

FC6946010R  
Dual N-channel MOS FET

For switching

■ Features

- Low drive voltage: 2.5 V drive
- Halogen-free / RoHS compliant  
(EU RoHS / UL-94 V-0 / MSL : Level 1 compliant)

■ Marking Symbol : V6

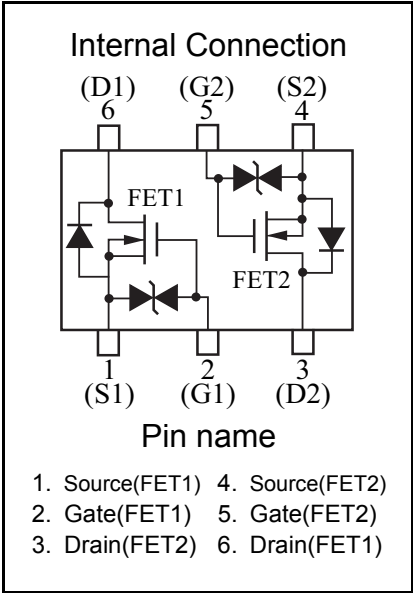
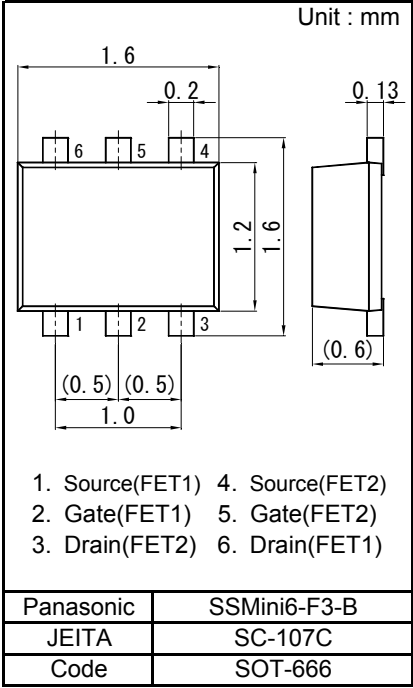
■ Basic Part Number : Dual FK390601 (Individual)

■ Packaging

Embossed type (Thermo-compression sealing): 8 000 pcs / reel (standard)

■ Absolute Maximum Ratings Ta = 25 °C

| Parameter |                                | Symbol | Rating      | Unit |
|-----------|--------------------------------|--------|-------------|------|
| FET1      | Drain-source breakdown voltage | VDSS   | 60          | V    |
|           | Gate-source breakdown voltage  | VGSS   | ±12         | V    |
| FET2      | Drain current                  | ID     | 100         | mA   |
|           | Pulse drain current            | IDp    | 200         | mA   |
| Overall   | Total power dissipation        | PT     | 125         | mW   |
|           | Channel temperature            | Tch    | 150         | °C   |
|           | Operating ambient temperature  | Topr   | -40 to +85  | °C   |
|           | Storage temperature            | Tstg   | -55 to +150 | °C   |



