

产品规格书

SPECIFICATION

CUSTOMER 客户: _____
PRODUCT 产品: _____ SAW TC DUPLEXER _____
MODEL NO 型号: _____ KH-SAWD8994A _____
MARKING 印字: _____ ● 3 K _____
PREPARED 编制: _____ CHECKED 审核: _____
APPROVED 批准: _____ DATE 日期: _____ 2020-6-9 _____

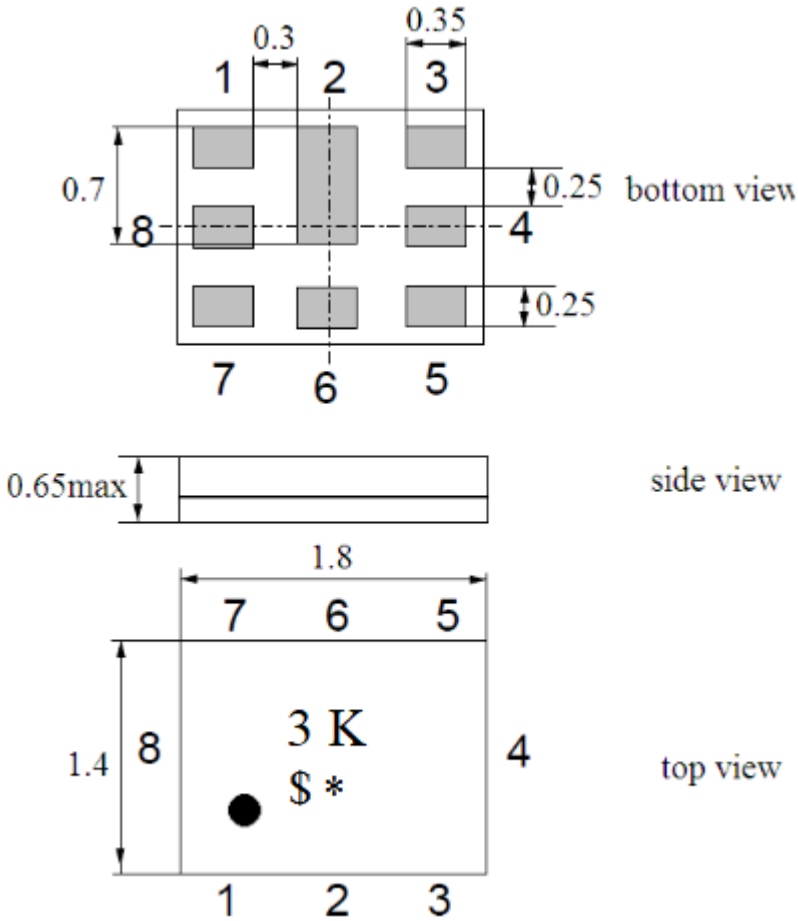
| | | |
|-------------------------|-------------|---------|
| 客户确认 CUSTOMER RECEIVED: | | |
| 审核 CHECKED | 批准 APPROVED | 日期 DATE |
| | | |

深圳市金航标电子有限公司
SHENZHEN KINGHELM ELECTRONCO., LTD.

1. Application

- Low-loss Saw duplexer for mobile telephone LTE and WCDMA Band8 systems.
- Low insertion attenuation and low passband ripple.
- Usable passband 35MHz
- High isolation between Tx and Rx.
- RoHS compatible

2. DIMENSION (PKG SIZE 1.8 x 1.4 x 0.65mm)



Pin configuration

- 3. Tx Input
- 6. Antenna
- 1. Rx Output
- 2,4,5,7,8 To be grounded

Marking: Laser Printing

\$: EIAJ Code

(Refer to the table 1)

*: Date Code

(Refer to the table 2)

Table 1 \$: EIAJ Code

This rule of code is applied repeatedly every four year.

