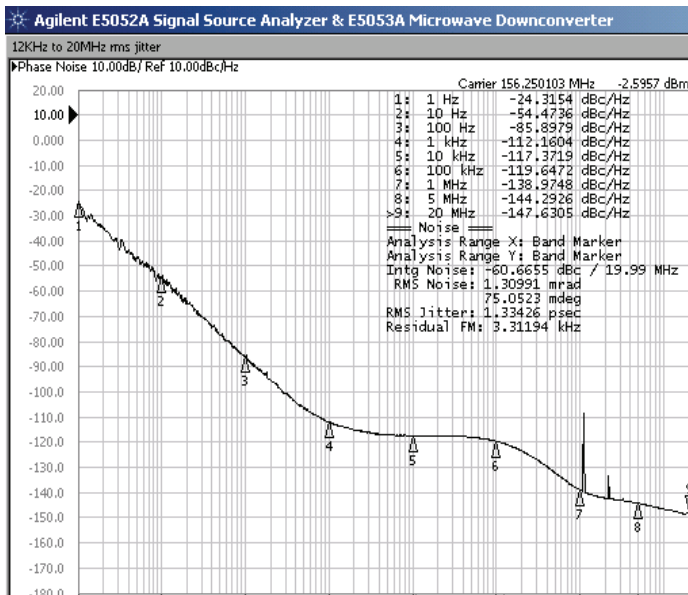


## PHASE NOISE & JITTER CHARACTERISTICS

### 100MHz Carrier



### 156.25MHz Carrier



# Programmable - High Performance SMD Crystal Oscillator

ASG-C Series

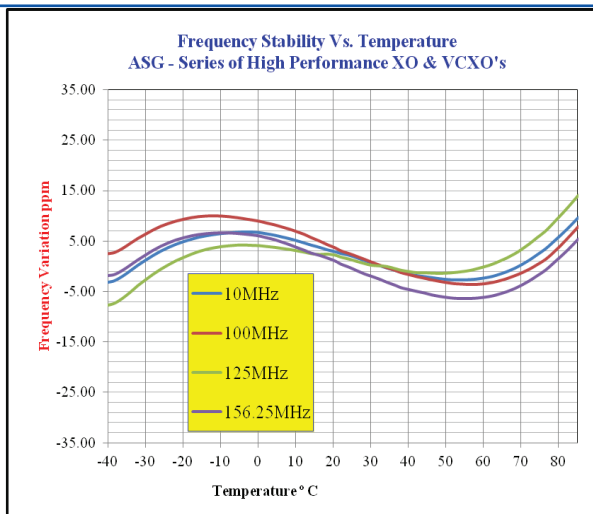


RoHS  
Compliant

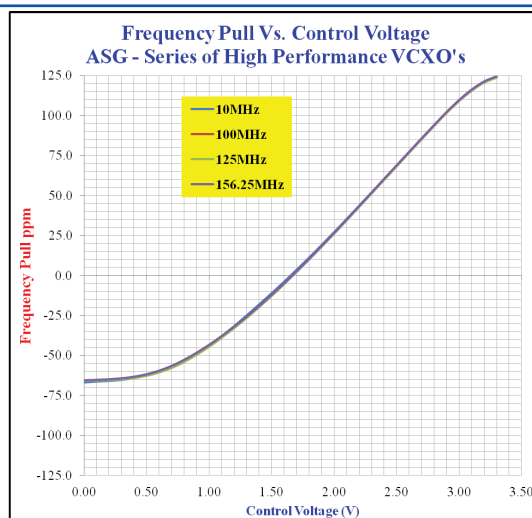


7.0 x 5.0 x 2.0mm

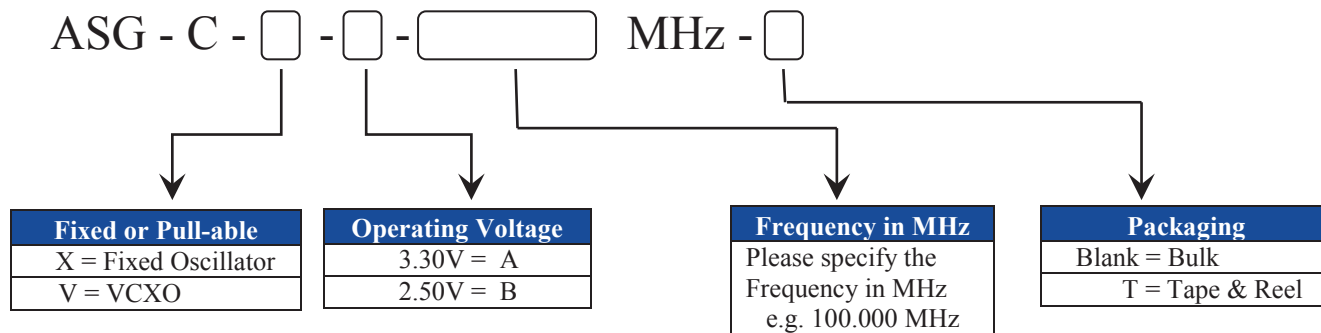
## FREQUENCY STABILITY VS. TEMPERATURE



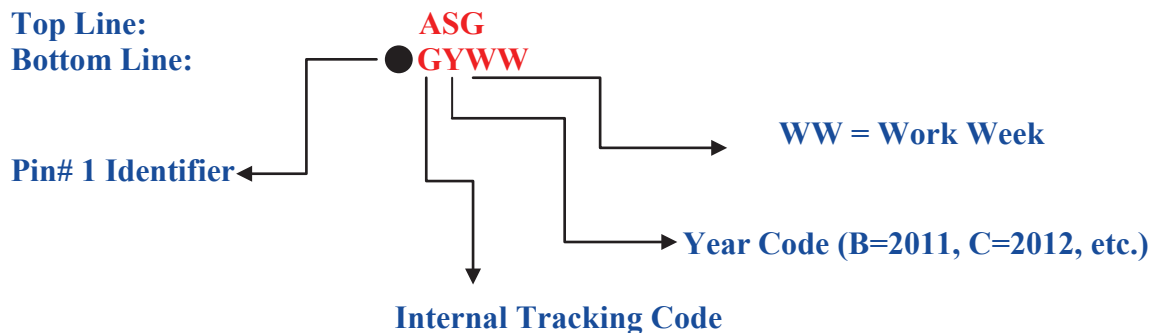
## FREQUENCY PULLING VS. CONTROL VOLTAGE (VCXO MODE)



