

Clockless Link™

Serial Interface Transceiver LSI

BU17074KV
General Description

BU17074KV supports parallel data transmission by ROHM's original CDR (Clock Data Recovery) technology. This chip supports transmitter feature and receiver feature alternatively.

BU17074KV transmits or receives 24bit RGB video data and 3bit DE/Vsync/Hsync signals via one pair Clockless Link™.

Features

- High-speed differential serial interface (Maximum 2.7Gbps)
- No need of lock condition signal or reset signal between transmitter and receiver. (Only differential signals)
- Low EMI transmission by original DC balance protocol and scrambling.
- Selectable 2 modes of CMOS parallel output current. (Receiver Mode)
- The internal filter reduces an image disturbance. This is effective for the external noise that affects differential wire.

Applications

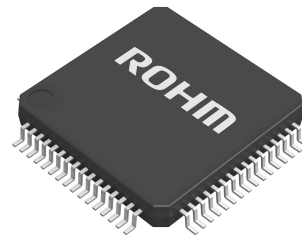
- LCD
- Image sensor

Key Specifications

- | | |
|--------------------------------|--------------------|
| ■ 3.3V voltage range: | 2.3 to 3.6 V |
| ■ I/O voltage range: | 2.3 to 3.6 V |
| ■ Clock frequency range: | 20M to 75M Hz |
| ■ Transmission data rate: | 0.72G to 2.70 Gbps |
| ■ Effective throughput: | 0.56G to 2.10 Gbps |
| ■ Operating temperature range: | -40 to +85 °C |

