

1. Description

The HK818 consists of a high-output GaAlAs light-emitting diode optically coupled to a photodiode. The device is packaged in a 4-pin DIP/SMD package. The HK818 corresponds to the transmission rate of 120 kbps, which is much faster than general-purpose transistor coupler.

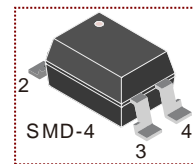
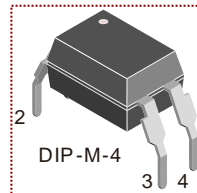
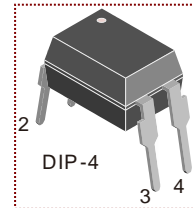
2. Features

- High bit rate: 120kbps
- High isolation: 5000Vrms
- Guaranteed performance temperature: -55-100°C
- RoHS compliant

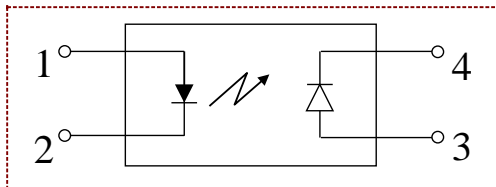
3. Applications

- Data communication
- Home appliances

4. Package Outlines



5. Schematic & Pin Configuration



| | | |
|-------------------|---------|-----------|
| Pin Configuration | | |
| 1 | Anode | 4 Cathode |
| 2 | Cathode | 3 Anode |

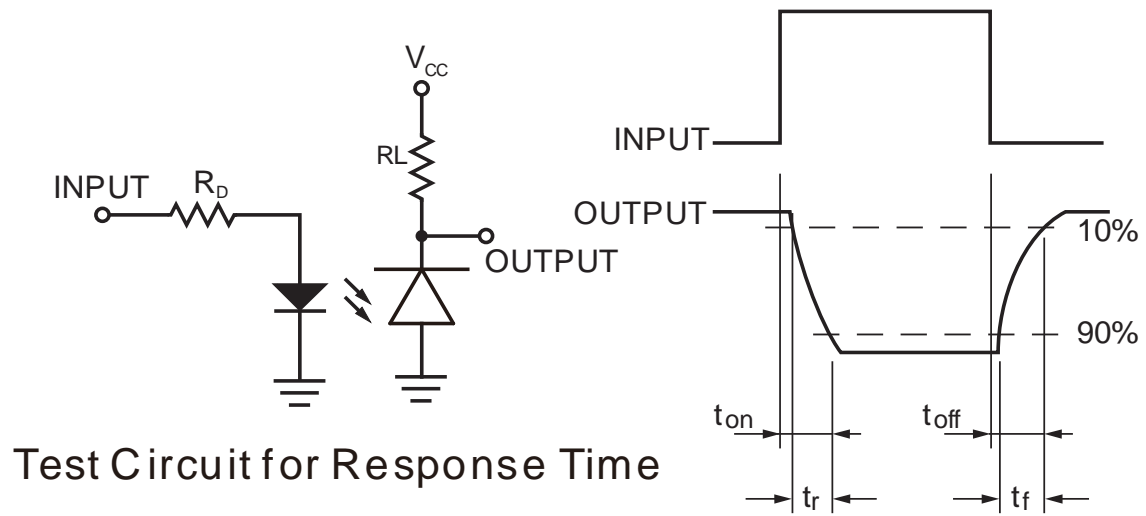
6. Absolute Maximum Ratings (Ta=25°C)

| Parameter | | Symbol | Rating | Unit |
|-------------------------|-------------------|-----------|----------|------------------|
| Input | Forward Current | I_F | 50 | mA |
| | Reverse Voltage | V_R | 6 | V |
| | Power Dissipation | P_I | 70 | mW |
| Output | Power Dissipation | P_O | 20 | mW |
| | Reverse Current | I_{OR} | 50 | mA |
| | Reverse Voltage | V_{OR} | 80 | V |
| Total Power Dissipation | | P_{tot} | 120 | mW |
| Isolation Voltage | | V_{iso} | 5000 | V _{rms} |
| Operating Temperature | | T_{opr} | -55~+110 | °C |
| Storage Temperature | | T_{stg} | -55~+125 | °C |
| Soldering Temperature | | T_{sol} | 260 | °C |