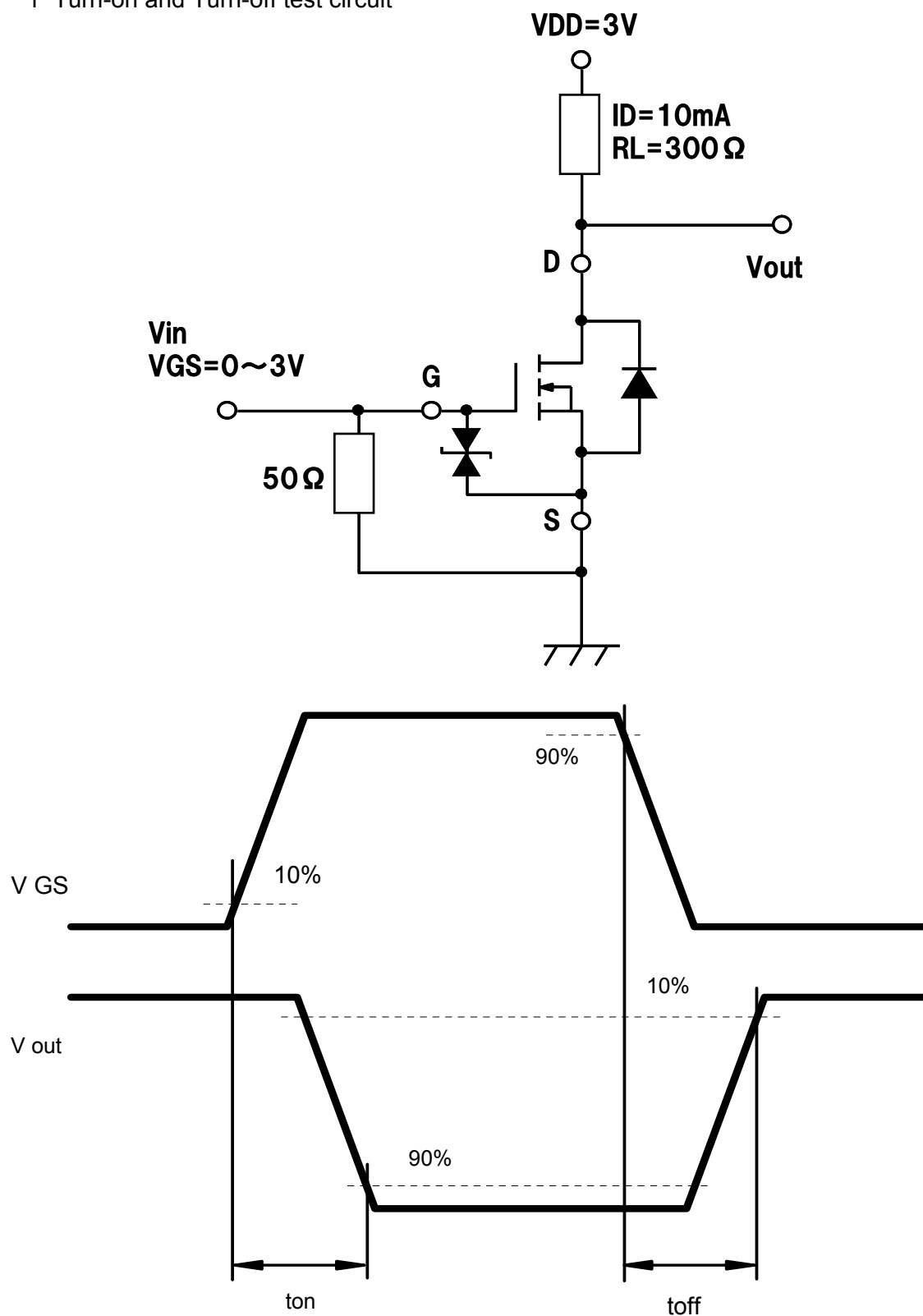
■ Electrical Characteristics Ta = 25 °C ± 3 °C  
FET1,FET2

| Parameter                      | Symbol   | Conditions                              | Min | Typ | Max | Unit |
|--------------------------------|----------|-----------------------------------------|-----|-----|-----|------|
| Drain-source breakdown voltage | VDSS     | ID = 1 mA, VGS = 0                      | 60  |     |     | V    |
| Drain-source cutoff current    | IDSS     | VDS = 60 V, VGS = 0                     |     |     | 1.0 | μA   |
| Gate-source cutoff current     | IGSS     | VGS = ±10 V, VDS = 0                    |     |     | ±10 | μA   |
| Gate threshold voltage         | VTH      | ID = 1.0 μA, VDS = 3.0 V                | 0.9 | 1.2 | 1.5 | V    |
| Drain-source ON resistance     | RDS(on)1 | ID = 10 mA, VGS = 2.5 V                 |     | 8   | 15  | Ω    |
|                                | RDS(on)2 | ID = 10 mA, VGS = 4.0 V                 |     | 6   | 12  | Ω    |
| Forward transfer admittance    | Yfs      | ID = 10 mA, VDS = 3.0 V                 | 20  | 60  |     | mS   |
| Input capacitance              | Ciss     | VDS = 3 V, VGS = 0, f = 1 MHz           |     | 12  |     | pF   |
| Output capacitance             | Coss     |                                         |     | 7   |     | pF   |
| Reverse transfer capacitance   | Crss     |                                         |     | 3   |     | pF   |
| Turn-on time *1                | ton      | VDD = 3 V, VGS = 0 to 3 V<br>ID = 10 mA |     | 100 |     | ns   |
| Turn-off time *1               | toff     | VDD = 3 V, VGS = 3 to 0 V<br>ID = 10 mA |     | 100 |     | ns   |