| | | | | | | | | | | | | | |
|----------------------|----------------------|------|------|------|------|------|------|------|------|------|------|------|------|
| 2019 2023 2027 | Jan. | Feb. | Mar. | Apr. | May | Jun. | Jul. | Aug. | Sep. | Oct. | Nov. | Dec. | |
| | A | B | C | D | E | F | G | H | J | K | L | M | |
| | 2020 2024 2028 | Jan. | Feb. | Mar. | Apr. | May | Jun. | Jul. | Aug. | Sep. | Oct. | Nov. | Dec. |
| | | N | P | Q | R | S | T | U | V | W | X | Y | Z |
| 2021 2025 2029 | | Jan. | Feb. | Mar. | Apr. | May | Jun. | Jul. | Aug. | Sep. | Oct. | Nov. | Dec. |
| | | a | b | c | d | e | f | g | h | j | k | l | m |
| | 2022 2026 2030 | Jan. | Feb. | Mar. | Apr. | May | Jun. | Jul. | Aug. | Sep. | Oct. | Nov. | Dec. |
| | | n | o | p | q | r | s | t | u | v | w | x | y |

Table 2 *: Date Code

| | | | | | | | | | | | |
|------|------|------|------|------|------|------|------|------|------|------|------|
| date | 1st | 2nd | 3rd | 4th | 5th | 6th | 7th | 8th | 9th | 10th | |
| code | A | B | C | D | E | F | G | H | J | K | |
| date | 11th | 12th | 13th | 14th | 15th | 16th | 17th | 18th | 19th | 20th | |
| code | L | M | N | P | Q | R | S | T | U | V | |
| date | 21st | 22nd | 23rd | 24th | 25th | 26th | 27th | 28th | 29th | 30th | 31st |
| code | W | X | Y | Z | a | b | c̄ | d | e | f | g |

3. Maximum Rating

| Items | Conditions |
|----------------------------|-------------------|
| Operation temperature rang | -30°C ~ +85°C |
| Storage temperature rang | -40°C ~ +85°C |
| ESD voltage | ESD(MM) : 50VDC |
| Sensitive discharge device | ESD(HBM) : 175VDC |
| DC Voltage VDC | 3V (25+/-2 deg.C) |
| Moisture Sensivity Level | MSL 2 |

4. ELECTRICAL SPECIFICATION

Table1. Electrical Specification

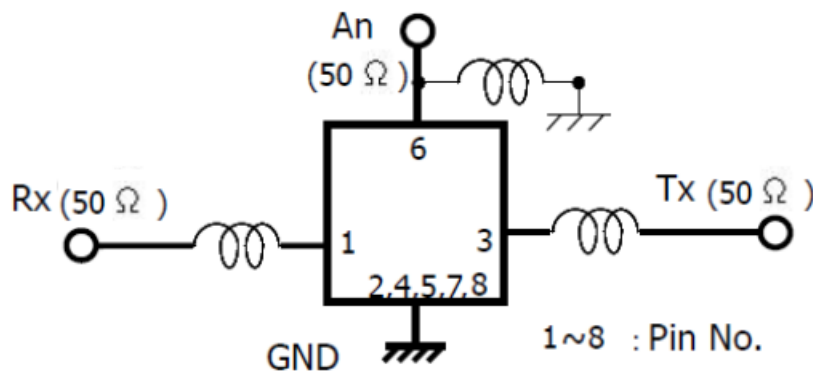
| Item | | Condition (MHz) | Specification | | | Unit | |
|----------------------|------------------|-----------------|-----------------------------|-----|-----|------|---|
| | | | Min | Typ | Max | | |
| TX to ANT | Insertion loss | 880~915 | | 1.7 | 2.5 | dB | |
| | Amplitude ripple | 880~915 | | 0.7 | 2.0 | dB | |
| | VSWR | ANT Tx | 880~915 | - | 1.5 | 2.1 | - |
| | | | | - | 1.5 | 2.1 | - |
| | Input Power | 880~915 | +30dBm Ta=+50°C 5000h,CW | | | - | |
| Absolute attenuation | | 10~862 | 30 | 35 | - | dB | |
| | | 925~960 | 45 | 55 | - | dB | |
| | | 1559~1605 | 38 | 43 | - | dB | |
| | | 1710~1785 | 42 | 47 | - | dB | |
| | | 1760~2025 | 45 | 50 | - | dB | |
| | | 2110~2200 | 45 | 54 | - | dB | |
| | | 2400~2500 | 45 | 53 | - | dB | |
| | | 2496~2690 | 45 | 58 | - | dB | |
| | | 3300~4200 | 40 | 50 | - | dB | |
| | | 4400~5000 | 40 | 50 | - | dB | |
| | 5150~5950 | 40 | 46 | - | dB | | |

