

规格承认书

SPECIFICATION FOR APPROVAL

客户 CUSTOMER : 适用所有

品名 PRODUCT : 绕线不燃性涂装电阻器系列

规格 TYPE : KNP1/4W-7WS

客户承认印
CUSTOMER APPROVED

 **东莞市粤翔电子科技有限公司**
Dong Guan City FlyWin Electronic SCI-TECH Co.,Ltd.

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一式二份 粤翔一份 客户一份

| 出图 | 业务 | 审核 | 核准 |
|---|---|---|--|
| DRAWING | SALES | AUDITING | APPROVED |
|  |  |  |  |



粤翔电子技术品质部

编号：KNP12020A

品保部 2019年12月1日



无卤
(F,Cl,Br,I)

KNP SERIES

WIREWOUND NONFLAME RESISTORS 绕线不燃性涂漆装电阻器

FLYWIN

△ FEATURES 特点

- 1 HIGH QUALITY
高品质.
- 2 SHOCK RESISTANCE
耐冲击
- 3 STANDARD TOLERANCE : ±1%、±2%、±5%、±10%
±1%、±2%、±5%、±10%的标准误差
- 4 VARIETY OF PACKAGING-BULK 52mm、63mm、73mm、93mm
TAPE, CUT AND FORMED
可供散装、编带52mm、63mm、73mm、93mm、成型、剪脚
- 5 HIGH RESISTANCE RANGE (0Ω05-1KΩ).
阻抗范围高 (0Ω05-1KΩ).



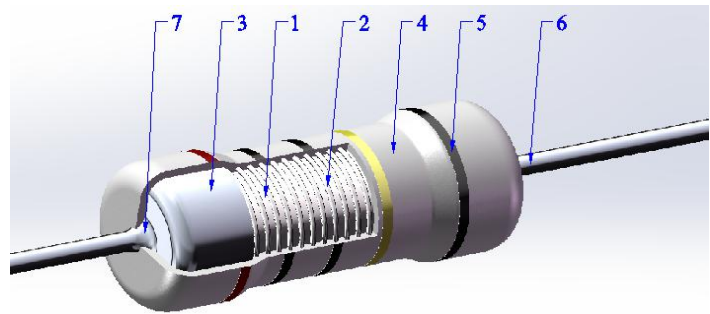
本体



小型化

△ CONSTRUCTION 结构图

- 1 CERAMIC CORE (HIGH CONDUCTIVITY)
陶瓷棒心 (高热传导)
- 2 RESISTANCE WIRE
电阻线
- 3 END CAP (HIGH RELIABILITY FITTING BY ORIGINAL CAP-PRESSING METHOD)
端帽 (卯和度信赖性高)
- 4 HIGH INSULATION AND NON-COMBUSTIBILITY OF FROG RESIN COATING (BULK POWER DIMMED, MINIATURIZED TO BRICK RED)
高绝缘及不燃性之硅树脂涂料 (本体功率为灰色, 小型化为砖红色)
- 5 COLOR CODE (PER MIL & EIA STANDARDS)
色码 (符合MIL & EIA规定之标准色码带)
- 6 LEAD WIRE (TINNED COPPER, CP)
引线 (镀锡铜线、CP线)
- 7 WELDING (LONG RELIABILITY GUARANTEE)
焊接 (长期可靠性高)