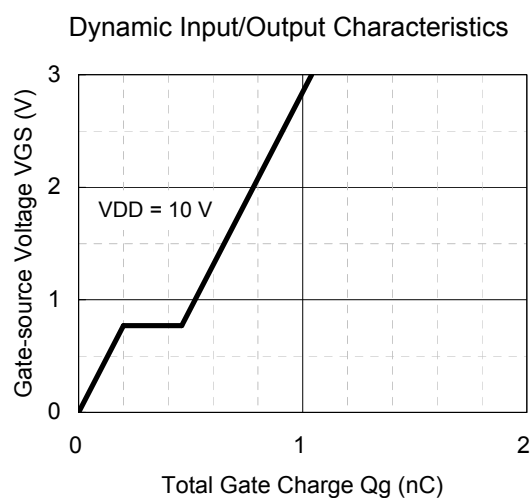
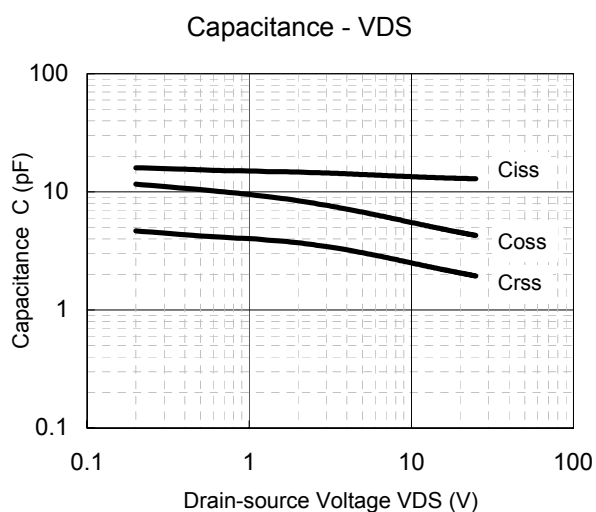
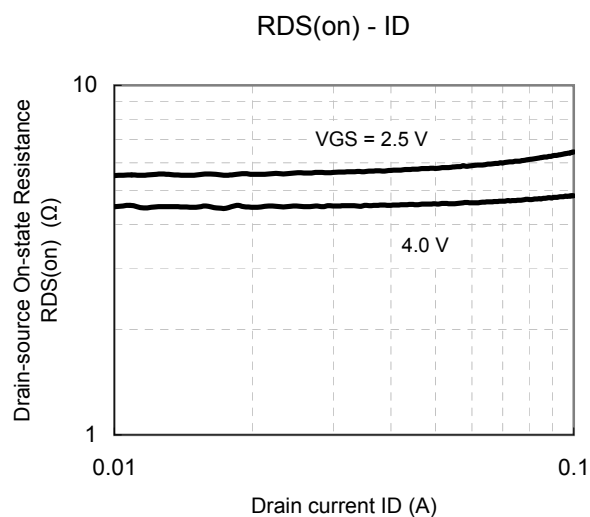
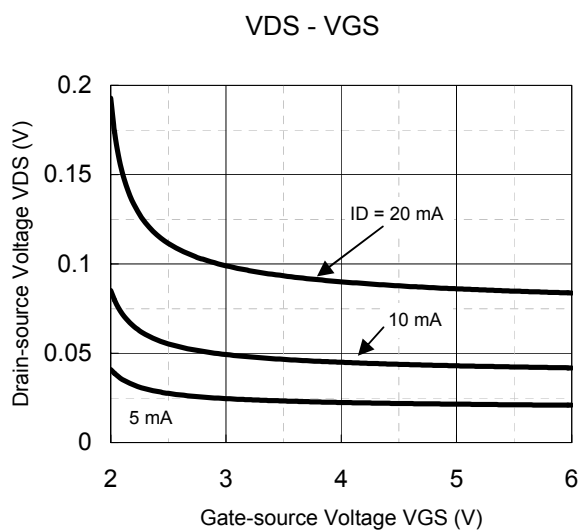
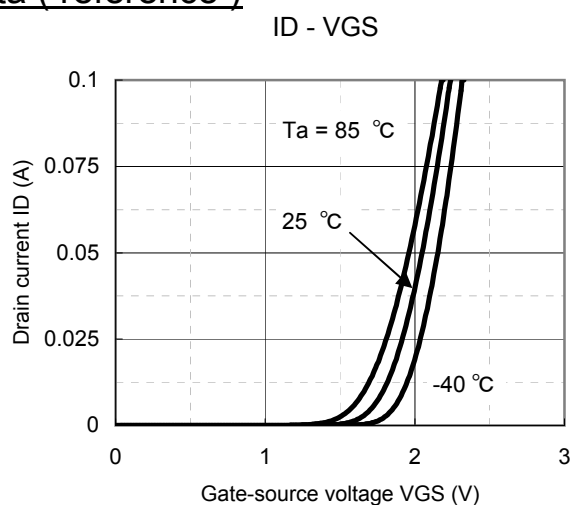
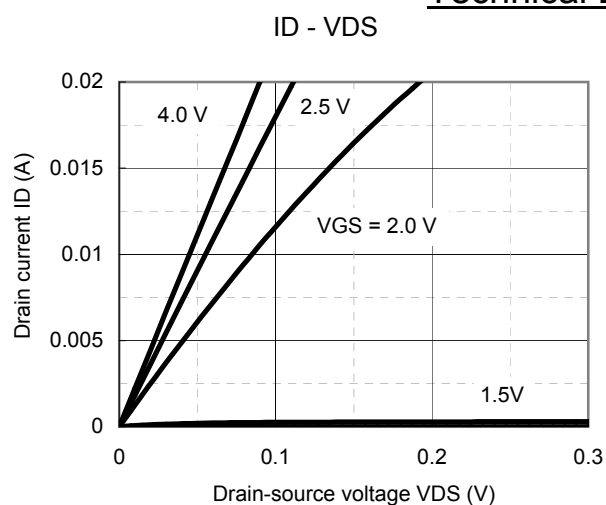
Note) 1. Measuring methods are based on JAPANESE INDUSTRIAL STANDARD JIS C 7030 Measuring methods for transistors.

