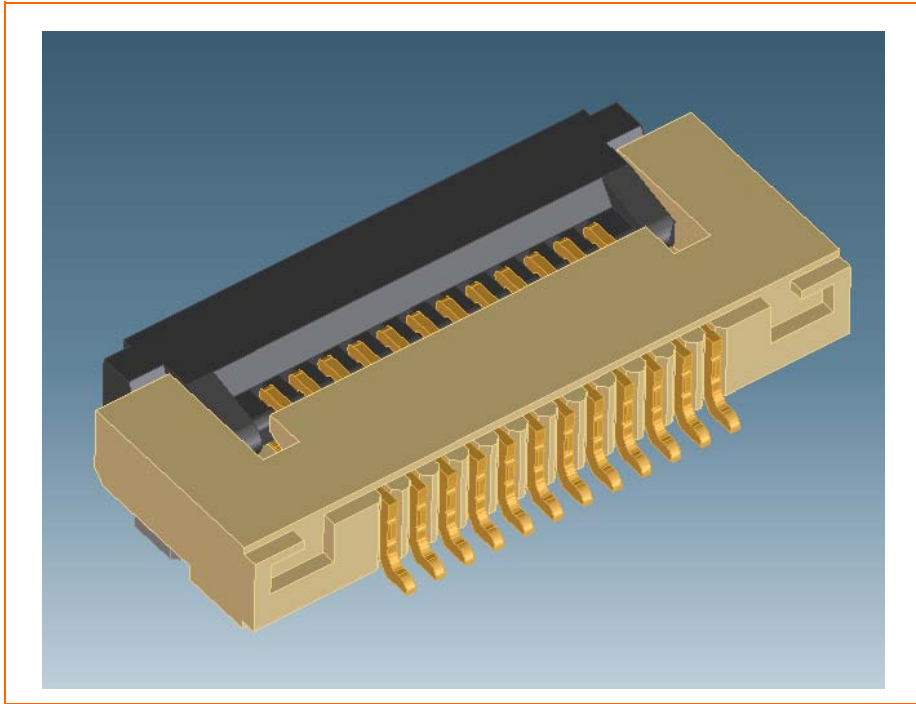


Product Specification



深圳臺華達科技有限公司

SHENZHEN THD Electronics Co., Ltd.



Product.No

THD0515 – xxCL – XX

Pitch=0.50mm,H=1.5 mm FPC Connector (Front-Flip Lower Contact)

| | |
|------|-------------|
| A | Release |
| Rev. | Description |

Approved Signatures

| | |
|--------------------|-------------------|
| ■Prepared By : JIM | ■Date: 2012.05.24 |
| ■Checked By : JIM | ■Date: 2012.05.24 |
| ■Approved By : 黄德进 | ■Date: 2012.05.24 |

■ Scope

This specification covers the 0.5 mm Pitch FPC Connector THD0515 series.

■ Ordering information

THD0515 - xx CL - XX

① ② ③ ④

| | | | |
|---|---------------------------------|---|---|
| ① | Series name : THD0515 | ④ | Plating : GF= 1μ"~3μ" Gold Flash G3= 3μ" Gold over Nickel G5= 5μ" Gold over Nickel SN= Tin(Lead Free) over Nickel |
| ② | Number of contacts : 4 TO 60 | | |
| ③ | Contact type : CL:Lower contact | | |

■ Rating

| Item | Standard |
|-----------------------------|---|
| Voltage Rating(Max.) | 50V AC |
| Current Rating(Max.) | 0.5A DC |
| Operating Temperature Range | -55°C ~ +85°C (Including terminal temperature rise) |

■ Material

| Housing | Actuator | Terminal | Solder pin | Plating |
|-----------------|-----------------|--------------|--------------|--------------------|
| L.C.P (UL94V-0) | L.C.P (UL94V-0) | Copper alloy | Copper alloy | 1μ"~3μ" Gold Flash |
| Color : White | Color : Black | | | |