△ SPECIFICATION: 规格描述

EXAMPLE 例: KNP2W-20Ω ±1%-9T73

| | | | | | |
|---------------|---------------------|---|------------------|---------------------|------------------------|
| KNP | 2W | 20Ω | ±1% | 9 | T73 |
| ↓ | ↓ | ↓ | ↓ | ↓ | ↓ |
| 品名 PRODUCT | 额定功率 RATED POWER | 阻值范围 RESISTANCE RANGE | 误差值 TOLERANCE | 线径 WIRE DIAMETER | 形状 SHAPE |
| CR 碳膜电阻器 | 1/8W 1/4WS | 0Ω1-22MΩ | ±10% K | 0:0.40CU S:0.40CP | T26 编带26MM |
| MF 金膜电阻器 | 1/4W 1/2WS | 阻值表示方法 RESISTANCE VALUE REPRESENTATION | ±5% J | 2:0.50CU X:0.50CP | T52 编带52MM |
| MO 氧化膜电阻器 | 1/2W 1WS | 阻值单位按Ω, K, M | ±2% G | 6:0.60CU T:0.60CP | T63 编带63MM |
| MGR 高压玻璃釉电阻器 | 1W 2WS | 1000Ω=1K 1000K=1M | ±1% F | 9:0.70CU Q:0.70CP | T73 编带73MM |
| KNP 绕线电阻器 | 2W 3WS | 例: 9Ω1/5K6/4M7 | ±0.5% D | A:0.75CU D:0.80CP | T93 编带93MM |
| NKNP 无感绕线电阻器 | 3W 5WS | | | C:0.80CU | P 散装 |
| FR 保险电阻器 | 5W 7WS | | | | M、MB、MK 卧式成型散装 |
| FRKNP 绕线保险电阻器 | | | | | FY、FKY、FYL、FKYL 立式成型散装 |
| SCF 高压脉冲电阻器 | | | | | FT 立式成型编带 |

NOTE1注解: RATED VOLTAGE 额定电压 = $\sqrt{\text{POWER RATING 额定功率} \times \text{RESISTANCE VALUE 公称阻值}}$