Package

VQFP64

 W(Typ.) x D(Typ.) x H(Max.)
 12.00mm x 12.00mm x 1.60mm


Block Diagram

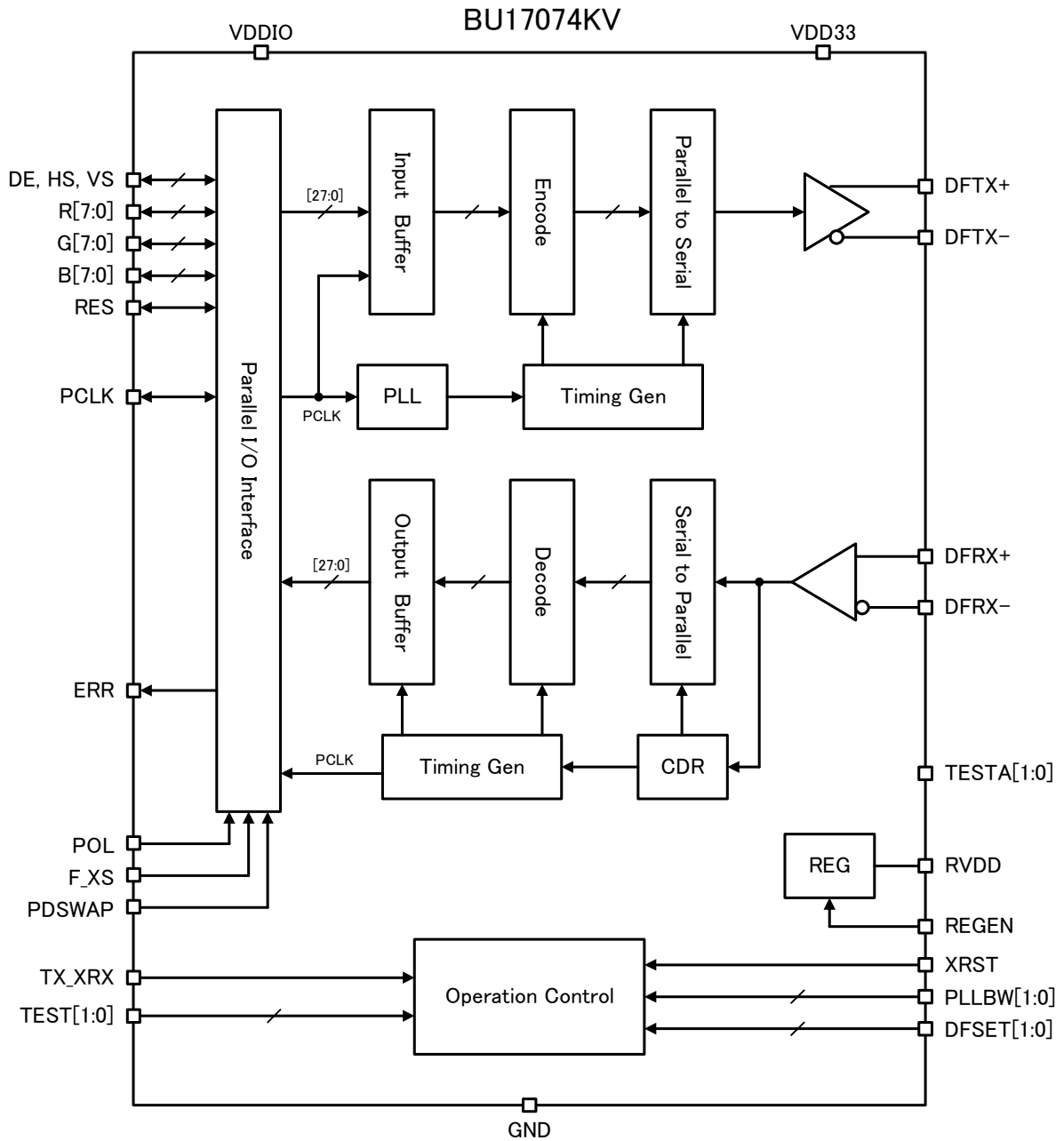


Figure 1. Block Diagram

Typical Application Circuit

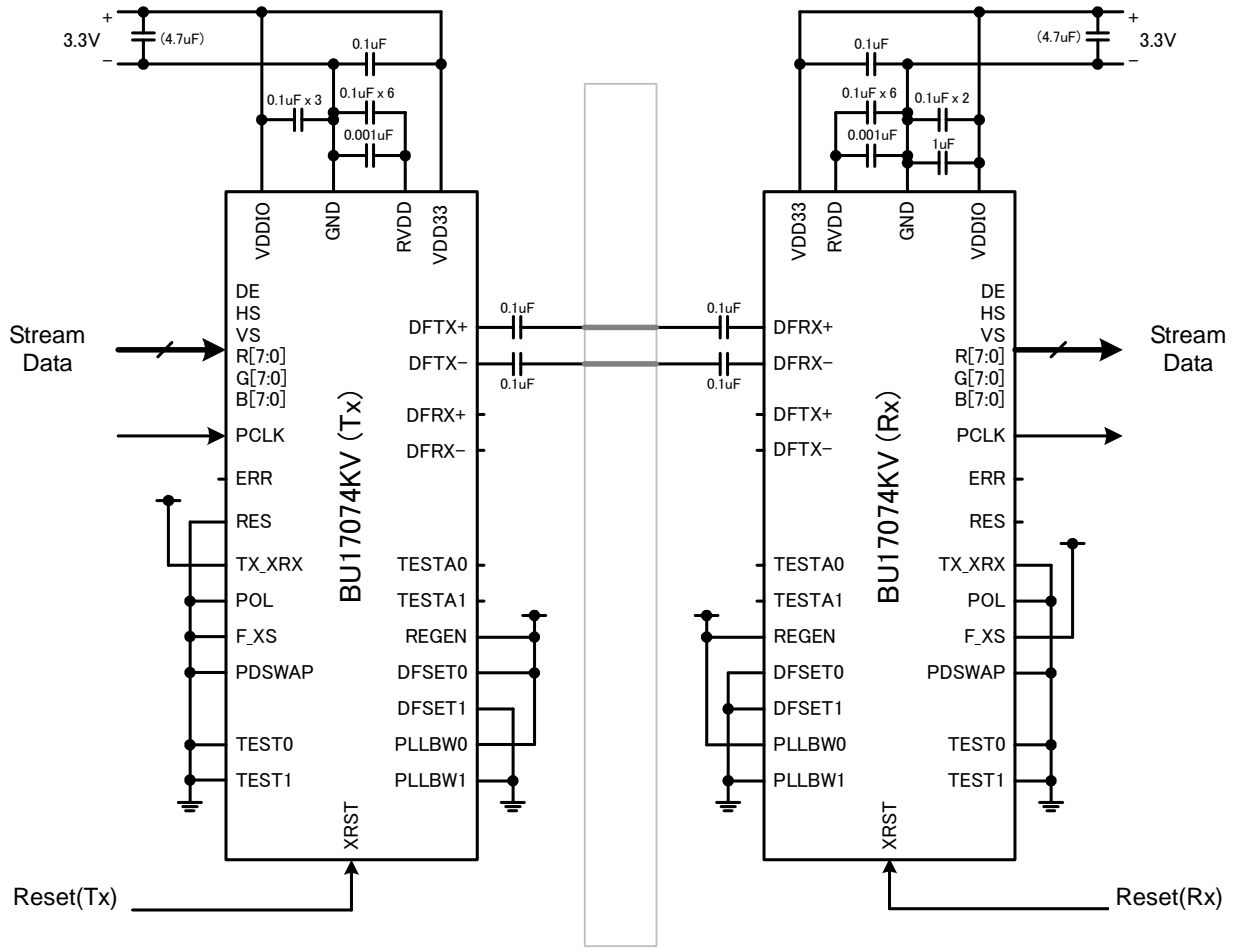
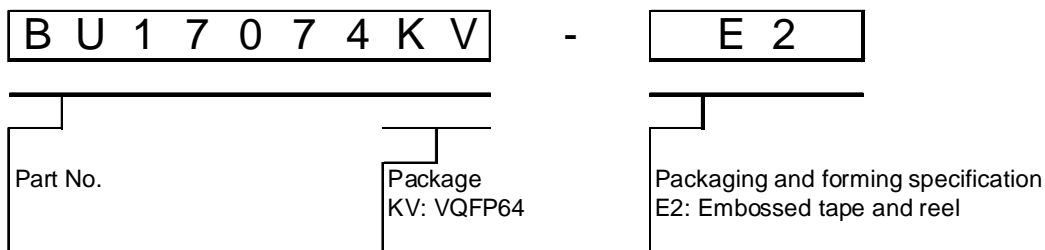