## PART IDENTIFICATION:



## MARKING:



# Programmable - High Performance SMD Crystal Oscillator

ASG-C Series



RoHS  
Compliant

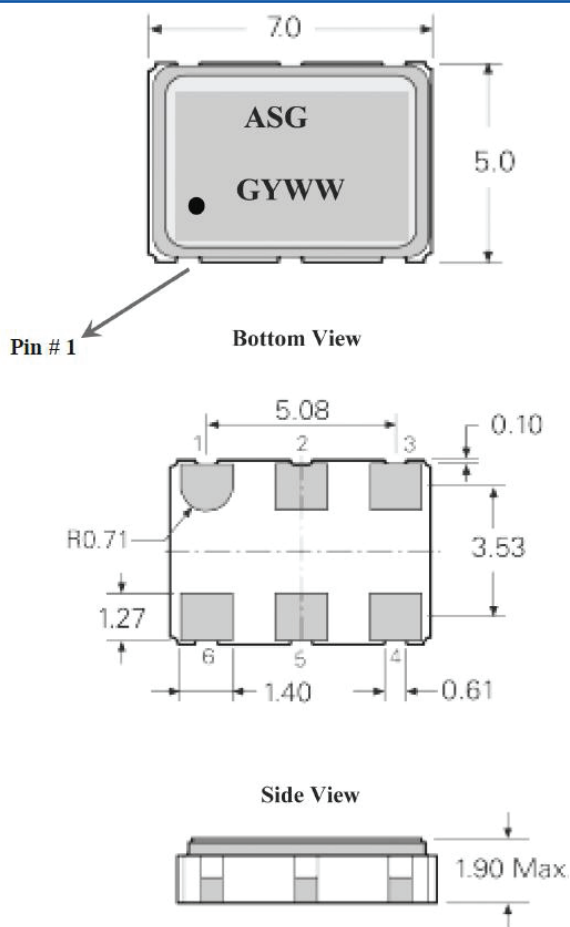


7.0 x 5.0 x 2.0mm

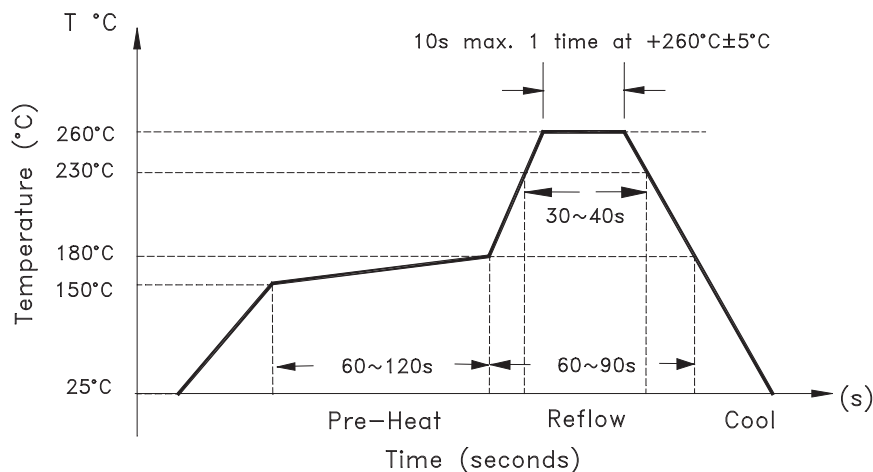
## OUTLINE DIMENSIONS:

| Pin # | Pin Description<br>For VCXO configuration |
|-------|---|
| 1     | Voltage Control for VCXO                  |
| 2     | Output Enable (OE)                        |
| 3     | GND                                       |
| 4     | RF Output                                 |
| 5     | N/C                                       |
| 6     | Vdd                                       |

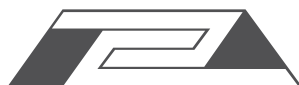
| Pin # | Pin Description<br>For XO configuration |
|-------|---|
| 1     | Output Enable (OE)                      |
| 2     | N/C for XO                              |
| 3     | GND                                     |
| 4     | RF Output                               |
| 5     | N/C                                     |
| 6     | Vdd                                     |



## REFLOW PROFILE:



ABRACON IS  
ISO9001:2008  
CERTIFIED



**ABRACON**  
CORPORATION

Visit [www.abracon.com](http://www.abracon.com) for Terms & Conditions of Sale **Revised: 04.27.12**  
30332 Esperanza, Rancho Santa Margarita, California 92688  
tel 949-546-8000 | fax 949-546-8001 | [www.abracon.com](http://www.abracon.com)