KNP SERIES

WIREWOUND NONFLAME RESISTORS 绕线不燃性涂漆装电阻器

FLYWIN

△ PERFORMANCE 性能

| CHARACTERISTICS 特性项目 | SPECIFICATIONS 规格值 | TEST METHODS JIS C 5202 测试方法 JIS C 5202标准 | | | | | | | | | | | | | | | |
|--|--|--|----------------|----------------|-----------------|-----------|-----------|------------|----|--------------|-------|-----|----------|-----|---|--|-------|
| DC RESISTANCE 直流阻抗值 | J (±5%) | RESISTANCE VALUE TEST AT ROOM TEMPERATURE 25°C 阻值测试在室温25°C | | | | | | | | | | | | | | | |
| T. C. R温度系数 | <table border="1"> <tr> <td>1/4W</td> <td>1/2WS</td> <td rowspan="5">±350PPM</td> </tr> <tr> <td>1/2W</td> <td>1WS</td> </tr> <tr> <td>1W</td> <td>2WS</td> </tr> <tr> <td>2W</td> <td>3WS</td> </tr> <tr> <td>3W</td> <td>5WS</td> </tr> <tr> <td>5W</td> <td>7WS</td> <td></td> </tr> </table> | 1/4W | 1/2WS | ±350PPM | 1/2W | 1WS | 1W | 2WS | 2W | 3WS | 3W | 5WS | 5W | 7WS | | $\frac{R2-R1}{R1(T2-T1)} \times 10^6 \text{PPM}/^\circ\text{C}$ R1: RESISTANCE VALUE AT ROOM TEMPERATURE (T1) 常温 (T1) 阻抗值 R2: RESISTANCE VALUE AT ROOM TEMPERATURE +100°C (T2) 常温+100°C 阻抗值 | |
| 1/4W | 1/2WS | ±350PPM | | | | | | | | | | | | | | | |
| 1/2W | 1WS | | | | | | | | | | | | | | | | |
| 1W | 2WS | | | | | | | | | | | | | | | | |
| 2W | 3WS | | | | | | | | | | | | | | | | |
| 3W | 5WS | | | | | | | | | | | | | | | | |
| 5W | 7WS | | | | | | | | | | | | | | | | |
| LOAD LIFE IN HUMIDITY 湿度寿命 | RESISTANCE CHANGE RATE ±(5%+0.05 Ω) WITH NO EVIDENCE OF RESISTOR DAMAGE. 阻坑值变化率 (5%±0.05 Ω), 电阻器不可有损伤 | RESISTANCE CHANGE AFTER 1000H(1.5H ON, 0.5H OFF) AT RATED VOLTAGE IN A HUMIDITY CHAMBER CONTROLLED AT 40+/-2°C AND 90-95% RELATIVE HUMIDITY. (when the test voltage exceeds the working voltage, considering the working voltage) 温度40+/-2°C, 相对湿度90-95%于恒温恒湿箱中, 加额定直流电压测试1.5小时停止0.5小时, 连续1000小时。(当实验电压超过最高使用电压, 采用最高使用电压) | | | | | | | | | | | | | | | |
| LOAD LIFE 温度寿命 | RESISTANCE CHANGE RATE ±(5%+0.05 Ω) MAX WITH NO EVIDENCE OF RESISTOR DAMAGE. 阻坑值变化率 (5%±0.05 Ω), 电阻器不可有损伤 | RESISTANCE CHANGE AFTER 1000H OPERATING AT RATED VOLTAGE WITH DUTY CYCLE OF 1.5H ON 0.5H OFF AT 70°C±2°C (when the test voltage exceeds the working voltage, considering the working voltage) 温度70+/-2°C, 加额定直流电压测试1.5小时停止0.5小时, 连续1000小时 (当实验电压超过最高使用电压时, 采用最高使用电压) | | | | | | | | | | | | | | | |
| SHORT TIME OVER LOAD 短时间过负荷 | ±(1%+0.05 Ω) | RESISTANCE CHANGE AFTER THE APPLICATION OF A POTENTIAL OF 10% RATED VOLTAGE FOR 5 SE (when the test voltage exceeds the maximum overload, consider using the maximum overload voltage) 额定电压X10倍, 测试5秒 (当实验电压超过最高过负荷电压时, 采用最高过负荷电压) | | | | | | | | | | | | | | | |
| PULSE OVER LOAD 断续过负荷 | 1/4W, 1/2W, 1W, 2W, 3W, 5W | RESISTANCE CHANGE AFTER 10000C(1SEC ON, 25SEC OFF) AT 4T RATED VOLTAGE (AC) when the test voltage exceeds the maximum overload, consider using the maximum overload voltage) 额定电压*4倍 (交流电压), 测试1秒停止25秒, 测试10000次。(当实验电压超过最高过负荷电压, 采用最高过负荷电压) | | | | | | | | | | | | | | | |
| | 1/2WS, 1WS, 2WS, 3WS, 5WS, 7WS | RESISTANCE CHANGE AFTER 10000C(1SEC ON, 25SEC OFF) AT 4T RATED VOLTAGE (AC) when the test voltage exceeds the maximum overload, consider using the maximum overload voltage) 额定电压*4倍 (交流电压), 测试1秒停止25秒, 测试10000次。(当实验电压超过最高过负荷电压, 采用最高过负荷电压) | | | | | | | | | | | | | | | |
| RESISTANCE TO SOLVENT 耐溶剂性 | NO VISIBLE DAMAGES TO PROTECTIVE COATING AND MARKING (外观无异常, 标识能够清楚易辨) | SOAK 3MIN IN THE MELTING AGENT TO AGAIN AND AGAIN WIPE 10 TIMES (三氯乙烯浸泡3分钟, 再用湿布反复擦拭10次) | | | | | | | | | | | | | | | |
| INSULATION RESISTANCE 绝缘阻抗 | >100M Ω | | | | | | | | | | | | | | | | |
| ELECTRIC WITHSTANDING VOLTAGE 绝缘耐电压 | RESISTANCE CHANGE RATE ±(1%+0.05 Ω) WITH NO EVIDENCE OF RESISTOR DAMAGE. 阻坑值变化率±(1%+0.05 Ω), 电阻器不可有损伤 | ELECTRIC RESISTANCE BOTH ENDS THE CONJUNCTION LINE PUT ON THE METALS V TYPE THE SLOT, ACCORDING TO THE ELECTRIC VOLTAGE PROVISION OF THE CHARACTERISTIC WATCH 60 SECONDS INFLICTION 电阻两端导线置于金属V型槽上, 依特性表之电压规定施加60秒 | | | | | | | | | | | | | | | |
| TEMPERATURE CYCLING 温度循环 | RESISTANCE CHANGE RATE IS ±(1%+0.05 Ω) MAX, WITH NO EVIDENCE OF RESISTOR DAMAGE. 阻坑值变化率±(1%+0.05 Ω) 以内, 电阻器不可有损伤 | <table border="1"> <thead> <tr> <th>STEP 步骤</th> <th>TEMPERATURE 温度</th> <th>TIME (MIN) 放置时间</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>-55°C±2°C</td> <td>30</td> </tr> <tr> <td>2</td> <td>ROOM TEMP 室温</td> <td>10-15</td> </tr> <tr> <td>3</td> <td>85°C±2°C</td> <td>30</td> </tr> <tr> <td>4</td> <td>ROOM TEMP 室温</td> <td>10-15</td> </tr> </tbody> </table> | STEP 步骤 | TEMPERATURE 温度 | TIME (MIN) 放置时间 | 1 | -55°C±2°C | 30 | 2 | ROOM TEMP 室温 | 10-15 | 3 | 85°C±2°C | 30 | 4 | ROOM TEMP 室温 | 10-15 |
| STEP 步骤 | TEMPERATURE 温度 | TIME (MIN) 放置时间 | | | | | | | | | | | | | | | |
| 1 | -55°C±2°C | 30 | | | | | | | | | | | | | | | |
| 2 | ROOM TEMP 室温 | 10-15 | | | | | | | | | | | | | | | |
| 3 | 85°C±2°C | 30 | | | | | | | | | | | | | | | |
| 4 | ROOM TEMP 室温 | 10-15 | | | | | | | | | | | | | | | |
| RESISTANCE TO SOLDERING HEAT 耐热性 | RESISTANCE CHANGE RATE IS ±(1%+0.05 Ω) MAX, WITH NO EVIDENCE OF RESISTOR DAMAGE. 阻坑值变化率 (1%±0.05 Ω) 以内, 电阻器不可有损伤 | PUT THE LEAD LINE OF RESISTANCE INTO THE SOLDERING ABOUT 3.2 TO 4.8MM PLEASE TAKE IMPLEMENTATION ON THE BASIS OF THE TABLE BELOW 将电阻两端导线浸入锡炉约3.2至4.8mm依下表规定实施 <table border="1"> <thead> <tr> <th>TEMPERATURE 温度</th> <th>DIP TIME 放置时间</th> </tr> </thead> <tbody> <tr> <td>350°C±10°C</td> <td>3±0.5 SEC</td> </tr> <tr> <td>260°C±5°C</td> <td>10±1.0 SEC</td> </tr> </tbody> </table> | TEMPERATURE 温度 | DIP TIME 放置时间 | 350°C±10°C | 3±0.5 SEC | 260°C±5°C | 10±1.0 SEC | | | | | | | | | |
| TEMPERATURE 温度 | DIP TIME 放置时间 | | | | | | | | | | | | | | | | |
| 350°C±10°C | 3±0.5 SEC | | | | | | | | | | | | | | | | |
| 260°C±5°C | 10±1.0 SEC | | | | | | | | | | | | | | | | |
| SOLDERABILITY 焊锡性 | 95% COVERAGE MINIMUM 95%覆盖于导线上 | TEST TEMPERATURE OF SOLDER: 230°C±5°C DWELL TIME IN SOLDER: 3±0.5 SEC 锡炉温度: 230°C±5°C 浸锡时间: 3±0.5 秒 | | | | | | | | | | | | | | | |
| SOLDER JOINT PULL 焊点拉力 | PULLING TEST FOR 1/8W≥1.8KG, 1/4W≥3.8KG, 1/2W BIGGER THAN ≥5KG 拉力强度 1/8W≥1.8KG, 1/4W≥3.8KG, 1/2W 含以上 ≥5KG | SECURE BOTH LEAD WIRE ON EACH SIDE OF PULLING MACHING AND THEN PULL IT 将成品电阻铜线一端夹在拉力器的一端, 铜线另一端也夹在拉力器上, 再摇动拉力器 | | | | | | | | | | | | | | | |
| Life & failure rate 寿命失效率 | Under the rated condition Use Life ≥ 10000H 额定条件下使用寿命 ≥ 10000 小时 | failure rate ≤ 10PPM 失效率 ≤ 10PPM | | | | | | | | | | | | | | | |