| Item | | Condition (MHz) | Specification | | | Unit | |
|-----------|----------------------|-----------------|---------------|-----|-----|------|---|
| | | | Min | Typ | Max | | |
| ANT to RX | Insertion loss | 925~960 | - | 2.0 | 2.6 | dB | |
| | Pass band ripple | 925~960 | - | 1.0 | 2.0 | dB | |
| | VSWR | ANT | 925~960 | - | 1.7 | 2.2 | - |
| | | Rx | | - | 1.7 | 2.2 | - |
| | Absolute attenuation | 10~870 | 48 | 55 | - | dB | |
| | | 880~915 | 50 | 56 | - | dB | |
| | | 1427.9~1447.9 | 50 | 60 | - | dB | |
| | | 1710~1785 | 50 | 58 | - | dB | |
| | | 1920~1980 | 50 | 55 | - | dB | |
| | | 2300~2400 | 40 | 52 | - | dB | |
| | | 2400~2500 | 40 | 52 | - | dB | |
| | | 2496~2690 | 40 | 52 | - | dB | |
| | | 3300~4200 | 40 | 50 | - | dB | |
| 4400~5000 | | 40 | 50 | - | dB | | |
| 5150~5950 | 40 | 50 | - | dB | | | |

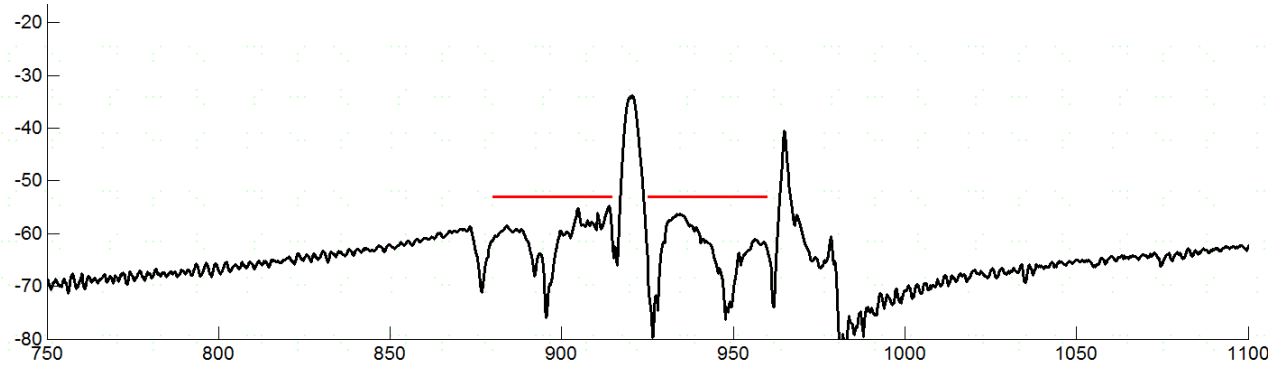
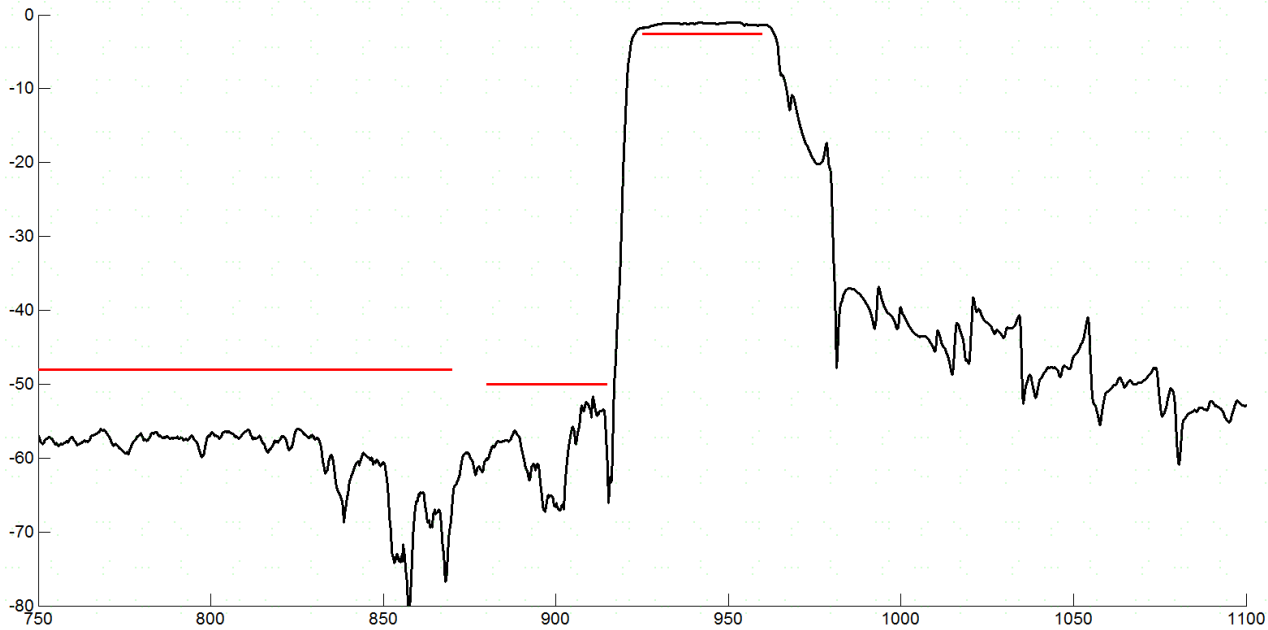
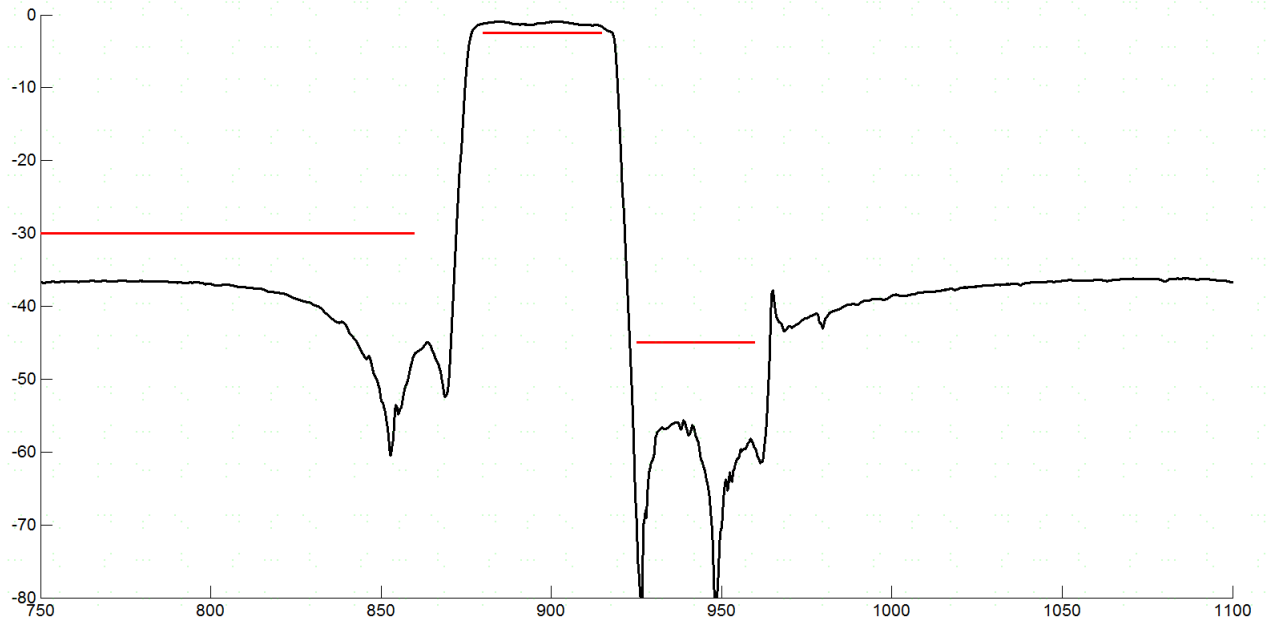
Table2. Electrical Specification

| Item | | Condition (MHz) | Specification | | | Unit |
|----------|-----------|-----------------|---------------|-----|-----|------|
| | | | Min | Typ | Max | |
| TX to RX | Isolation | 880~915 | 53 | 58 | - | dB |
| | | 925~960 | 53 | 58 | - | dB |

