



SPECIFICATION FOR APPROVAL

Customer _____

Description DC FAN

Part No. _____ REV. _____

Delta Model No. EFC0812DB-F00 REV. 00

Sample Issue No. _____

Sample Issue Date JUN.27.2007

PLEASE SEND ONE COPY OF THIS SPECIFICATION
BACK AFTER YOU SIGNED APPROVAL FOR
PRODUCTION PRE-ARRANGMENT.

APPROVED BY: _____

DATE : _____

DELTA ELECTRONICS, INC.
TAOYUAN PLANT
252, SHANG YING ROAD, KUEI SAN INDUSTRIAL ZONE
TAOYUAN SHIEN, TAIWAN, R.O.C.
TEL:886-(0)3-3591968
FAX:886-(0)3-3591991

DELTA ELECTRONICS, INC.
 252, SHANG YING ROAD, KUEI SAN
 TAOYUAN HSIEN 333, TAIWAN, R. O. C.

TEL : 886-(0)3-3591968
 FAX : 886-(0)3-3591991

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Description: DC FAN

Customer P/N:

REV:

Delta Model NO.: EFC0812DB-F00

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Quantity:

1. SCOPE:

THIS SPECIFICATION DEFINES THE ELECTRICAL AND MECHANICAL CHARACTERISTICS OF THE DC BRUSHLESS AXIAL FLOW FAN. THE FAN MOTOR IS WITH TWO PHASES AND FOUR POLES.
 FOLLOWING DATA IS BASED ON PROTOTYPE SAMPLES, ONLY FOR REFERENCE.

2. CHARACTERS:

| ITEM | DESCRIPTION |
|--|---|
| RATED VOLTAGE | 12.0 VDC |
| OPERATION VOLTAGE | 7.0 - 12.6 VDC |
| INPUT CURRENT | 0.33 (MAX. 0.50) A |
| INPUT POWER | 3.96 (MAX. 6.00) W |
| SPEED (REF.) | 3800 R.P.M. |
| MAX. AIR FLOW (AT ZERO STATIC PRESSURE) | 1.382 (MIN. 1.244) M ³ /MIN. 48.80 (MIN. 43.92) CFM |
| MAX. AIR PRESSURE (AT ZERO AIRFLOW) | 4.35 (MIN. 3.52) mmH ₂ O 0.171 (MIN. 0.139) inchH ₂ O |
| ACOUSTICAL NOISE (AVG.) | 41.0 (MAX. 45.0) dB-A |
| INSULATION TYPE | UL: CLASS A |

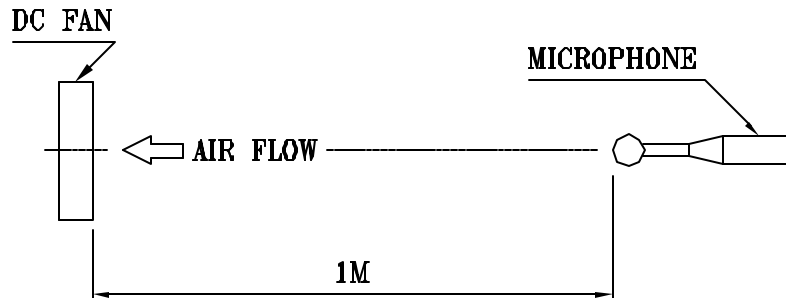
(continued)

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| | |
|------------------------|---|
| INSULATION STRENGTH | 10 MEG OHM MIN. AT 500 VDC (BETWEEN FRAME AND (+) TERMINAL) |
| DIELECTRIC STRENGTH | 5 mA MAX. AT 500 VAC 60 Hz ONE MINUTE, (BETWEEN FRAME AND (+) TERMINAL) |
| EXTERNAL COVER | OPEN TYPE |
| LIFE EXPECTANCE | 70,000 HOURS CONTINUOUS OPERATION AT 40 °C WITH 15 ~ 65 %RH. |
| ROTATION | CLOCKWISE VIEW FROM NAME PLATE SIDE |
| OVER CURRENT SHUT DOWN | THE CURRENT WILL SHUT DOWN WHEN LOCKING ROTOR |
| LEAD WIRE | UL 1061 -F- AWG #26 BLACK WIRE: NEGATIVE(-) RED WIRE: POSITIVE(+) BLUE WIRE: TACHOMETER OUTPUT (F00) YELLOW WIRE: SPEED CONTROL (PWM) |

- NOTES: 1. ALL READINGS ARE MEASURED AFTER STABLY WARMING UP THROUGH 10 MINUTES.
2. THE VALUES WRITTEN IN PARENS , (), ARE LIMITED SPEC.
3. ACOUSTICAL NOISE MEASURING CONDITION:



NOISE IS MEASURED AT RATED VOLTAGE IN FREE AIR IN ANECHOIC CHAMBER WITH B & K SOUND LEVEL METER WITH MICROPHONE AT A DISTANCE OF ONE METER FROM THE FAN INTAKE.