7. Electro-optical Characteristics (Ta=25°C)

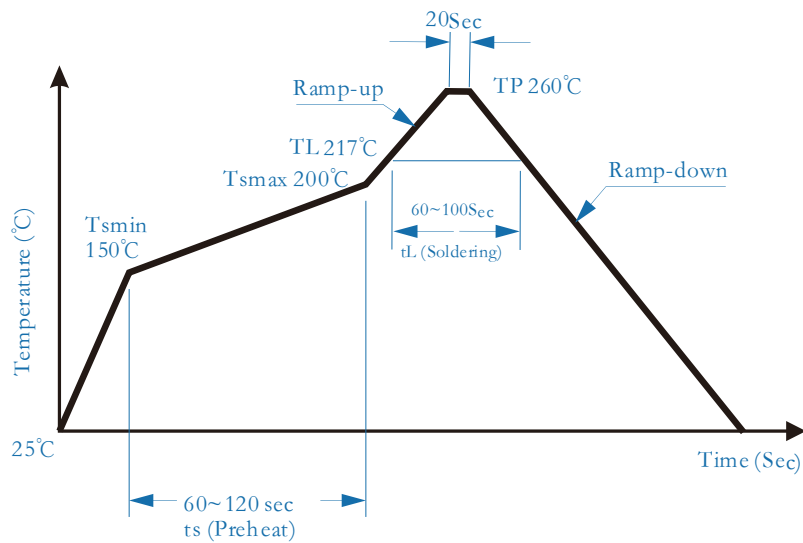
| Parameter | | Symbol | Condition | Min. | Typ. | Max. | Unit |
|--------------------------|----------------------|-----------|---|--------------------|------|------|------|
| Input | Forward Voltage | V_{IF} | $I_F=3mA$ | - | 1.4 | 1.6 | V |
| | Reverse Current | I_{IR} | $V_R=5V$ | - | - | 10 | μA |
| Output | Dark Current | I_D | $V_{CA}=70V$ | - | - | 2 | μA |
| | Breakdown Voltage | V_{OR} | $I_C=0.1mA, I_F=0$ | 80 | - | - | V |
| | Forward Voltage | V_{OF} | $I_A=1mA, I_F=0$ | - | 0.6 | 1 | V |
| Transfer Characteristics | Output Current | I_O | $I_F=3mA, V_{CA}=5V$ | - | 120 | - | μA |
| | Isolation Resistance | R_{ISO} | DC500V, 40~60%R.H. | 1×10^{12} | - | - | Ω |
| | Floating Capacitance | C_f | $V=0, f=1MHz$ | - | 0.6 | 1.0 | pF |
| | Rise Time | T_r | $V_{CC}=5V, I_F=3mA,$ $f=120KHz R_L=35K\Omega$ | - | 1.5 | 2.5 | μs |
| | Fall Time | T_f | $V_{CC}=5V, I_F=3mA,$ $f=120KHz R_L=35K\Omega$ | - | 1.5 | 2.5 | μs |
| | Turn On Time | T_{on} | $V_{CC}=5V, I_F=3mA,$ $f=120KHz R_L=35K\Omega$ | - | 1.9 | 3 | μs |
| | Turn Off Time | T_{off} | $V_{CC}=5V, I_F=3mA,$ $f=120KHz R_L=35K\Omega$ | - | 1.9 | 3 | μs |