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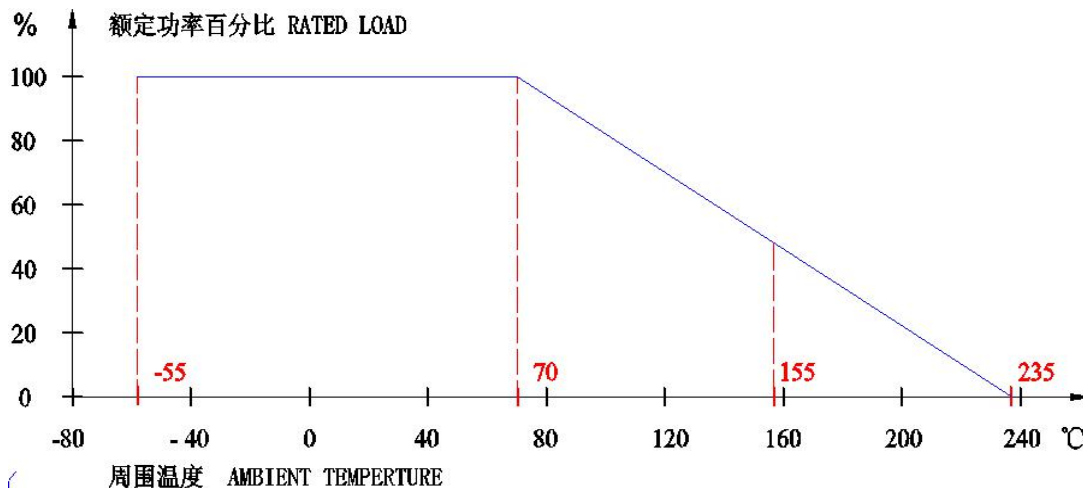
△ POWER CHARACTERISTIC 电力特性