■ Performance

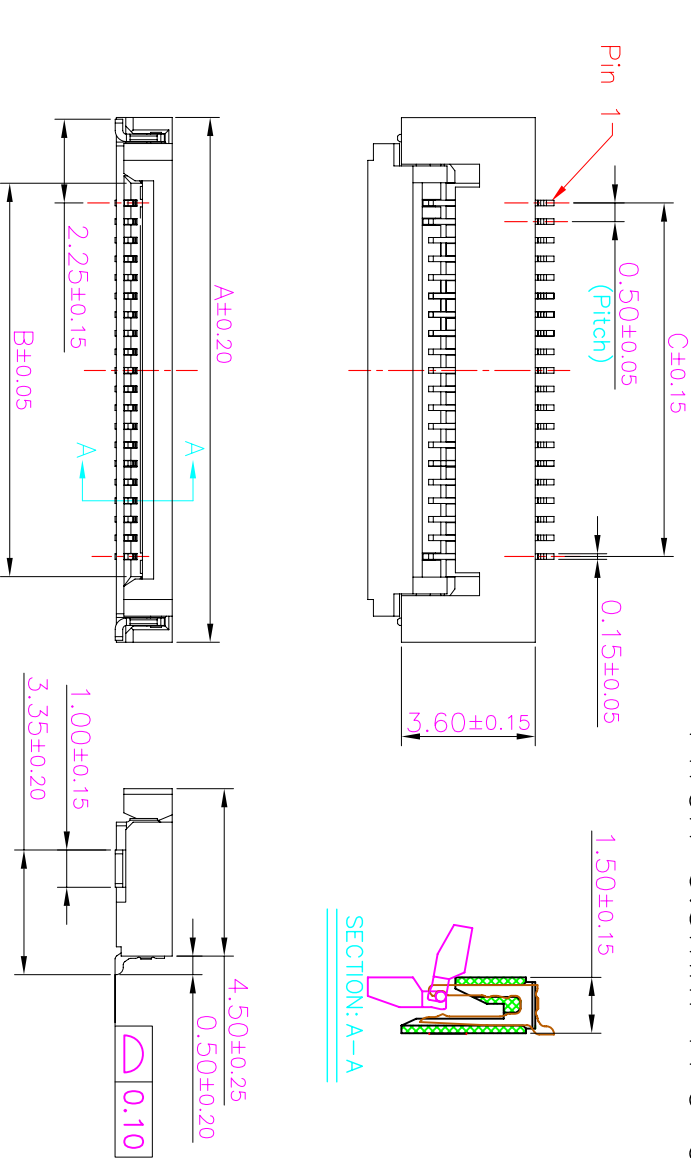
| Item | Test Condition | Specification | |
|--------------------------|---|-------------------------------|-------------|
| Contact Resistance | Mate applicable FPC and measure by dry circuit, 20mV Max, 1mA. | 100 mΩ Max. | |
| Insulation Resistance | Mate applicable FPC and apply 500V DC between adjacent terminal or ground. | 50 MΩ Min. | |
| Dielectric Strength | Mate applicable FPC, apply 250V AC(rms) for 1 minute between adjacent terminal or ground. | No Breakdown | |
| FPC Retention Force | Insert the actuator, pull the FPC at a rate of 25±3mm per minute. | Per pin x 0.15N Min. | |
| Terminal Retention Force | Apply axial pull out force at the rate of 25±3 mm/minute on the terminal assembled in the housing. | Per pin x 0.06Kgf {0.6N} Min. | |
| Vibration | Mate connectors and subject to the following vibration conditions, for period of 2 hours in each of 3 mutually perpendicular axes, passing DC 1mA during the test. Amplitude : 1.5mm P-P Frequency : 10~55~10 Hz in 1 minute. Duration : 2 hours in each of X,Y,Z axes. | Appearance | No Damage |
| | | Contact Resistance | 100 mΩ Max. |
| | | Discontinuity | 1 μsec Max. |
| Shock | Mate applicable FPC and subject to the following shock conditions. 3 times of shocks shall be applied for each 6 directions along 3 mutually perpendicular axes, passing DC 1 mA current during the test. Peak value : 490m/s ² {50G} | Appearance | No Damage |
| | | Contact Resistance | 100 mΩ Max. |
| | | Discontinuity | 1 μsec Max. |
| Salt Spray | Mate applicable FPC and expose to the following salt mist conditions. Upon completion of the exposure period, salt deposits shall be removed by a gentle wash or dip in running water, after which the specified measurements shall be performed. NaCl solution Concentration : 5 ± 1% Spray time : 48 ± 4 hours Ambient temperature : 35 ± 2°C | Appearance | No Damage |
| | | Contact Resistance | 100 mΩ Max. |

