



## Polymer PTC Resettable Fuse

JK60

Series

## Features:

- ✧ RoHS Compliant & Halogen Free
- ✧ Radial leaded Devices
- ✧ Cured, flame retardant epoxy polymer insulating material meets UL94V-0 requirements
- ✧ Operation Current: 0.05A~5A , Maximum Voltage: 60Vdc, Operating Temperature: -40°C TO 85°C
- ✧ Agency recognition:UL、TUV



## Product Dimensions

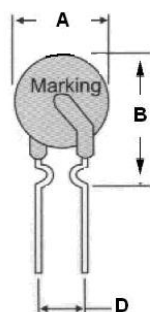


Fig.1

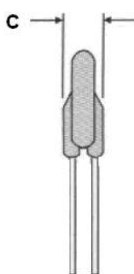


Fig.2

Unit : mm

JK60 Series

| Model    | Dimensions (mm) |        |        |        | Lead material    | Shape |
|----------|-----------------|--------|--------|--------|------------------|-------|
|          | A(max)          | B(max) | C(max) | D(typ) | Tinned matel(mm) | Fig   |
| JK60-005 | 5.0             | 8.5    | 3.0    | 5.1    | 24AWG/Φ0.5       | 1     |
| JK60-010 | 5.5             | 9.5    | 3.0    | 5.1    | 24AWG/Φ0.5       | 1     |
| JK60-017 | 7.4             | 12.7   | 3.0    | 5.1    | 24AWG/Φ0.5       | 1     |
| JK60-020 | 7.4             | 12.7   | 3.0    | 5.1    | 24AWG/Φ0.5       | 1     |
| JK60-025 | 7.4             | 12.7   | 3.0    | 5.1    | 24AWG/Φ0.5       | 1     |
| JK60-030 | 7.4             | 13.0   | 3.0    | 5.1    | 24AWG/Φ0.5       | 1     |
| JK60-040 | 7.8             | 16.2   | 3.0    | 5.1    | 24AWG/Φ0.5       | 1     |
| JK60-050 | 7.8             | 16.2   | 3.0    | 5.1    | 24AWG/Φ0.5       | 1     |
| JK60-065 | 9.7             | 17.8   | 3.0    | 5.1    | 22AWG/Φ0.6       | 1     |
| JK60-075 | 10.4            | 18.4   | 3.0    | 5.1    | 22AWG/Φ0.6       | 1     |
| JK60-090 | 11.7            | 18.4   | 3.0    | 5.1    | 22AWG/Φ0.6       | 1     |

ShenZhen JinRui Electronic Material Co.,Ltd

TEL: 0755-26546327 29356619

FAX: 0755-26546562

Web Site: <http://www.jkpptc.com>E-mail: [customer@jkpptc.com](mailto:customer@jkpptc.com)

Add: JinKe Industry Park ,No. 310,Wuhe Road ,Guanlan,Longhua,Shenzhen ,Guangdong。

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|          |      |      |     |      |             |   |
|----------|------|------|-----|------|-------------|---|
| JK60-110 | 13.0 | 18.0 | 3.0 | 5.1  | 20 AWG/Φ0.8 | 2 |
| JK60-135 | 14.5 | 19.6 | 3.0 | 5.1  | 20 AWG/Φ0.8 | 2 |
| JK60-160 | 16.3 | 21.3 | 3.0 | 5.1  | 20 AWG/Φ0.8 | 2 |
| JK60-185 | 17.8 | 22.9 | 3.0 | 5.1  | 20 AWG/Φ0.8 | 2 |
| JK60-200 | 17.8 | 22.9 | 3.0 | 5.1  | 20 AWG/Φ0.8 | 2 |
| JK60-250 | 21.3 | 26.4 | 3.0 | 10.2 | 20 AWG/Φ0.8 | 2 |
| JK60-300 | 21.3 | 26.4 | 3.0 | 10.2 | 20 AWG/Φ0.8 | 2 |
| JK60-375 | 28.5 | 33.5 | 3.0 | 10.2 | 20 AWG/Φ0.8 | 2 |
| JK60-500 | 28.5 | 33.5 | 3.0 | 10.2 | 20 AWG/Φ0.8 | 2 |

Note: ① Dimensions A, B, C is the maximum size, D values are typical tolerance of  $\pm 0.50\text{mm}$