2. \*1 Turn-on and Turn-off test circuit

\*1 Turn-on and Turn-off test circuit

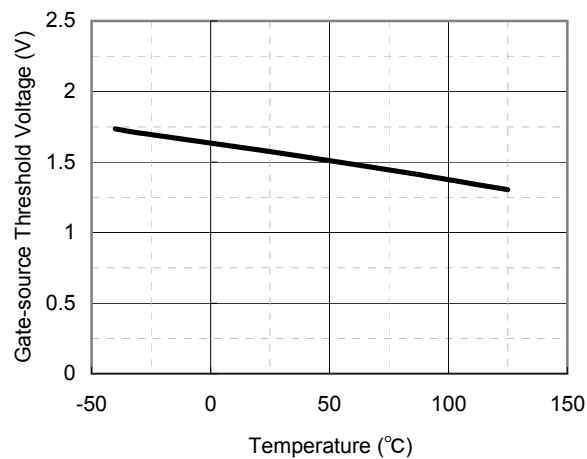


Technical Data ( reference )

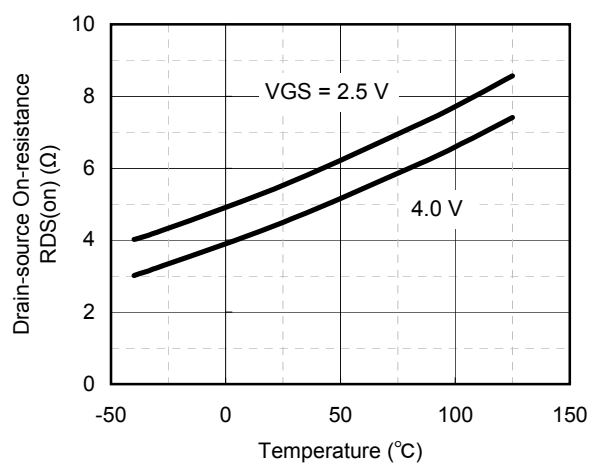


Technical Data ( reference )