| Item | Test Condition | Specification | |
|-------------------------|---|-----------------------|---|
| Heat Resistance | Mate applicable FPC and expose to 85±2°C for 96 hours. Upon completion of the exposure period, the test specimens shall be conditioned at ambient room conditions for 1 to 2 hours, after which the specified measurements shall be performed. | Appearance | No Damage |
| | | Contact Resistance | 100 mΩ Max. |
| Cold Resistance | Mate applicable FPC and expose to -40±2°C for 96 hours. Upon completion of the exposure period, the test specimens shall be conditioned at ambient room conditions for 1 to 2 hours, after which the specified measurements shall be performed. | Appearance | No Damage |
| | | Contact Resistance | 100 mΩ Max. |
| Humidity | Mate applicable FPC and expose to 60 ± 2°C, relative humidity 90 to 95% for 96 hours. Upon completion of the exposure period, the test specimens shall be conditioned at ambient room conditions for 1 to 2 hours, after which the specified measurements shall be performed. | Appearance | No Damage |
| | | Contact Resistance | 100 mΩ Max. |
| | | Dielectric Strength | No Breakdown |
| | | Insulation Resistance | 50 MΩ Min. |
| Temperature Rise | Mate applicable FPC and measure the temperature rise of contact when the maximum AC rated current is passed. | Temperature rise | 30°C Max. |
| Temperature Cycling | Mate applicable FPC and subject to the following conditions for 5 cycles. Upon completion of the exposure period, the test specimens shall be conditioned at ambient room conditions for 1 to 2 hours, after which the specified measurements shall be performed. 1 cycle a) -55±3°C 30minutes b) +85±3°C 30minutes (Transit time shall be with in 3 minutes) | Appearance | No Damage |
| | | Contact Resistance | 100 mΩ Max. |
| Solderability | Tip of solder tails and fitting nails into the molten solder (held at 245±5°C) up to 0.1mm from the bottom of the housing for 3±0.5 seconds. | Solder Wetting | 95% of immersed area must show no voids, pin holes. |
| Resistance to Soldering | When reflowing refer to Infrared reflow condition <u>Soldering iron method</u> 0.2mm from terminal tip and fitting nail tip. Soldering time : 5 seconds Max. Solder temperature : 370~400°C | Appearance | No Damage |

■ Recommended Temperature Profile



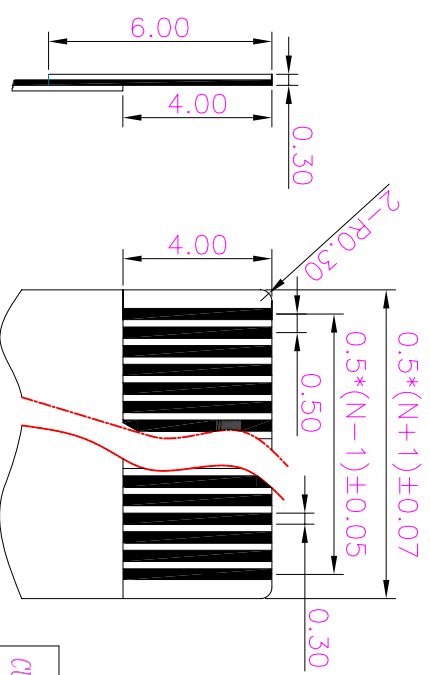
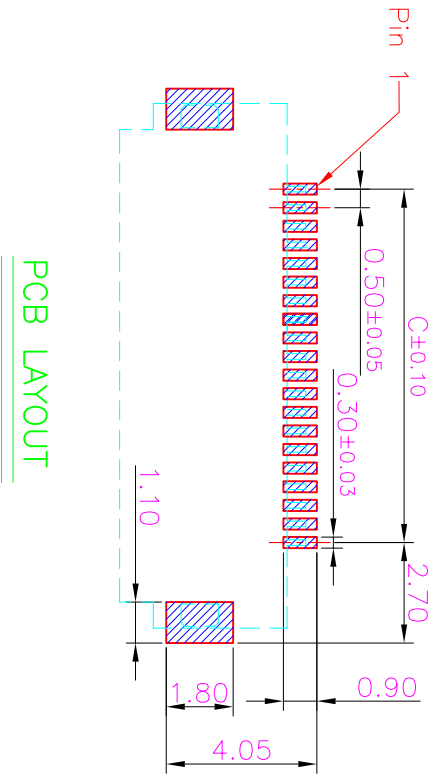
PITCH 0.5mm FPC CONNECTOR SMT TYPE