| POWER PATED 额定功率 ITEM 项目 | 1/4W | 1/2WS | 1/2W | 1WS | 1W | 2WS | 2W | 3WS | 3W | 5WS | 5W | 7WS |
|---|----------------------------------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| MAX WORKING VOLTAGE 最高使用电压 | 200V | 250V | 250V | 350V | 350V | 500V | 500V | 500V | 500V | 500V | 500V | 500V |
| MAX OVERLOAD VOLTAGE 最高过负荷电压 | 400V | 500V | 500V | 700V | 700V | 1000V | 1000V | 1000V | 1000V | 1000V | 1000V | 1000V |
| MAX INTERMITTENCE OVER LOAD VOLTAGE 最高断续过负荷 | 400V | 500V | 500V | 700V | 700V | 1000V | 1000V | 1000V | 1000V | 1000V | 1000V | 1000V |
| ELECTRIC WITHSTANDING VOLTAGE 绝缘耐电压 | 300V | 300V | 300V | 300V | 350V | 350V | 400V | 400V | 500V | 500V | 500V | 500V |
| RESISTANCE TOLERANCE 阻抗误差值 | K (±10%) J (±5%) G (±2%) F (±1%) | | | | | | | | | | | |
| RANGE (OHM) 阻抗值范围 | MIN | 0.05 Ω | 0.05 Ω | 0.05 Ω | 0.05 Ω | 0.05 Ω | 0.05 Ω | 0.05 Ω | 0.05 Ω | 0.05 Ω | 0.05 Ω | 0.05 Ω |
| | MAX | 150 Ω | 150 Ω | 200 Ω | 200 Ω | 330 Ω | 330 Ω | 510 Ω | 510 Ω | 680 Ω | 680 Ω | 1K Ω |

NOTE注解: 1M ohm is high risk resistance for thin film resistors.

薄膜电阻1M以上阻值为高风险阻值

△ POWER DERATING CURVE 负载衰减曲线



NOTE注解: 1 RATED AMBIENT TEMPERATURE :70°C

额定周围温度: 70°C

2 OPERATING TEMPERATURE RANGE:-55°C~+235°C

使用温度范围: -55°C~+235°C

3 FOR RESISTORS OPERATED IN AMBIENT TEMPERATURE OVER 70°C, POWER RATING SHALL BE DERATED IN ACCORDANCE WITH THE FIGURE

周围温度70°C以上使用时, 根据降功率曲线将减轻额定功率

KNP SERIES

WIREWOUND NONFLAME RESISTORS 绕线不燃性涂漆装电阻器

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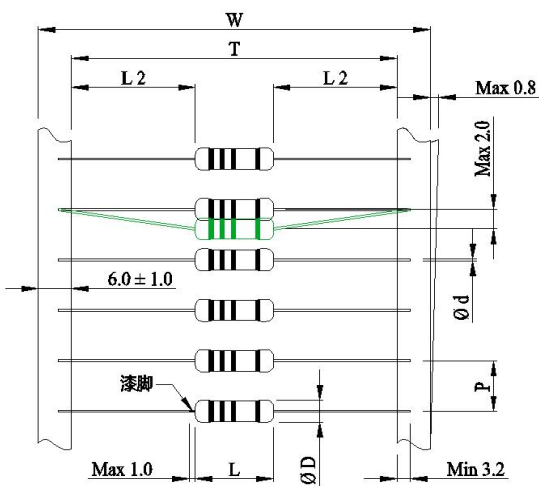
△ TYPE DIMENSION 型号尺寸