Figure 2. Typical Application Circuit

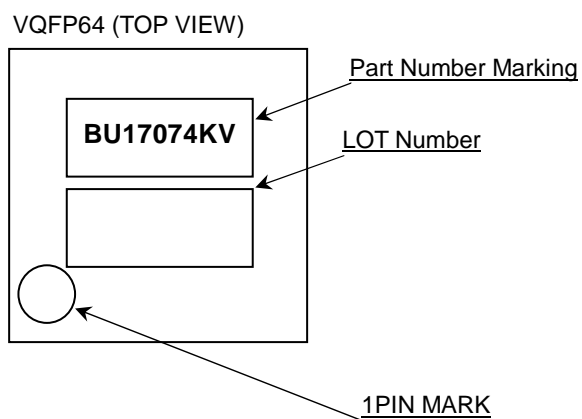
< Recommended coupling capacitors position >

| Pin | Pin No. | Transmitter PCB (Tx) | Receiver PCB (Rx) |
|-------|---------|----------------------|-------------------|
| VDD33 | 56, 57 | 0.1uF | 0.1uF |
| VDDIO | 9 | 0.1uF | 0.1uF |
| | 25 | 0.1uF | 1uF |
| | 41 | 0.1uF | 0.1uF |
| RVDD | 2 | 0.1uF | 0.1uF |
| | 47 | 0.1uF | 0.1uF |
| | 54 | 0.1uFx2 | 0.1uFx2, 0.001uF |
| | 59 | 0.1uFx2, 0.001uF | 0.1uFx2 |