SECTION: A-A

- 1. MATERIAL
- HOUSING: LCP UL 94V-0
- ACTUATOR: LCP UL 94V-0
- CONTACTS: COPPER ALLOY
- PEG: COPPER ALLOY
- 2. PLATING:
- CONTACTS: TIN OR AU OVER NICKEL
- PEG: TIN OVER NICKEL
- 3. PART NO:
- OPERATING VOLTAGE: 50V AC, DC
- CURRENT RATING: 0.3A AC, DC
- OPERATING TEMPERATURE: $-25^{\circ}\text{C} \sim +85^{\circ}\text{C}$
- 4. PART NO:

THD0515-xxCL-xx
 LG: GOLD FLASH
 SN: TIN OVER NICKEL
 NO. OF CONTACTS: (04Pin~80Pin)



| PIN | DIM. A | DIM. B | DIM. C |
|-----|--------|--------|--------|
| 4 | 6.10 | 2.60 | 1.50 |
| 5 | 6.60 | 3.10 | 2.00 |
| 6 | 7.10 | 3.60 | 2.50 |
| 7 | 7.60 | 4.10 | 3.00 |
| 8 | 8.10 | 4.60 | 3.50 |
| 9 | 8.60 | 5.10 | 4.00 |
| 10 | 9.10 | 5.60 | 4.50 |
| 11 | 9.60 | 6.10 | 5.00 |
| 12 | 10.10 | 6.60 | 5.50 |
| 13 | 10.60 | 7.10 | 6.00 |
| 14 | 11.10 | 7.60 | 6.50 |
| 15 | 11.60 | 8.10 | 7.00 |
| 16 | 12.10 | 8.60 | 7.50 |
| 17 | 12.60 | 9.10 | 8.00 |
| 18 | 13.10 | 9.60 | 8.50 |
| 19 | 13.60 | 10.10 | 9.00 |
| 20 | 14.10 | 10.60 | 9.50 |
| 21 | 14.60 | 11.10 | 10.00 |
| 22 | 15.10 | 11.60 | 10.50 |
| 23 | 15.60 | 12.10 | 11.00 |
| 24 | 16.10 | 12.60 | 11.50 |
| 25 | 16.60 | 13.10 | 12.00 |
| 26 | 17.10 | 13.60 | 12.50 |
| 27 | 17.60 | 14.10 | 13.00 |
| 28 | 18.10 | 14.60 | 13.50 |
| 29 | 18.60 | 15.10 | 14.00 |
| 30 | 19.10 | 15.60 | 14.50 |
| 31 | 19.60 | 16.10 | 15.00 |
| 32 | 20.10 | 16.60 | 15.50 |
| 33 | 20.60 | 17.10 | 16.00 |
| 34 | 21.10 | 17.60 | 16.50 |
| 35 | 21.60 | 18.10 | 17.00 |
| 36 | 22.10 | 18.60 | 17.50 |
| 37 | 22.60 | 19.10 | 18.00 |
| 38 | 23.10 | 19.60 | 18.50 |
| 39 | 23.60 | 20.10 | 19.00 |
| 40 | 24.10 | 20.60 | 19.50 |
| 41 | 24.60 | 21.10 | 20.00 |
| 42 | 25.10 | 21.60 | 20.50 |
| 43 | 25.60 | 22.10 | 21.00 |
| 44 | 26.10 | 22.60 | 21.50 |
| 45 | 26.60 | 23.10 | 22.00 |
| 46 | 27.10 | 23.60 | 22.50 |
| 47 | 27.60 | 24.10 | 23.00 |
| 48 | 28.10 | 24.60 | 23.50 |
| 49 | 28.60 | 25.10 | 24.00 |
| 50 | 29.10 | 25.60 | 24.50 |
| 51 | 29.60 | 26.10 | 25.00 |
| 52 | 30.10 | 26.60 | 25.50 |
| 53 | 30.60 | 27.10 | 26.00 |
| 54 | 31.10 | 27.60 | 26.50 |
| 55 | 31.60 | 28.10 | 27.00 |
| 56 | 32.10 | 28.60 | 27.50 |
| 59 | 33.60 | 30.10 | 29.00 |
| 60 | 34.10 | 30.60 | 29.50 |
| 61 | 34.60 | 31.10 | 30.00 |
| 80 | 44.10 | 40.60 | 39.50 |