◆ BULK TYPE 散装



| POWER 功率 | DIMENSION 尺寸 (mm) | | | |
|---------------|-------------------|--------|---------|-------|
| | L±1.0 | ØD±1.0 | Ød±0.05 | H±3.0 |
| 1/4W 1/2WS | 6.2 | 2.7 | 0.40 | 26 |
| 1/2W 1WS | 9 | 3.5 | 0.50 | 25 |
| 1W 2WS | 11 | 4.5 | 0.60 | 30 |
| 2W 3WS | 15 | 5 | 0.70 | 32 |
| 3W 5WS | 17 | 6 | 0.70 | 31 |
| 5W 7WS | 25 | 8 | 0.80 | 39 |

◆ TAPING TYPE 编带



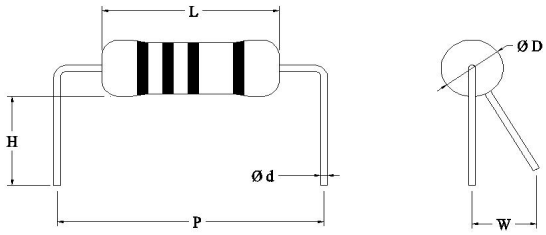
| POWER 功率 | DIMENSION 尺寸 (mm) | | | | | | | |
|---------------|-------------------|--------------|--------|---------|-------|-------|-----|--------------|
| | T | +1.5 -0.0 | ØD±1.0 | Ød±0.05 | P±0.5 | L±1.0 | W | +2.0 -0.0 |
| 1/4W 1/2WS | 52 | | 2.7 | 0.40 | 5 | 6.2 | 64 | |
| 1/2W 1WS | 52 | | 3.5 | 0.50 | 5 | 9 | 64 | |
| 1W 2WS | 63 | | 4.5 | 0.60 | 5 | 11 | 75 | |
| 2W 3WS | 73 | | 5 | 0.70 | 10 | 15 | 85 | |
| 3W 5WS | 73 | | 6 | 0.70 | 10 | 17 | 85 | |
| 5W 7WS | 93 | | 8 | 0.80 | 10 | 25 | 105 | |

KNP SERIES

WIREWOUND NONFLAME RESISTORS 绕线不燃性涂漆装电阻器

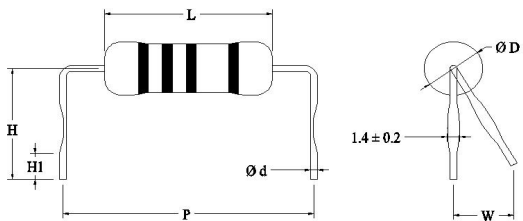
FLYWIN

◆ "M" TYPE M型



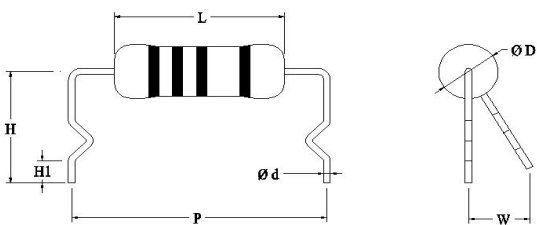
| POWER 功率 | DIMENSION 尺寸 (mm) | | | | | |
|---------------|-------------------|-------------------------|--------------------------|-------------|-------------|-------|
| | $L \pm 1.0$ | $\varnothing D \pm 1.0$ | $\varnothing d \pm 0.05$ | $H \pm 1.0$ | $P \pm 1.0$ | W Max |
| 1/4W 1/2WS | 6.2 | 2.7 | 0.40 | 3.5-10 | 10 | 3 |
| 1/2W 1WS | 9 | 3.5 | 0.50 | 3.5-10 | 12.5 | 3 |
| 1W 2WS | 11 | 4.5 | 0.60 | 3.5-10 | 15 | 3 |
| 2W 3WS | 15 | 5 | 0.70 | 3.5-10 | 20 | 3 |
| 3W 5WS | 17 | 6 | 0.70 | 3.5-10 | 25 | 3 |