## Thermal Derating Chart-IH (A)

## JK60 Series

| Model    | Maximum ambient operating temperatures (°C) |      |      |      |      |      |      |      |      |      |
|----------|---------------------------------------------|------|------|------|------|------|------|------|------|------|
|          | -40                                         | -20  | 0    | 25   | 40   | 50   | 60   | 70   | 80   | 85   |
| JK60-005 | 0.08                                        | 0.07 | 0.06 | 0.05 | 0.04 | 0.04 | 0.03 | 0.03 | 0.02 | 0.02 |
| JK60-010 | 0.15                                        | 0.13 | 0.12 | 0.10 | 0.09 | 0.08 | 0.07 | 0.06 | 0.05 | 0.04 |
| JK60-017 | 0.25                                        | 0.23 | 0.20 | 0.17 | 0.15 | 0.13 | 0.12 | 0.10 | 0.09 | 0.06 |
| JK60-020 | 0.30                                        | 0.27 | 0.24 | 0.20 | 0.18 | 0.16 | 0.14 | 0.12 | 0.10 | 0.08 |
| JK60-025 | 0.37                                        | 0.34 | 0.30 | 0.25 | 0.22 | 0.20 | 0.18 | 0.15 | 0.13 | 0.10 |
| JK60-030 | 0.45                                        | 0.40 | 0.35 | 0.30 | 0.27 | 0.24 | 0.21 | 0.19 | 0.16 | 0.12 |
| JK60-040 | 0.60                                        | 0.54 | 0.47 | 0.40 | 0.36 | 0.32 | 0.28 | 0.25 | 0.21 | 0.16 |
| JK60-050 | 0.75                                        | 0.68 | 0.59 | 0.50 | 0.45 | 0.40 | 0.36 | 0.31 | 0.27 | 0.20 |
| JK60-065 | 0.97                                        | 0.88 | 0.77 | 0.65 | 0.58 | 0.52 | 0.46 | 0.41 | 0.35 | 0.26 |
| JK60-075 | 1.12                                        | 1.02 | 0.89 | 0.75 | 0.67 | 0.60 | 0.54 | 0.47 | 0.40 | 0.30 |
| JK60-090 | 1.35                                        | 1.22 | 1.07 | 0.90 | 0.81 | 0.73 | 0.64 | 0.56 | 0.48 | 0.36 |
| JK60-110 | 1.65                                        | 1.49 | 1.31 | 1.10 | 0.99 | 0.89 | 0.79 | 0.69 | 0.59 | 0.44 |
| JK60-135 | 2.02                                        | 1.83 | 1.60 | 1.35 | 1.21 | 1.09 | 0.97 | 0.85 | 0.72 | 0.54 |
| JK60-160 | 2.40                                        | 2.17 | 1.90 | 1.60 | 1.44 | 1.29 | 1.15 | 1.00 | 0.86 | 0.64 |
| JK60-185 | 2.77                                        | 2.51 | 2.20 | 1.85 | 1.66 | 1.49 | 1.33 | 1.16 | 1.00 | 0.74 |
| JK60-200 | 3.00                                        | 2.72 | 2.38 | 2.00 | 1.80 | 1.62 | 1.44 | 1.26 | 1.08 | 0.80 |
| JK60-250 | 3.75                                        | 3.40 | 2.97 | 2.50 | 2.25 | 2.02 | 1.80 | 1.57 | 1.35 | 1.00 |
| JK60-300 | 4.50                                        | 4.08 | 3.57 | 3.00 | 2.70 | 2.43 | 2.16 | 1.89 | 1.62 | 1.20 |
| JK60-375 | 5.62                                        | 5.1  | 4.46 | 3.75 | 3.37 | 3.03 | 2.70 | 2.36 | 2.02 | 1.50 |
| JK60-500 | 7.50                                        | 6.80 | 5.95 | 5.00 | 4.50 | 4.05 | 3.60 | 3.15 | 2.70 | 2.00 |

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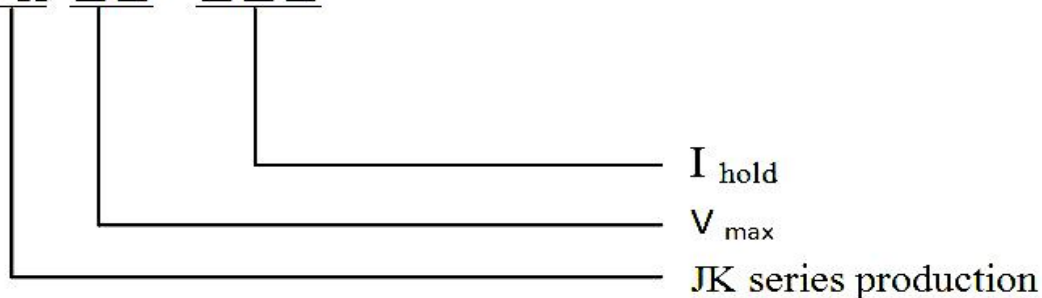
## Electrical Characteristic