APPLICABLE FPC

PCB LAYOUT

| REV. | REVISIONS | CHK | DATE |
|------|-----------|-----|------|
| | | | |
| | | | |
| | | | |
| | | | |
| | | | |

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 SHENZHENSHI THD ELECTRONICS CO., LTD.

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GENERAL TOLERANCE
 UNLESS OTHERWISE SPECIFIED

±0.25
 ±0.20
 ±0.10
 ±3

XX
 XXX
 XXXX
 ANG.

DRAWN: **Kavin**
 2018.07.18

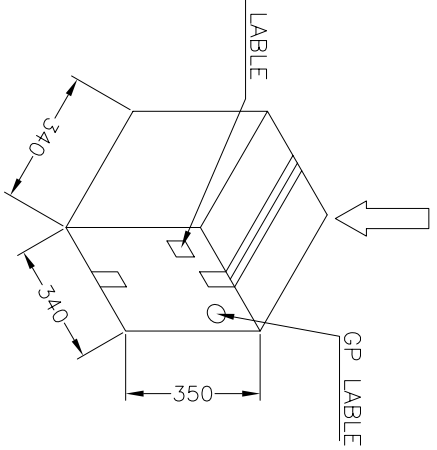
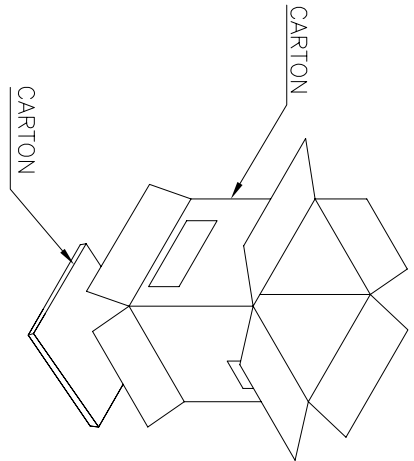
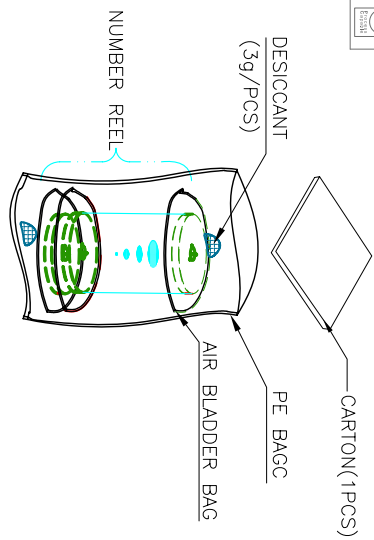
CHECKED: **胡文**
 2018.07.18

APPROVED: **黃德達**
 2018.07.18

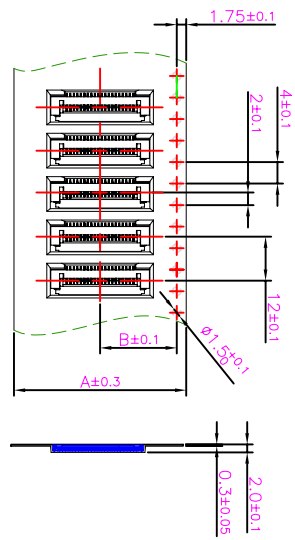
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0.5 PITCH 1.5H FPC CONN.