# Programmable - High Performance SMD Crystal Oscillator

ASG-C Series

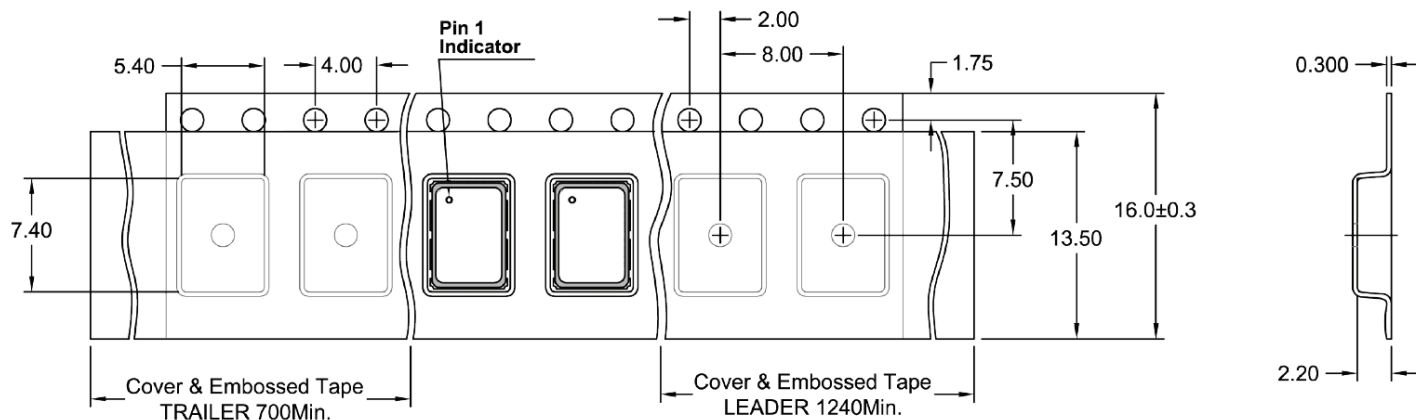


7.0 x 5.0 x 2.0mm

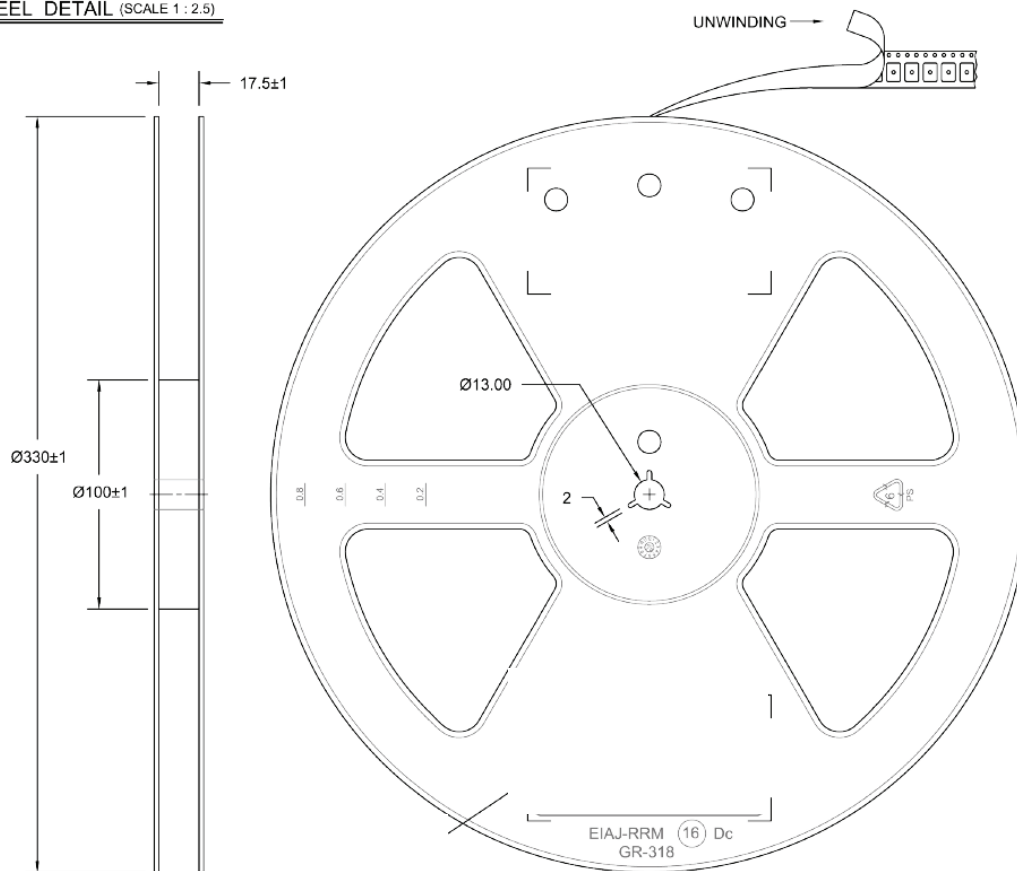
## TAPE & REEL:

T= Tape and reel (2,000pcs/reel)

### TAPE DETAIL (SCALE 2 : 1)



### REEL DETAIL (SCALE 1 : 2.5)



**ATTENTION:** Abracon Corporation's products are COTS – Commercial-Off-The-Shelf products; suitable for Commercial, Industrial and, where designated, Automotive Applications. Abracon's products are not specifically designed for Military, Aviation, Aerospace, Life-dependant Medical applications or any application requiring high reliability where component failure could result in loss of life and/or property. For applications requiring high reliability and/or presenting an extreme operating environment, written consent and authorization from Abracon Corporation is required. Please contact Abracon Corporation for more information.

ABRACON IS  
ISO9001:2008  
CERTIFIED

Visit [www.abracon.com](http://www.abracon.com) for Terms & Conditions of Sale **Revised: 04.27.12**  
30332 Esperanza, Rancho Santa Margarita, California 92688  
tel 949-546-8000 | fax 949-546-8001 | [www.abracon.com](http://www.abracon.com)



Компания «ЭлектроПласт» предлагает заключение долгосрочных отношений при поставках импортных электронных компонентов на взаимовыгодных условиях!

Наши преимущества:

- Оперативные поставки широкого спектра электронных компонентов отечественного и импортного производства напрямую от производителей и с крупнейших мировых складов;
- Поставка более 17-ти миллионов наименований электронных компонентов;
- 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;
- Система менеджмента качества сертифицирована по Международному стандарту ISO 9001;
- 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.);

Помимо этого, одним из направлений компании «ЭлектроПласт» является направление «Источники питания». Мы предлагаем Вам помощь Конструкторского отдела:

- 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

**Телефон:** 8 (812) 309 58 32 (многоканальный)

**Факс:** 8 (812) 320-02-42

**Электронная почта:** [org@eplast1.ru](mailto:org@eplast1.ru)

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