8. Test Circuits



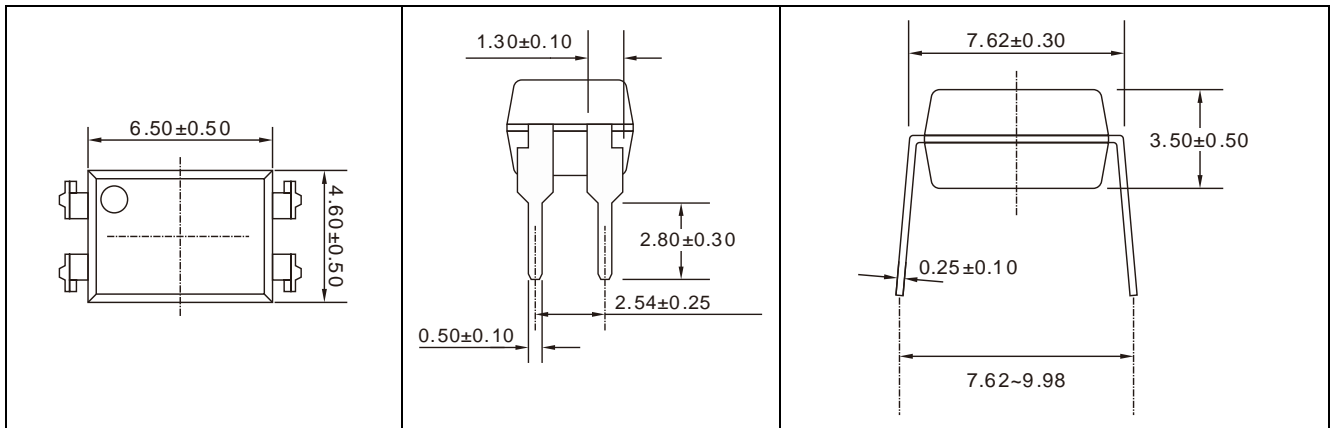
Test Circuit for Response Time

9. Solder Reflow Profile

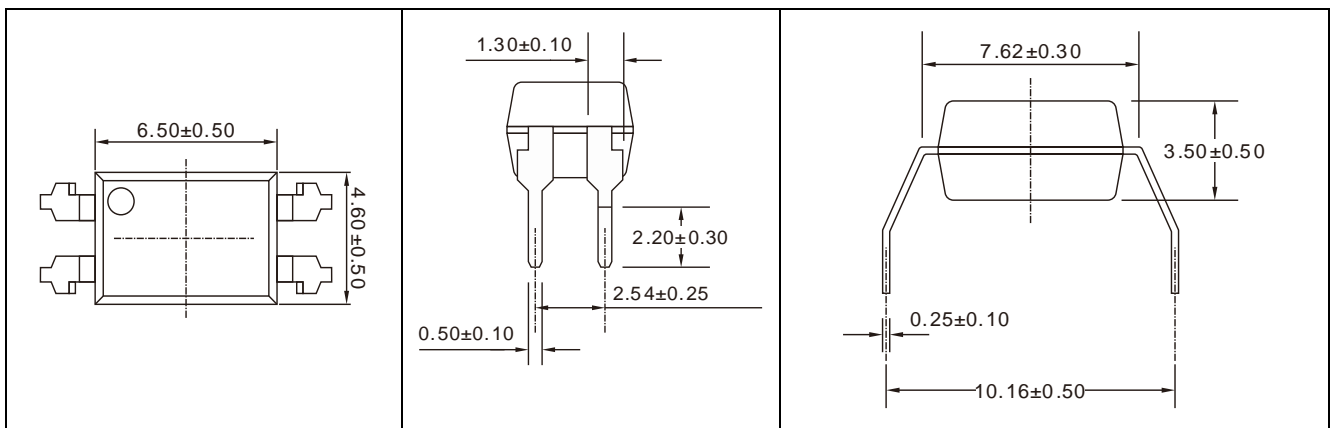


10. Outline Dimensions

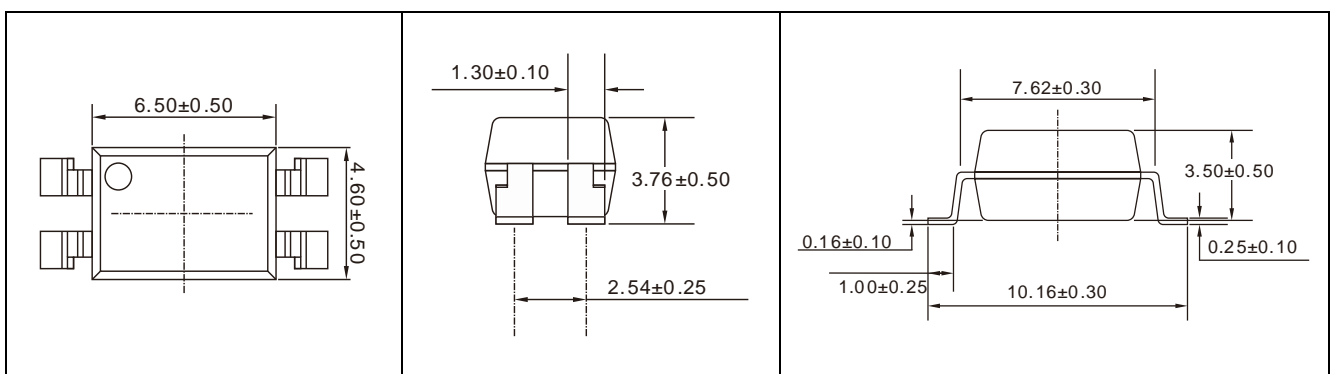
Unit: mm



DIP-4



DIP-M-4



SMD-4

11. Order Code

HK818-ZV-WY U

ZV = Lead Frame (Cu=copper, Fe=iron)

W = Package Type (D=DIP, S=SMD, M=DIP-M)

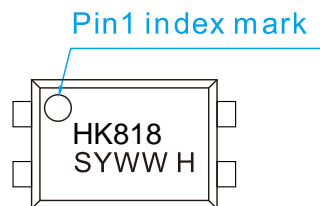
Y = Epoxy (H= halogen-free, L=with halogen)

U = Factory Code (F~Z or none)

For example,

| Order Code | Description | Marking |
|---------------|---|---------|
| HK818-Fe-DL T | Classification C, Iron lead frame, DIP, Halogen, by Factory T | HK818 |
| HK818-Fe-DL | Classification C, Iron lead frame, DIP, Halogen, by Factory SMC | HK818 |
| HK818-Fe-ML | Classification C, Iron lead frame, DIP-M, Halogen, by Factory SMC | HK818 |
| HK818-Fe-SL | Classification C, Iron lead frame, SMD, Halogen, by Factory SMC | HK818 |

Marking



- “S” denotes subsection SEQUENCE code (A~Z); “Y” denotes production YEAR; “WW” denotes production WEEK.