◆ "MB" TYPE MB型



| POWER 功率 | DIMENSION 尺寸 (mm) | | | | | | |
|-------------|-------------------|-------------------------|--------------------------|-------------|--------------|-------------|-------|
| | $L \pm 1.0$ | $\varnothing D \pm 1.0$ | $\varnothing d \pm 0.05$ | $H \pm 1.0$ | $H1 \pm 0.5$ | $P \pm 1.0$ | W Max |
| 1W 2WS | 11 | 4.5 | 0.60 | 10.0-15.0 | 3.5 | 18 | 3 |
| 2W 3WS | 15 | 5 | 0.70 | 10.0-15.0 | 3.5 | 20 | 3 |
| 3W 5WS | 17 | 6 | 0.70 | 10.0-15.0 | 3.5 | 24 | 3 |

◆ "MK" TYPE MK型



| POWER 功率 | DIMENSION 尺寸 (mm) | | | | | | |
|-------------|-------------------|-------------------------|--------------------------|-------------|--------------|-------------|-------|
| | $L \pm 1.0$ | $\varnothing D \pm 1.0$ | $\varnothing d \pm 0.05$ | $H \pm 1.0$ | $H1 \pm 0.5$ | $P \pm 1.0$ | W Max |
| 1W 2WS | 11 | 4.5 | 0.60 | 10.00 | 3.5 | 15 | 3 |
| 2W 3WS | 15 | 5 | 0.70 | 10.00 | 3.5 | 20 | 3 |
| 3W 5WS | 17 | 6 | 0.70 | 12.00 | 3.5 | 25 | 3 |

KNP SERIES

WIREWOUND NONFLAME RESISTORS 绕线不燃性涂漆装电阻器

FLYWIN

◆ "FY" TYPE FY型



| POWER 功率 | DIMENSION 尺寸 (mm) | | | | | |
|---------------|-------------------|--------|---------|--------|-------|-------|
| | L±1.0 | ØD±1.0 | Ød±0.05 | L1 Max | H±1.0 | P±1.0 |
| 1/4W 1/2WS | 6.2 | 2.7 | 0.40 | 3.5 | 4.00 | 6 |
| 1/2W 1WS | 9 | 3.5 | 0.50 | 3.5 | 4.00 | 7 |
| 1W 2WS | 11 | 4.5 | 0.60 | 3.5 | 4.00 | 9 |
| 2W 3WS | 15.5 | 5 | 0.70 | 3.5 | 4.00 | 9 |
| 3W 5WS | 17.5 | 6 | 0.70 | 3.5 | 4.00 | 9 |

◆ "FKY" TYPE FKY型



| POWER 功率 | DIMENSION 尺寸 (mm) | | | | | | |
|---------------|-------------------|--------|---------|--------|-------|-------|-------|
| | L±1.0 | ØD±1.0 | Ød±0.05 | L1 Max | H±1.0 | P±1.0 | g±1.0 |
| 1/4W 1/2WS | 6.2 | 2.7 | 0.40 | 3.5 | 4.00 | 6 | 3 |
| 1/2W 1WS | 9 | 3.5 | 0.50 | 3.5 | 4.00 | 7 | 3 |
| 1W 2WS | 11 | 4.5 | 0.60 | 3.5 | 4.00 | 9 | 3 |
| 2W 3WS | 15.5 | 5 | 0.70 | 3.5 | 4.00 | 9 | 3 |
| 3W 5WS | 17.5 | 6 | 0.70 | 3.5 | 4.00 | 9 | 3 |