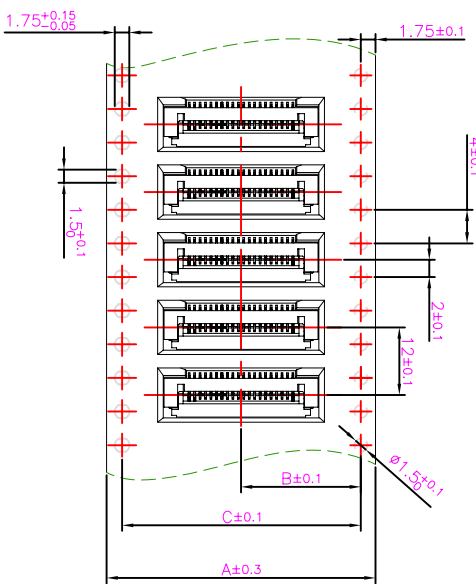
UNIT: mm
 SCALE: 1:1
 SIZE: A4
 REV: X2



Tape width 16 and 24 mm

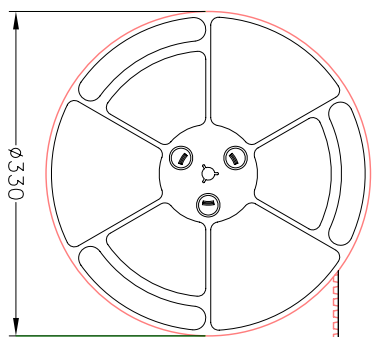
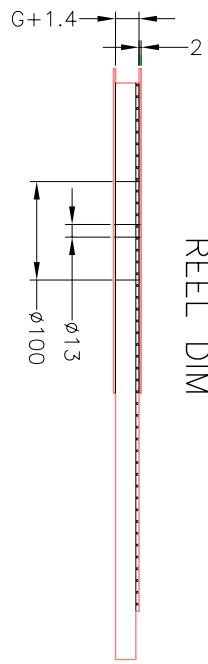


Tape width 32 and 56 mm



NOTES:

1. Component load per 1'3" reel: 4000 pcs
2. Material: black conductive polystyrene alloy.
3. Thickness: 0.3±0.05mm
4. All dimensions meet EIA-481-C requirements



| No. of Contacts | A | B | C | REEL (CARTON) | SUM(PCS) |
|---------------------|----|-------|------|---------------|----------|
| THD0515 4pin~8pin | 16 | 7.5 | — | 15 | 60000 |
| THD0515 10pin~24pin | 24 | 11.5 | — | 10 | 40000 |
| THD0515 25pin~35pin | 32 | 14.2 | 28.4 | 8 | 32000 |
| THD0515 36pin~54pin | 44 | 20.2 | 40.4 | 6 | 24000 |
| THD0515 55pin~60pin | 56 | 26.25 | 52.5 | 5 | 20000 |

CUSTOMER

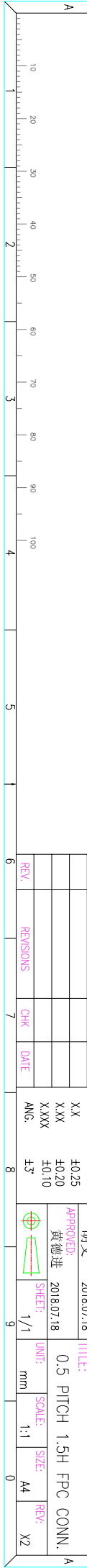
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 SHENZHENSHI THD ELECTRONICS CO., LTD.

GENERAL TOLERANCE UNLESS OTHERWISE SPECIFIED
 XX ±0.25
 XXX ±0.20
 XXXX ±0.10
 ANG. ±3°

DRAWN: Kavlin
 CHECKED: 胡文
 APPROVED: 黃德進
 DATE: 2018.07.18
 SHEET: 1/1

PART NO.: THD0515-xxCL-xx
 TITLE: 0.5 PITCH 1.5H FPC CONN.
 UNIT: mm
 SCALE: 1:1
 SIZE: A4
 REV: X2

| REV. | REVISIONS | CHK | DATE |
|------|-----------|-----|------|
| | | | |
| | | | |
| | | | |
| | | | |



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