- “H” denotes Halogen-free; otherwise are blank, denotes with Halogen.

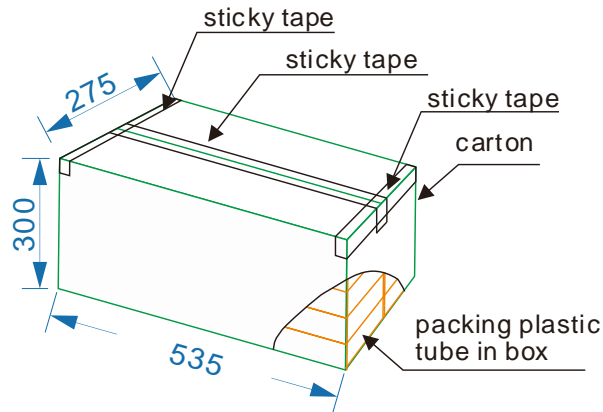
12. Packing

9.1 Summary table

| Package Type | Packing Form | Quantity per Reel/Tube | Quantity per Box | Quantity per Carton | Antistatic Bag Specification | Box Specification | Carton Specification | Note |
|--------------|------------------------------|------------------------|------------------|---------------------|------------------------------|-------------------|----------------------|------------------------------------|
| SMD-4 | Reel (ϕ 330mm Blue) | 2k pcs/reel | 2 reels /box | 10 boxes /ctn | 380*380mm | 340*60*340mm | 620*360*365 mm | Guard band 200mm min. |
| DIP-4 | Tube (500*12*11mm) | 100pcs /tube | 50 tubes/box | 10 boxes /ctn | NA | 525*128*56mm | 535*275*300 mm | Endplug (blue) and |
| DIP-M-4 | Tube (500*13*11mm) | 100pcs /tube | 50 tubes/box | 10 boxes /ctn | NA | 525*136*58mm | 535*295*310 mm | Endplug (white) keep the direction |