## JK60 Series

| Model    | I <sub>Hold</sub> (A) | I <sub>Trip</sub><br>(A) | V <sub>max</sub>  | I <sub>max</sub>  | P <sub>d max</sub> | Maximum Time to Trip |          | Nominal resistance( $\Omega$ ) |                  |
|----------|-----------------------|--------------------------|-------------------|-------------------|--------------------|----------------------|----------|--------------------------------|------------------|
|          |                       |                          | V <sub>(DC)</sub> | A <sub>(DC)</sub> | W                  | Current (A)          | Time (S) | R <sub>min</sub>               | R <sub>max</sub> |
| JK60-005 | 0.05                  | 0.15                     | 60                | 40                | 0.26               | 0.25                 | 8.0      | 7.3                            | 20               |
| JK60-010 | 0.10                  | 0.3                      | 60                | 40                | 0.38               | 0.5                  | 5.0      | 2.5                            | 7.5              |
| JK60-017 | 0.17                  | 0.34                     | 60                | 40                | 0.48               | 0.85                 | 5.0      | 2                              | 5.21             |
| JK60-020 | 0.2                   | 0.4                      | 60                | 40                | 0.41               | 1.0                  | 5.0      | 1.5                            | 2.84             |
| JK60-025 | 0.25                  | 0.5                      | 60                | 40                | 0.45               | 1.25                 | 5.0      | 1.0                            | 1.95             |
| JK60-030 | 0.30                  | 0.6                      | 60                | 40                | 0.49               | 1.5                  | 5.0      | 0.76                           | 1.38             |
| JK60-040 | 0.40                  | 0.8                      | 60                | 40                | 0.56               | 2.0                  | 5.0      | 0.45                           | 0.88             |
| JK60-050 | 0.50                  | 1.0                      | 60                | 40                | 0.77               | 2.5                  | 5.0      | 0.40                           | 0.79             |
| JK60-065 | 0.65                  | 1.3                      | 60                | 40                | 0.88               | 3.25                 | 5.0      | 0.31                           | 0.50             |
| JK60-075 | 0.75                  | 1.5                      | 60                | 40                | 0.92               | 3.75                 | 5.0      | 0.25                           | 0.42             |
| JK60-090 | 0.90                  | 1.8                      | 60                | 40                | 0.99               | 4.5                  | 5.0      | 0.20                           | 0.33             |
| JK60-110 | 1.10                  | 2.2                      | 60                | 40                | 1.5                | 5.5                  | 8.0      | 0.15                           | 0.27             |
| JK60-135 | 1.35                  | 2.7                      | 60                | 40                | 1.7                | 6.75                 | 8.0      | 0.12                           | 0.21             |
| JK60-160 | 1.60                  | 3.2                      | 60                | 40                | 1.9                | 8.0                  | 8.0      | 0.09                           | 0.16             |
| JK60-185 | 1.85                  | 3.7                      | 60                | 40                | 2.1                | 9.25                 | 8.0      | 0.08                           | 0.14             |
| JK60-200 | 2.00                  | 4.0                      | 60                | 40                | 2.3                | 10.0                 | 8.0      | 0.07                           | 0.14             |
| JK60-250 | 2.50                  | 5.0                      | 60                | 40                | 2.5                | 12.5                 | 8.0      | 0.05                           | 0.10             |
| JK60-300 | 3.00                  | 6.0                      | 60                | 40                | 2.8                | 15.0                 | 8.0      | 0.04                           | 0.08             |
| JK60-375 | 3.75                  | 7.5                      | 60                | 40                | 3.2                | 18.75                | 24.0     | 0.03                           | 0.06             |
| JK60-500 | 5.00                  | 10                       | 60                | 40                | 3.5                | 25.0                 | 24.0     | 0.02                           | 0.06             |

## Marking System

JK □□ — □□□



## Test Procedures And Requirements

## JK60 Series

| Test       | Test Conditions     | Accept/Reject Criteria                  |
|------------|---------------------|-----------------------------------------|
| Resistance | In still air @ 25°C | R <sub>min</sub> ≤ R ≤ R <sub>max</sub> |

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|                 |                                     |                       |
|-----------------|-------------------------------------|-----------------------|
| Time to Trip    | Specified current, $V_{max}$ , 25°C | Tmaximum Time to Trip |
| Hold Current    | 60min, at $I_H$                     | No trip               |
| Trip Cycle Life | $V_{max}$ , $I_{max}$ , 100cycles   | No arcing or burning  |
| Trip Endurance  | $V_{max}$ , 24hours                 | No arcing or burning  |