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3. MECHANICAL:

- 3-1. DIMENSIONS _____ SEE DIMENSIONS DRAWING
- 3-2. FRAME _____ PLASTIC UL: 94V-0
- 3-3. IMPELLER _____ PLASTIC UL: 94V-0
- 3-4. BEARING SYSTEM _____ TWO BALL BEARING
- 3-5. WEIGHT _____ 67 GRAMS

4. ENVIRONMENTAL:

- 4-1. OPERATING TEMPERATURE _____ -10 TO +60 DEGREE C
- 4-2. STORAGE TEMPERATURE _____ -40 TO +70 DEGREE C
- 4-3. OPERATING HUMIDITY _____ 5 TO 90 % RH
- 4-4. STORAGE HUMIDITY _____ 5 TO 95 % RH

5. PROTECTION:

5-1. LOCKED ROTOR PROTECTION

IMPEDANCE OF MOTOR WINDING PROTECTS MOTOR FROM FIRE IN 96 HOURS OF LOCKED ROTOR CONDITION AT THE RATED VOLTAGE.

5-2. POLARITY PROTECTION

BE CAPABLE OF WITHSTANDING IF REVERSE CONNECTION FOR POSITIVE AND NEGATIVE LEADS.

6. RE OZONE DEPLETING SUBSTANCES:

- 6-1. NO CONTAINING PBBs, PBBOs, CFCs, PBBEs, PBDPEs AND HCFCs.