5. TEST CIRCUIT



6. Typical frequency response



7. Reliability test item & condition

| Category | Reliability test items | Test condition | Qty | Description | |
|------------------|------------------------|---------------------------|---|-------------|------------------------|
| Environment Test | 1 | Low temperature storage | -40±5℃ 240h | 23 | JESD22-A119 |
| | 2 | High temperature storage | 125±5℃ 240h | 23 | JESD22-A103E |
| | 3 | High temperature humidity | 85℃ 85%RH, 240h | 23 | JESD22-A106B |
| | 4 | Thermal Shock | -40 /30min~ +85 °C/30 min 100 cycle | 23 | JESD22-A106A |
| Mechanical Test | 5 | Drop Test | 152mm 12times Steel floor JIG(110g~150g) | 23 | IEC 1178-1.4.8.9 |
| | 6 | Vibration | 10~55Hz, amplitude 1.5mm Sweep time:1min, X.Y.Z direction, 2h/direction | 23 | IEC 1178-1.4.8.7 |
| Physical Test | 7 | Soldering heat resistance | Reflow with 260±5℃, 10±1s (Solder Pot) | 23 | JIS C 5201 4.18 |
| | 8 | Solderability test | 235±5℃ 3 sec. (Solder Pot) | 50 | JIS C 5201 4.17 |
| | 9 | Board adhesion | 0.5mm/sec 1point push | 11 | IEC 68-2-21 Ue3 |
| | 10 | Leak Hunting | 125℃ Fluorocarbon oil leak Hunting (30±1)s | 20 | MIL-STD-883E 1014.9 |

8. REMARK

8.1 Static voltage

Static voltage between signal load & ground may cause deterioration & destruction of the component. Please avoid static voltage.

8.2 Ultrasonic cleaning

Ultrasonic vibration may cause deterioration & destruction of the component. Please avoid ultrasonic cleaning

8.3 Soldering

Only pad component may be solded. Please avoid soldering another part of component.

9. Packing

9.1 Dimensions

(1) Carrier Tape: Figure 1

(2) Reel: Figure 2

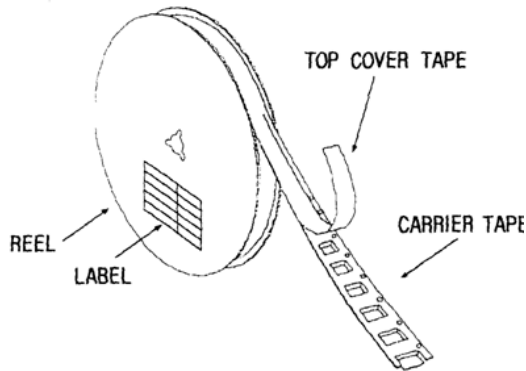
(3) The product shall be packed properly not to be damaged during transportation and storage.

9.2 Reeling Quantity

10000 pcs/reel ϕ 257.5mm

9.3 Taping Structure

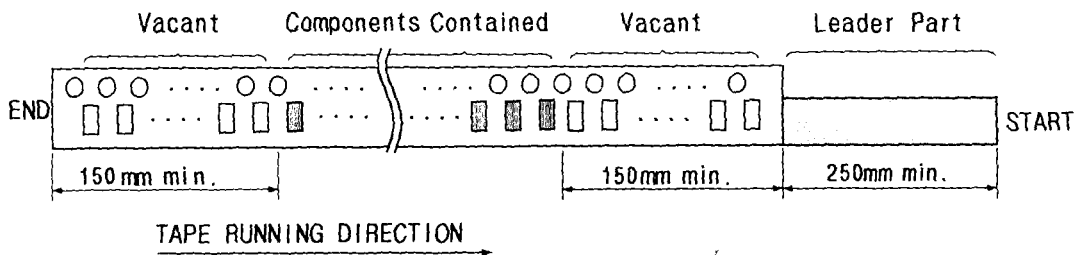
(1) The tape shall be wound around the reel in the direction shown below.



(2) Label

| | |
|-------------------|--|
| Device Name | |
| Marking | |
| User Product Name | |
| Quantity | |
| Lot No. | |

(3) Leader part and vacant position specifications.