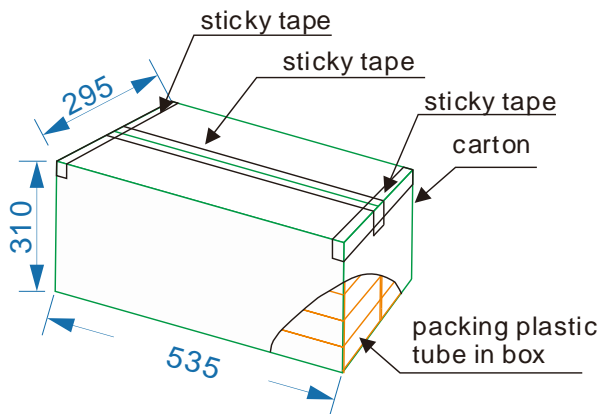
9.2 DIP-4 (tube)

- 1) Qty/ctn: 50000pcs
- 2) Inner packing: 100pcs/tube, 50 tubes/box, antistatic tube, indication of trade mark and antistatic
- 3) Schematic:



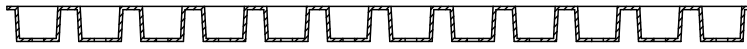
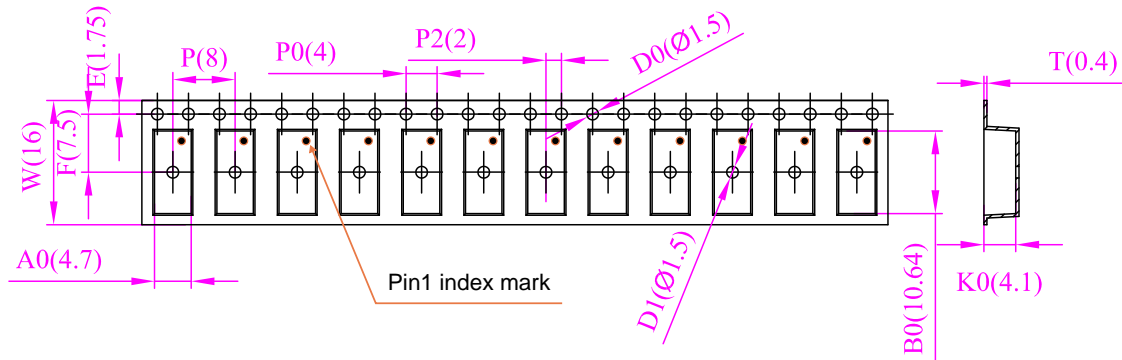
9.3 DIP-M-4 (tube)

- 4) Qty/ctn: 50000pcs
- 5) Inner packing: 100pcs/tube, 50 tubes/box, antistatic tube, indication of trade mark and antistatic
- 6) Schematic:



9.4 SMD-4 (Tape & Reel)

- 7) Qty/ctn: 40000 pcs
- 8) Inner packing: 2000pcs/reel, 2reels/box
- 9) Schematic:



| | | | | | | |
|----------------------|---|--|---|--|--|--|
| Dimension No. | W | A0 | B0 | K0 | P | F |
| Dimension (mm) | 16.00 ^{+0.30} _{-0.10} | 4.70 ^{+0.10} _{-0.10} | 10.64 ^{+0.10} _{-0.10} | 4.10 ^{+0.10} _{-0.10} | 8.00 ^{+0.10} _{-0.10} | 7.5 ^{+0.10} _{-0.10} |
| Dimension No. | E | D0 | D1 | P0 | P2 | T |
| Dimension (mm) | 1.75 ^{+0.10} _{-0.10} | 1.50 ^{+0.10} _{-0.00} | 1.50 ^{+0.10} _{-0.00} | 4.00 ^{+0.10} _{-0.10} | 2.00 ^{+0.10} _{-0.10} | 0.40 ^{+0.05} _{-0.05} |

CRM ICBG (Wuxi) Co., Ltd.