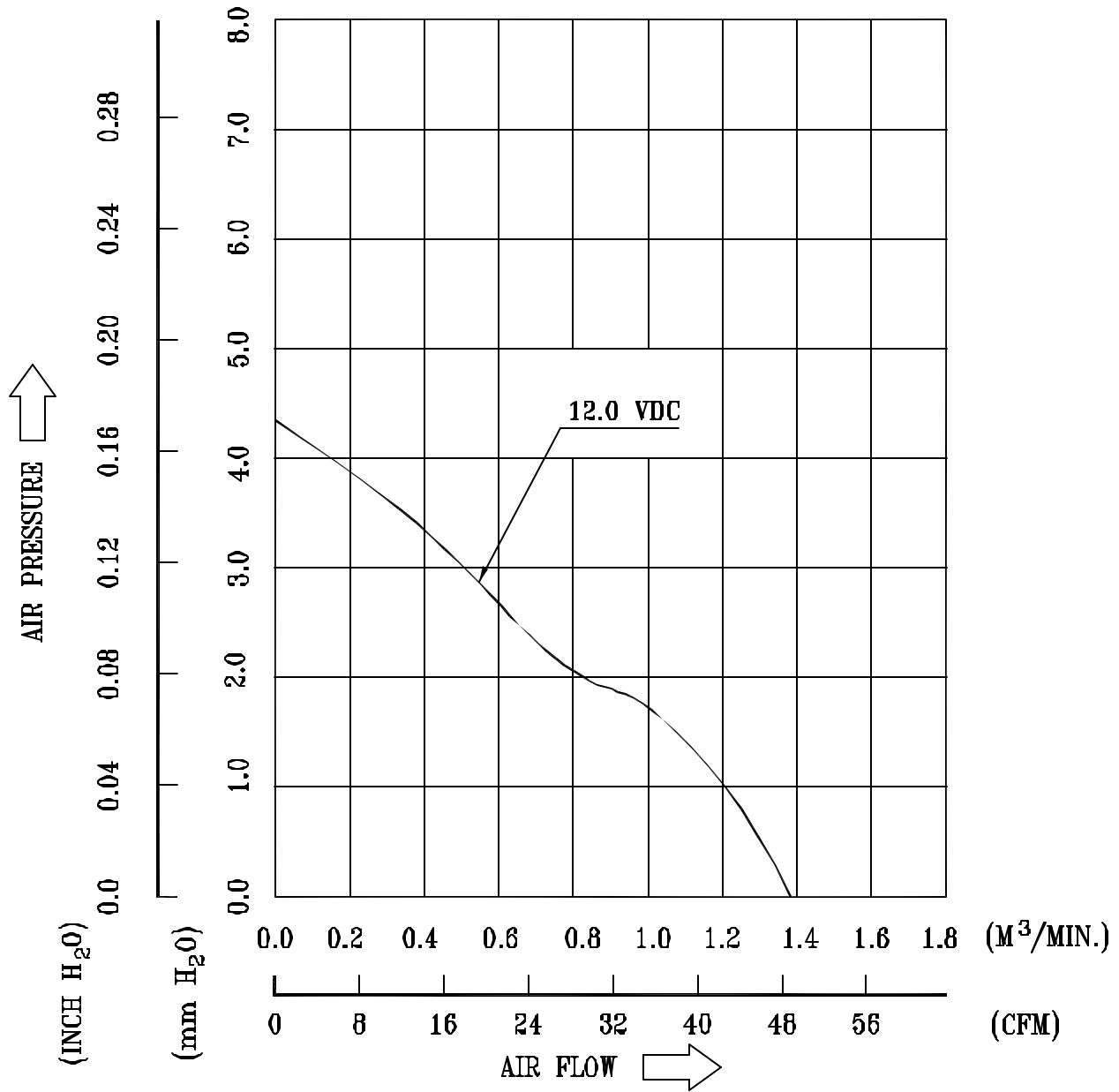
7. PRODUCTION LOCATION

- 7-1. PRODUCTS WILL BE PRODUCED IN CHINA OR THAILAND OR TAIWAN.

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8. P & Q CURVE:



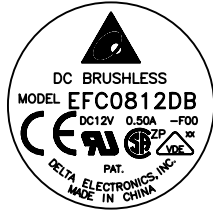
* TEST CONDITION: INPUT VOLTAGE ——— OPERATION VOLTAGE
TEMPERATURE ——— ROOM TEMPERATURE
HUMIDITY ——— 65%RH

PART NO:

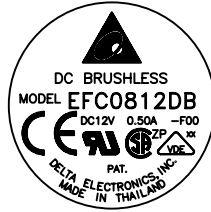
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9. DIMENSION DRAWING:

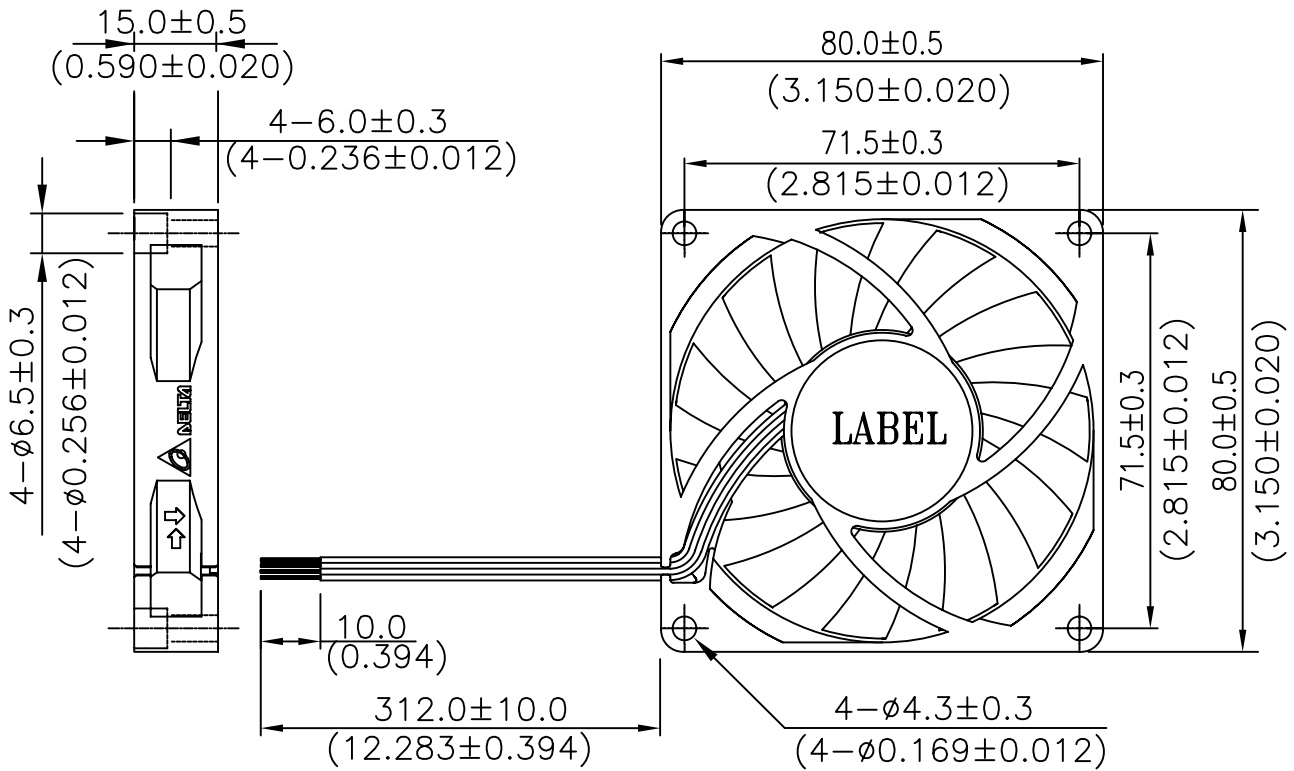
LABEL:



OR



OR



UL 1061 -F- AWG #26

BLACK WIRE: NEGATIVE(-)

RED WIRE: POSITIVE(+)

BLUE WIRE: TACHOMETER OUTPUT (F00)

YELLOW WIRE: SPEED CONTROL (PWM)

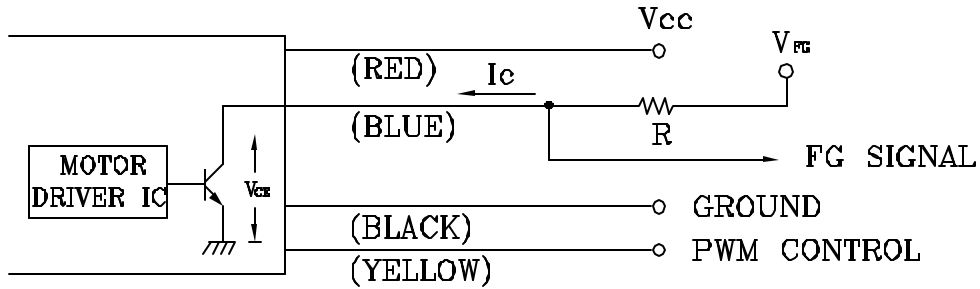
UNIT: mm(INCH)

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10. ROTATION DETECT (FG) SIGNAL:

1. OUTPUT CIRCUIT - OPEN COLLECTOR MODE:



CAUTION: THE FG SIGNAL LEAD WIRE MUST BE KEPT AWAY FROM "+" LEAD WIRE & "-" LEAD WIRE.