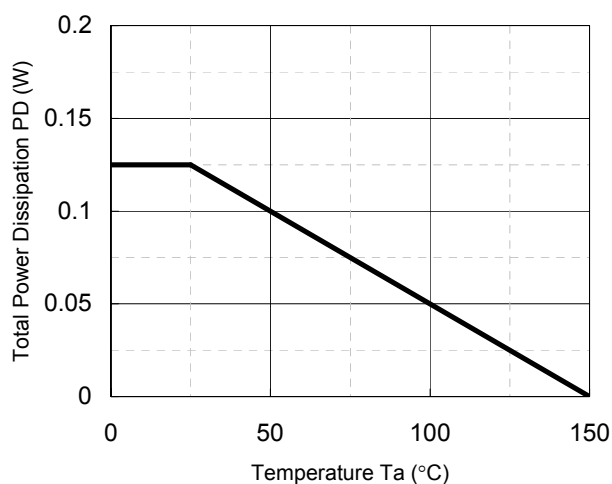
V<sub>th</sub> - T<sub>a</sub>



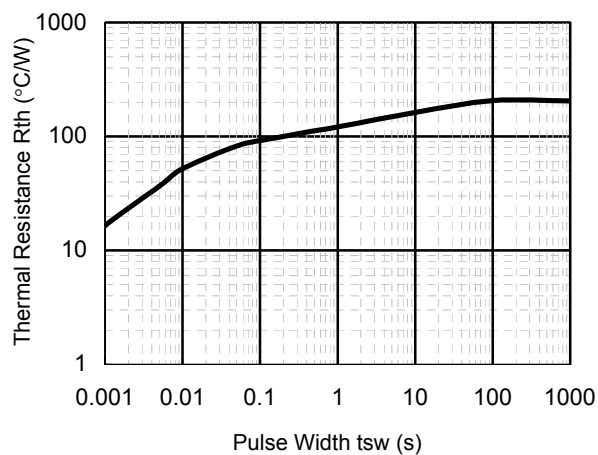
R<sub>DS(on)</sub> - T<sub>a</sub>



P<sub>D</sub> - T<sub>a</sub>



R<sub>th</sub> - t<sub>sw</sub>

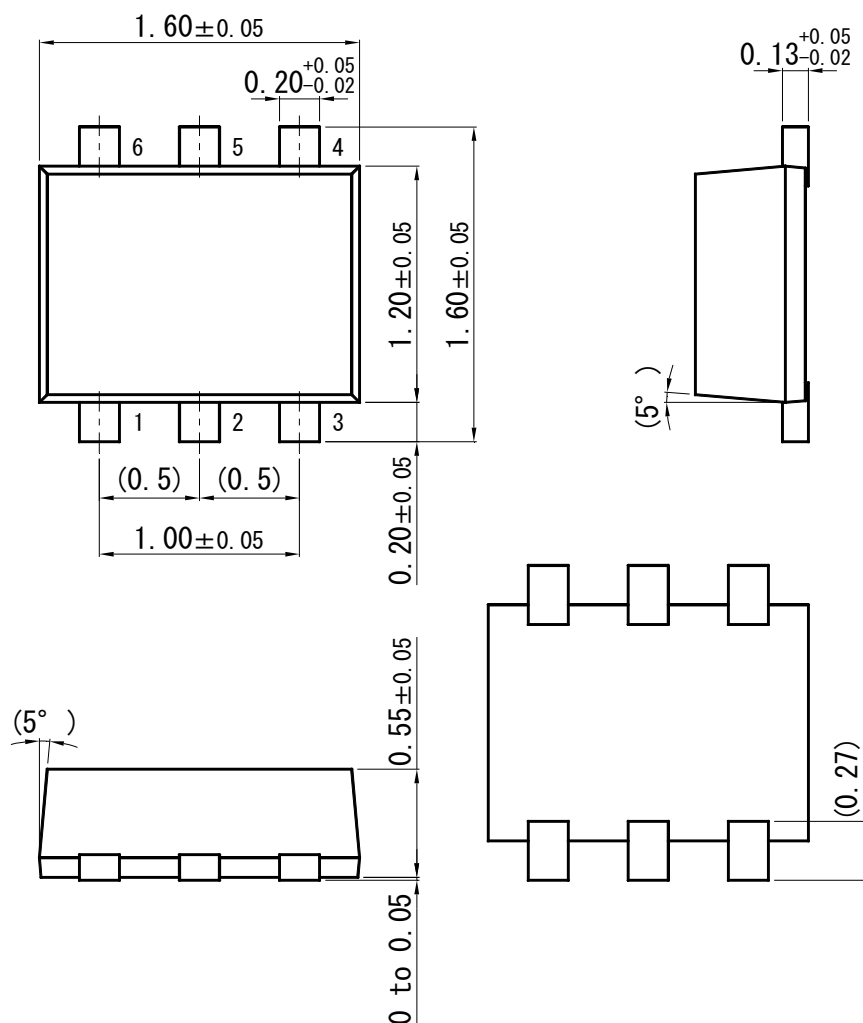


**Panasonic**

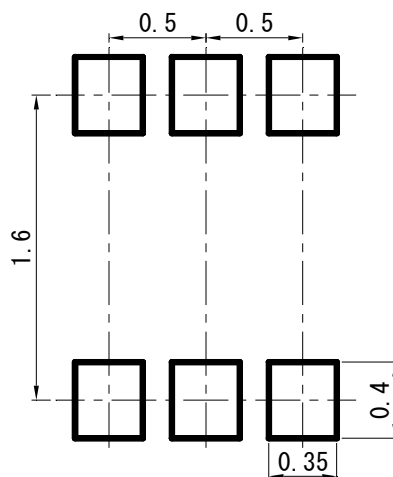
MOS FET  
FC6946010R

SSMini6-F3-B

Unit: mm



■ Land Pattern (Reference) (Unit : mm)