## Physical Characteristics and Environmental Specifications

## Physical Characteristics

## JK60 Series

|                       |                          |                   |
|-----------------------|--------------------------|-------------------|
| Test                  | Conditions               | Resistance change |
| Passive aging         | +85°C, 1000hrs           | ±8% typical       |
| Humidity aging        | +85°C, 85%R.H.1000hrs    | ±8% typical       |
| Thermal shock         | +125°C to -55°C, 10times | ±12% typical      |
| Resistance to solvent | MIL-STD-202, Method 215  | No change         |
| Vibration             | MIL-STD-202, Method 201  | No change         |

## Operation Condition

- 1 Ambient temperature: -40°C~85°C
- 2 Humidity: ≤95%HR(40°C)
- 3 Atmospheric pressure: 86Kpa ~106Kpa.
- 4 Vibration frequency: 10Hz ~ 50Hz.
- 5 Acceleration: 98m/s<sup>2</sup>.
- 6 Storage temperature: -40°C~85°C.

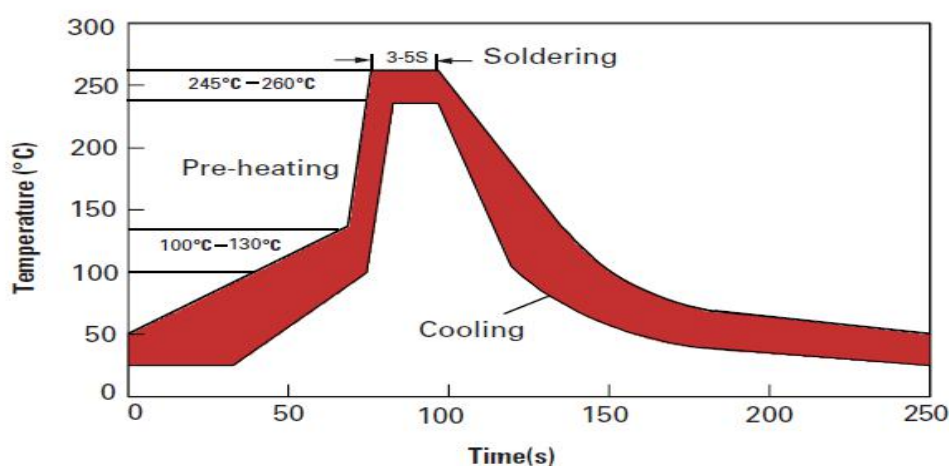
## 7Soldering

## 7.1 Wave Soldering:

Soldering Temperature:240°C~270°C

Soldering Time:≤5sec.

Soldering Position: Resettable fuse wire and the bottom ≥ 6mm。



recommended curve

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## 7.2 Manual soldering

Soldering Temperature: 280°C~300°C

Soldering Time: ≤2sec.

Soldering Position: Resettable fuse wire and the bottom ≥ 6mm。

### Electrical Specifications:

$I_H$ =Hold current: maximum current at which the device will not trip at 25°C still air.

$I_T$ =Trip current: minimum current at which the device will trip at 25°C still air.

$V_{max}$ =Maximum voltage device can withstand without damage at rated current.

$I_{max}$ =Maximum fault current device can withstand without damage at rated voltage.

$T_{trip}$ =Maximum time to trip(s) at assigned current.

$P_d$ =Typical power dissipation: typical amount of power dissipated by the device when in state air environment.

$R_{min}$ =Minimum device resistance at 25°C prior to tripping.

$R_{max}$ =Maximum device resistance at 25°C prior to tripping.

### Packaging and Storage

JK60-005~JK60-110      1000Pcs/Bag    or 2000Pcs/Box

JK60-135~JK60-200      500 Pcs/Bag

JK60-250~JK60-500      200 Pcs/Bag

### Warning:

PPTC devices are intended for protection against occasional over-current or over-temperature fault conditions, and should not be used when repeated fault conditions are anticipated. Operation beyond maximum ratings of improper use may result in device damage and possible electrical arcing and flame.

### Notes:

The specification is intended to present application, product and technical data to assist the user in selecting PPTC circuit protection devices. However, users should independently evaluate and test the suitability of each product. JinRui makes no warranties as to the accuracy or completeness of the information and disclaims any liability resulting from its use. JinRui's only obligations are those in the JinRui Standard Terms and Conditions of Sale and in no case will JinRui be liable for any incidental, indirect, or consequential damages arising from the sale, resale, or misuse of its products. JinRui reserves the right to change or update, without notice, any information contained in this specification.

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