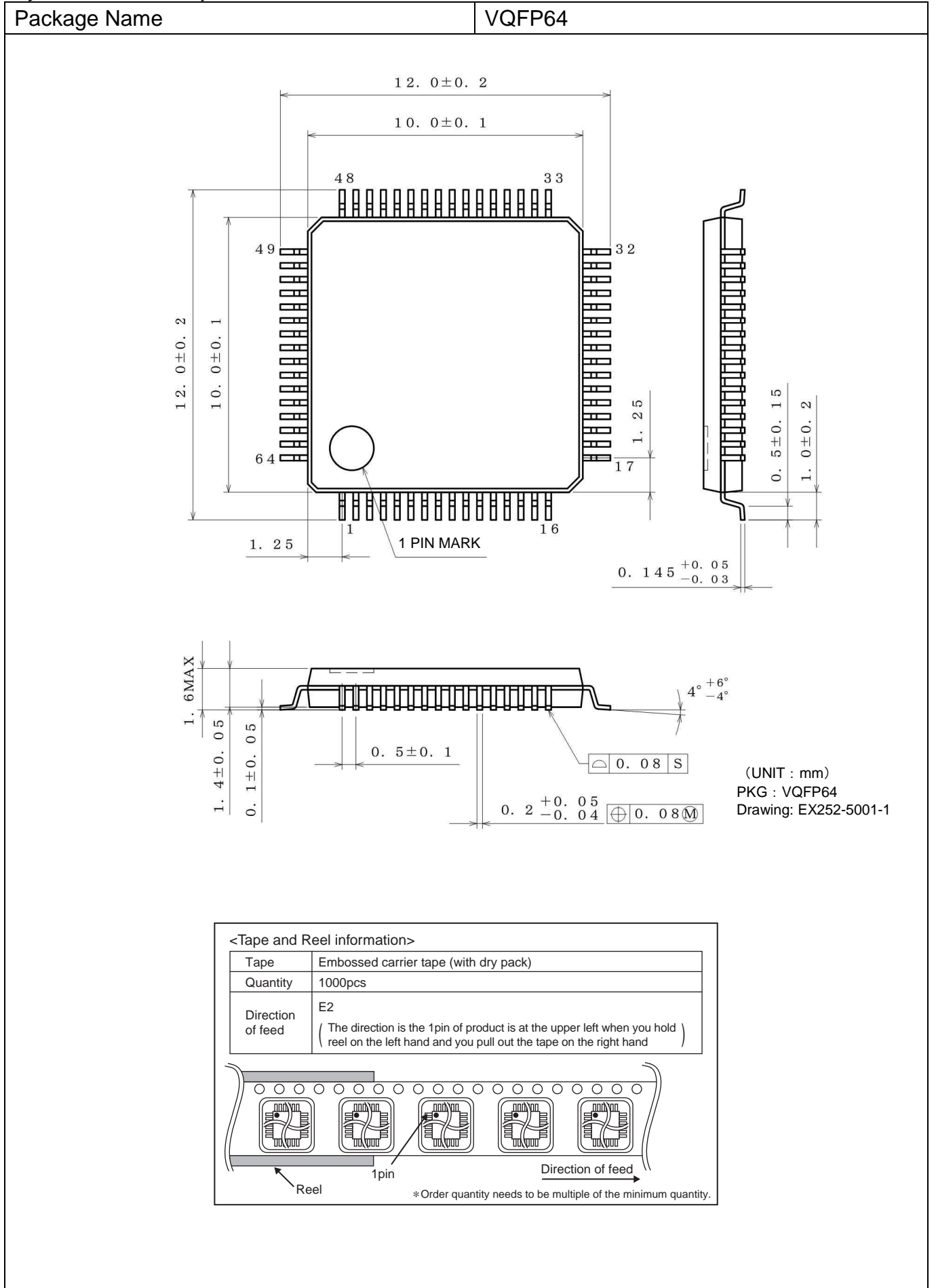
Ordering Information



Marking Diagram



Physical Dimension Tape and Reel Information



Revision History

| Date | Revision | Changes |
|-------------|----------|-------------|
| 27.Oct.2014 | 006 | New Release |

Notice

Precaution on using ROHM Products

- Our Products are designed and manufactured for application in ordinary electronic equipments (such as AV equipment, OA equipment, telecommunication equipment, home electronic appliances, amusement equipment, etc.). If you intend to use our Products in devices requiring extremely high reliability (such as medical equipment ^(Note 1), transport equipment, traffic equipment, aircraft/spacecraft, nuclear power controllers, fuel controllers, car equipment including car accessories, safety devices, etc.) and whose malfunction or failure may cause loss of human life, bodily injury or serious damage to property ("Specific Applications"), please consult with the ROHM sales representative in advance. Unless otherwise agreed in writing by ROHM in advance, ROHM shall not be in any way responsible or liable for any damages, expenses or losses incurred by you or third parties arising from the use of any ROHM's Products for Specific Applications.