**Request for your special attention and precautions in using the technical information and  
semiconductors described in this book**

- (1) If any of the products or technical information described in this book is to be exported or provided to non-residents, the laws and regulations of the exporting country, especially, those with regard to security export control, must be observed.
- (2) The technical information described in this book is intended only to show the main characteristics and application circuit examples of the products. No license is granted in and to any intellectual property right or other right owned by Panasonic Corporation or any other company. Therefore, no responsibility is assumed by our company as to the infringement upon any such right owned by any other company which may arise as a result of the use of technical information described in this book.
- (3) The products described in this book are intended to be used for general applications (such as office equipment, communications equipment, measuring instruments and household appliances), or for specific applications as expressly stated in this book.  
Consult our sales staff in advance for information on the following applications:
  - Special applications (such as for airplanes, aerospace, automotive equipment, traffic signaling equipment, combustion equipment, life support systems and safety devices) in which exceptional quality and reliability are required, or if the failure or malfunction of the products may directly jeopardize life or harm the human body.It is to be understood that our company shall not be held responsible for any damage incurred as a result of or in connection with your using the products described in this book for any special application, unless our company agrees to your using the products in this book for any special application.
- (4) The products and product specifications described in this book are subject to change without notice for modification and/or improvement. At the final stage of your design, purchasing, or use of the products, therefore, ask for the most up-to-date Product Standards in advance to make sure that the latest specifications satisfy your requirements.
- (5) When designing your equipment, comply with the range of absolute maximum rating and the guaranteed operating conditions (operating power supply voltage and operating environment etc.). Especially, please be careful not to exceed the range of absolute maximum rating on the transient state, such as power-on, power-off and mode-switching. Otherwise, we will not be liable for any defect which may arise later in your equipment.  
Even when the products are used within the guaranteed values, take into the consideration of incidence of break down and failure mode, possible to occur to semiconductor products. Measures on the systems such as redundant design, arresting the spread of fire or preventing glitch are recommended in order to prevent physical injury, fire, social damages, for example, by using the products.
- (6) Comply with the instructions for use in order to prevent breakdown and characteristics change due to external factors (ESD, EOS, thermal stress and mechanical stress) at the time of handling, mounting or at customer's process. When using products for which damp-proof packing is required, satisfy the conditions, such as shelf life and the elapsed time since first opening the packages.
- (7) This book may be not reprinted or reproduced whether wholly or partially, without the prior written permission of our company.



**Стандарт  
Электрон  
Связь**

Мы молодая и активно развивающаяся компания в области поставок электронных компонентов. Мы поставляем электронные компоненты отечественного и импортного производства напрямую от производителей и с крупнейших складов мира.

Благодаря сотрудничеству с мировыми поставщиками мы осуществляем комплексные и плановые поставки широчайшего спектра электронных компонентов.

Собственная эффективная логистика и склад в обеспечивает надежную поставку продукции в точно указанные сроки по всей России.

Мы осуществляем техническую поддержку нашим клиентам и предпродажную проверку качества продукции. На все поставляемые продукты мы предоставляем гарантию .

Осуществляем поставки продукции под контролем ВП МО РФ на предприятия военно-промышленного комплекса России , а также работаем в рамках 275 ФЗ с открытием отдельных счетов в уполномоченном банке. Система менеджмента качества компании соответствует требованиям ГОСТ ISO 9001.

Минимальные сроки поставки, гибкие цены, неограниченный ассортимент и индивидуальный подход к клиентам являются основой для выстраивания долгосрочного и эффективного сотрудничества с предприятиями радиоэлектронной промышленности, предприятиями ВПК и научно-исследовательскими институтами России.

С нами вы становитесь еще успешнее!

**Наши контакты:**

**Телефон:** +7 812 627 14 35

**Электронная почта:** [sales@st-electron.ru](mailto:sales@st-electron.ru)

**Адрес:** 198099, Санкт-Петербург,  
Промышленная ул, дом № 19, литера Н,  
помещение 100-Н Офис 331