2. SPECIFICATION:

$$V_{ce(sat)} = 0.5V \text{ MAX}$$

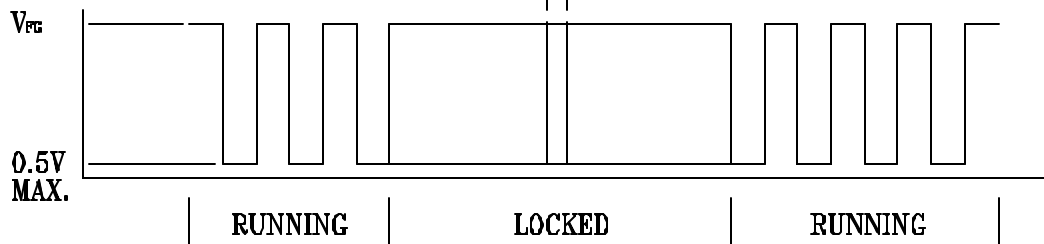
$$V_{FG} = 12.6V \text{ MAX}$$

$$I_c = 5mA \text{ MAX.}$$

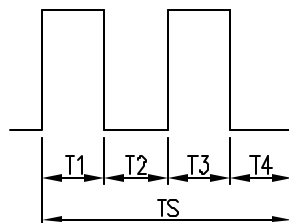
$$R \geq V_{FG} / I_c$$

3. FREQUENCY GENERATOR WAVEFORM:

AUTOMATIC SELF ROTATION RECOVERY



FAN RUNNING FOR 4 POLES



$$T1 = T2 = T3 = T4 = 1/4TS$$

N=R.P.M

$$TS = 60/N(\text{SEC})$$

*VOLTAGE LEVEL AFTER BLADE LOCKED

*4 POLES

BLADE LOCKED

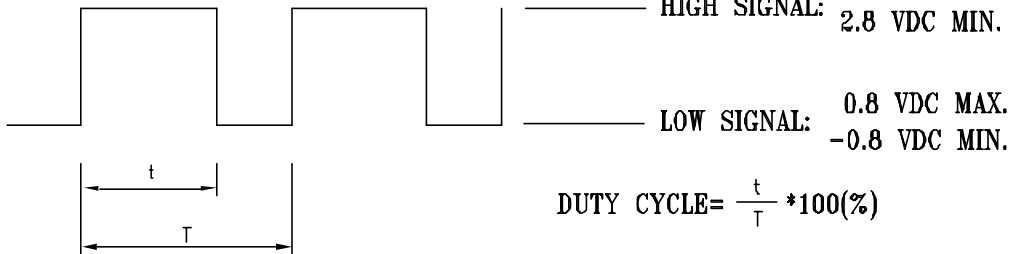
OR

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12. PWM CONTROL SIGNAL:

SIGNAL VOLTAGE RANGE: -0.8~20VDC

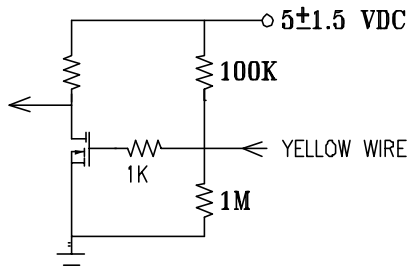


- THE FREQUENCY FOR CONTROL SIGNAL OF THE FAN SHALL BE ABLE TO ACCEPT A 30~300 KHZ.
- THE PREFERRED OPERATING POINT FOR THE FAN IS 20K HZ.
- AT 100% DUTY CYCLE,THE ROTOR WILL SPIN AT MAXIMUM SPEED.
- AT 0% DUTY CYCLE,THE ROTOR WILL STOP SPIN .
- WITH CONTROL SIGNAL LEAD DISCONNECTED,THE FAN WILL SPIN AT MAXIMUM SPEED.
- AT 20K HZ 30% DUTY CYCLE ,THE FAN WILL BE ABLE TO STAR FROM A DEAD STOP .

13. SPEED VS PWM CONTROL SIGNAL: (AT RATED VOLTAGE & PWM FREQUENCY=20KHZ)

| DUTY CYCLE (%) | SPEED R.P.M. (REF.) | CURRENT (A) REF. |
|----------------|---------------------|------------------|
| 100 | 3800 | 0.33 |
| 75 | 3100 | 0.21 |
| 50 | 2200 | 0.10 |
| 25 | 1100 | 0.04 |
| 0 | 0 | 0 |

14. PWM CONTROL LEAD WIRE INPUT IMPEDANCE:



- 14-1. THE FAN SPEED WILL DEFAULT TO MAXIMUM WHEN THE SPEED CONTROLL INPUT IS LEFT UNCONNECTED.



Descriptions:

- 1. Delta will not guarantee the performance of the products if the application condition falls outside the parameters set forth in the specification.**
- 2. A written request should be submitted to Delta prior to approval if deviation from this specification is required.**
- 3. Please exercise caution when handling fans. Damage may be caused when pressure is applied to the impeller, if the fans are handled by the lead wires, or if the fans are hard-dropped to the production floor.**
- 4. Except as pertains to some special designs, there is no guarantee that the products will be free from any such safety problems or failures as caused by the introduction of powder, droplets of water or encroachment of insect into the hub.**
- 5. The above-mentioned conditions are representative of some unique examples and viewed as the first point of reference prior to all other information.**
- 6. It is very important to establish the correct polarity before connecting the fan to the power source. Positive (+) and Negative (-). Damage may be caused to the fans if connection is with reverse polarity, as there is no foolproof method to protect against such error.**
- 7. Delta fans are not suitable where any corrosive fluids are introduced to their environment.**
- 8. Please ensure all fans are stored according to the storage temperature limits specified. Do not store fans in a high humidity environment. We highly recommend performance testing is conducted before shipping, if the fans have been stored over 6 months.**
- 9. Not all fans are provided with the Lock Rotor Protection feature. If you impair the rotation of the impeller for the fans that do not have this function, the performance of those fans will lead to failure.**
- 10. Please be cautious when mounting the fan. Incorrect mounting of fans may cause excess resonance, vibration and subsequent noise.**
- 11. It is important to consider safety when testing the fans. A suitable fan guard should be fitted to the fan to guard against any potential for personal injury.**
- 12. Except where specifically stated, all tests are carried out at relative (ambient) temperature and humidity conditions of 25°C, 65%. The test value is only for fan performance itself.**
- 13. Be certain to connect an “over 4.7µF” capacitor to the fan externally when the application calls for using multiple fans in parallel, to avoid any unstable power.**



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

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