Headquarters address: 180-6 Linghu Avenue, Wuxi, Jiangsu, CHINA. Tel: 0510-85810118

The Branch Address of Shanghai : No. 12, Lane 299, Wenshui Road, Shibei Zhihuiyuan, Jing 'an District, Shanghai. Tel: 021-60738989

The Branch Address of Shenzhen : Building A, 8 / F, Tianxiang Building, Tian 'an Digital City, Chegongmiao, Futian District, Shenzhen City, Guangdong Province. Tel: 0755-83572722

Company sales contact point:

East China Office:

180-6 Linghu Dadao, Wuxi City, Jiangsu Province, China Tel: 0510-85810118

Shenzhen Office:

Room 5006, 5 / F, West Building of Veteran Heng Fang Industrial City, Xingye Road, Xixiang Street, Baoan District, Shenzhen Tel: 0755-83572766

Guangzhou Office:

3507, Lihe Commercial Center, 98 Tongxing Road, Guzhen Town, Zhongshan City, Guangdong Province

Taiwan Office:

Building A, 8 / F, Tianxiang Building, Tian 'an Digital City, Chegongmiao, Futian District, Shenzhen City, Guangdong Province Tel: 0755-83572722

Note:

Please read the following information carefully before using CRM's products. And please often contact the relevant departments of CRM to obtain the latest information, because CRM's products are constantly updated and improved. The information in this document is subject to change without notice.

This information is for reference only, and CRM will not be responsible for any losses arising therefrom. CRM does not assume any responsibility for any infringement of third party patents or other rights caused during use.

CRM ICBG (WUXI) CO., LTD. has the right to make corrections, enhancements, improvements, and other changes to its semiconductor products, services and to discontinue any product or service. Buyers should obtain the latest relevant information before placing orders and verifying that such information is up-to-date and complete. All semiconductor products (also referred to herein as "components") are sold subject to CRM ICBG (WUXI) CO., LTD.' s terms, and conditions of sale supplied at the time of order acknowledgment.

CRM ICBG (WUXI) CO., LTD. guarantees that the performance of its components to the specifications applicable at the time of sale, by the warranty in CRM ICBG (WUXI) CO., LTD.' s terms and conditions of sale of semiconductor products. Testing and other quality control techniques are used to the extent CRM ICBG (WUXI) CO., LTD. deems necessary to support this warranty. Except that mandated by applicable law, testing of all parameters of each component is not necessary.

CRM ICBG (WUXI) CO., LTD. assumes no obligation for application assistance or the design of buyers' products. Buyers shall be responsible for their products and applications using CRM ICBG (WUXI) CO., LTD. components. To minimize the risks associated with buyers' products and applications, Buyers should provide adequate design and operational safeguard.

The products of CRM ICBG (WUXI) CO., LTD. have not obtained the licenses for using in FDA Class III (or similar life-critical medical equipment) unless authorized officers of all parties have come to a particular agreement specially on governing the use in this class. Only those CRM ICBG (WUXI) CO., LTD. components which CRM ICBG (WUXI) CO., LTD. has specifically designated as military-grade or "enhanced plastic" are designed and intended for use in military/aerospace applications or environments. Buyers acknowledge and agree that any military or aerospace use of CRM ICBG (WUXI) CO., LTD. components that have not been so designated is solely at the Buyer's risk, and Buyer is solely responsible for compliance with all legal and regulatory requirements in connection with such use.

Unless CRM ICBG (WUXI) CO., LTD. has specifically designated certain components which meet ISO/TS16949 requirements, mainly for automotive use, CRM ICBG (WUXI) CO., LTD. will not be responsible for any failure of such components to meet such requirements.