(Note1) Medical Equipment Classification of the Specific Applications

| JAPAN | USA | EU | CHINA |
|-----------|-----------|------------|-----------|
| CLASS III | CLASS III | CLASS II b | CLASS III |
| CLASS IV | | CLASS III | |

- ROHM designs and manufactures its Products subject to strict quality control system. However, semiconductor products can fail or malfunction at a certain rate. Please be sure to implement, at your own responsibilities, adequate safety measures including but not limited to fail-safe design against the physical injury, damage to any property, which a failure or malfunction of our Products may cause. The following are examples of safety measures:
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 - Use of our Products in places where the Products are exposed to static electricity or electromagnetic waves
 - Use of our Products in proximity to heat-producing components, plastic cords, or other flammable items
 - Sealing or coating our Products with resin or other coating materials
 - Use of our Products without cleaning residue of flux (even if you use no-clean type fluxes, cleaning residue of flux is recommended); or Washing our Products by using water or water-soluble cleaning agents for cleaning residue after soldering
 - Use of the Products in places subject to dew condensation
- The Products are not subject to radiation-proof design.
- Please verify and confirm characteristics of the final or mounted products in using the Products.
- In particular, if a transient load (a large amount of load applied in a short period of time, such as pulse. is applied, confirmation of performance characteristics after on-board mounting is strongly recommended. Avoid applying power exceeding normal rated power; exceeding the power rating under steady-state loading condition may negatively affect product performance and reliability.
- De-rate Power Dissipation (Pd) depending on Ambient temperature (Ta). When used in sealed area, confirm the actual ambient temperature.
- Confirm that operation temperature is within the specified range described in the product specification.
- ROHM shall not be in any way responsible or liable for failure induced under deviant condition from what is defined in this document.

Precaution for Mounting / Circuit board design

- When a highly active halogenous (chlorine, bromine, etc.) flux is used, the residue of flux may negatively affect product performance and reliability.
- In principle, the reflow soldering method must be used on a surface-mount products, the flow soldering method must be used on a through hole mount products. If the flow soldering method is preferred on a surface-mount products, please consult with the ROHM representative in advance.

For details, please refer to ROHM Mounting specification

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1. If change is made to the constant of an external circuit, please allow a sufficient margin considering variations of the characteristics of the Products and external components, including transient characteristics, as well as static characteristics.
2. You agree that application notes, reference designs, and associated data and information contained in this document are presented only as guidance for Products use. Therefore, in case you use such information, you are solely responsible for it and you must exercise your own independent verification and judgment in the use of such information contained in this document. ROHM shall not be in any way responsible or liable for any damages, expenses or losses incurred by you or third parties arising from the use of such information.

Precaution for Electrostatic

This Product is electrostatic sensitive product, which may be damaged due to electrostatic discharge. Please take proper caution in your manufacturing process and storage so that voltage exceeding the Products maximum rating will not be applied to Products. Please take special care under dry condition (e.g. Grounding of human body / equipment / solder iron, isolation from charged objects, setting of Ionizer, friction prevention and temperature / humidity control).

Precaution for Storage / Transportation

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 - [b] the temperature or humidity exceeds those recommended by ROHM
 - [c] the Products are exposed to direct sunshine or condensation
 - [d] the Products are exposed to high Electrostatic
2. Even under ROHM recommended storage condition, solderability of products out of recommended storage time period may be degraded. It is strongly recommended to confirm solderability before using Products of which storage time is exceeding the recommended storage time period.
3. Store / transport cartons in the correct direction, which is indicated on a carton with a symbol. Otherwise bent leads may occur due to excessive stress applied when dropping of a carton.
4. Use Products within the specified time after opening a humidity barrier bag. Baking is required before using Products of which storage time is exceeding the recommended storage time period.

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QR code printed on ROHM Products label is for ROHM's internal use only.

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