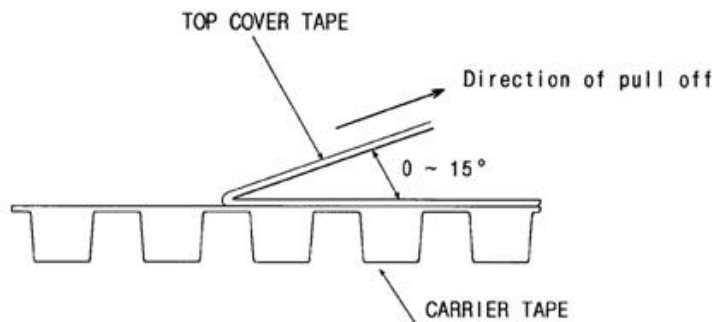


10. TAPE SPECIFICATIONS

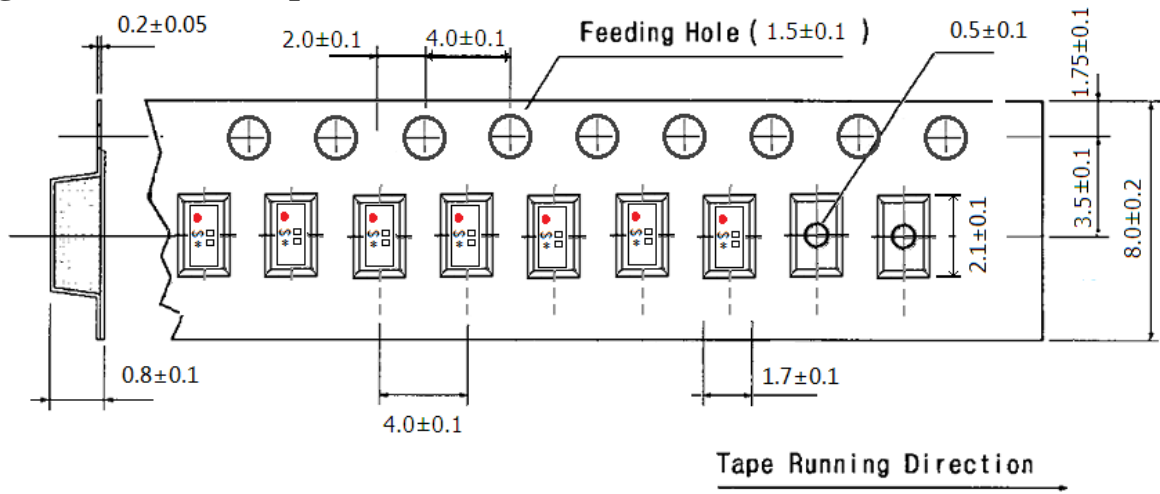
10.1 Tensile Strength of Carrier Tape: 4.4N/mm width

10.2 Top Cover Tape Adhesion (See the below figure)

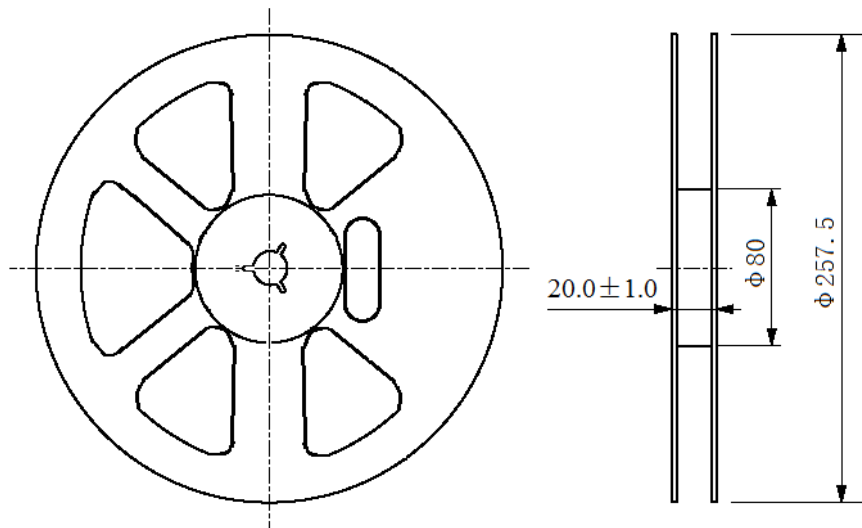
- (1) pull off angle: 0~15°
- (2) speed: 300mm/min.
- (3) force: 20~70g



[Figure 1] Carrier Tape Dimensions



[Figure 2] 10000 pcs/reel $\phi 257.5\text{mm}$



$\phi 257.5$ Reel Dimension

(in mm)

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