◆ "FYL" TYPE FYL型



| POWER 功率 | DIMENSION 尺寸 (mm) | | | | | | |
|---------------|-------------------|--------|---------|-------|--------|-------|--------|
| | L±1.0 | ØD±1.0 | Ød±0.05 | H±1.0 | H1±1.0 | P±1.0 | L2±1.5 |
| 1/4W 1/2WS | 6.2 | 2.7 | 0.40 | 3.5 | 4.00 | 6 | 7 |
| 1/2W 1WS | 9 | 3.5 | 0.50 | 3.5 | 4.00 | 7 | 6 |
| 1W 2WS | 11 | 4.5 | 0.60 | 3.5 | 4.00 | 9 | 9 |
| 2W 3WS | 15.5 | 5 | 0.70 | 3.5 | 4.00 | 9 | 12 |
| 3W 5WS | 17.5 | 6 | 0.70 | 3.5 | 4.00 | 9 | 12 |

◆ "FKYL" TYPE FKYL型



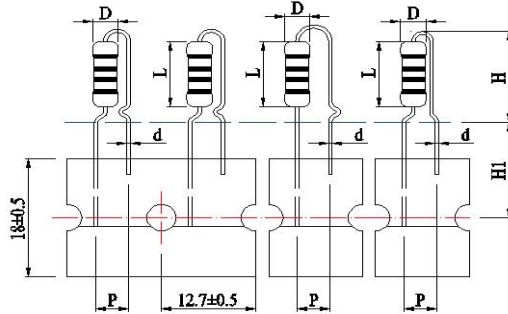
| POWER 功率 | DIMENSION 尺寸 (mm) | | | | | | | |
|---------------|-------------------|--------|---------|--------|-------|-------|-------|--------|
| | L±1.0 | ØD±1.0 | Ød±0.05 | L1 Max | H±1.0 | P±1.0 | g±1.0 | L2±1.5 |
| 1/4W 1/2WS | 6.2 | 2.7 | 0.40 | 3.5 | 4.00 | 6 | 3 | 7 |
| 1/2W 1WS | 9 | 3.5 | 0.50 | 3.5 | 4.00 | 7 | 3 | 6 |
| 1W 2WS | 11 | 4.5 | 0.60 | 3.5 | 4.00 | 9 | 3 | 9 |
| 2W 3WS | 15.5 | 5 | 0.70 | 3.5 | 4.00 | 9 | 3 | 12 |
| 3W 5WS | 17.5 | 6 | 0.70 | 3.5 | 4.00 | 9 | 3 | 12 |

KNP SERIES

WIREWOUND NONFLAME RESISTORS 绕线不燃性涂漆装电阻器

FLYWIN

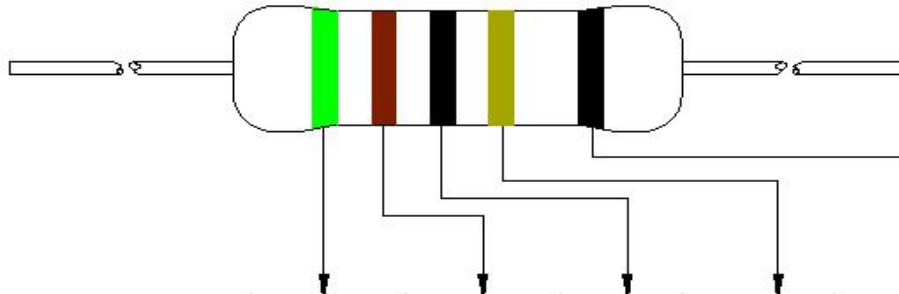
◆ "FT" TYPE FT型



| POWER 功率 | DIMENSION 尺寸 (mm) | | | | | |
|-------------|-------------------|--------|---------|-------|--------|-------|
| | L±1.0 | ØD±1.0 | Ød±0.05 | H Max | HI Max | P±0.5 |
| 1/2W 1WS | 9 | 3.5 | 0.50 | 15.0 | 16.5 | 5 |
| 1W 2WS | 11 | 4.5 | 0.60 | 18.0 | 16.5 | 5 |
| 2W 3WS | 15.5 | 5 | 0.70 | 22.0 | 16.5 | 5 |
| 3W 5WS | 17.5 | 6 | 0.70 | 22.0 | 16.5 | 5 |

注：以上所有成型尺寸可按照客户要求特殊定制。
All the above forming dimensions can be customized according to the customer's requirements.

△ COLOR CODE 色码



| COLOR 颜色 | NO. 1 第一数字 | NO. 2 第二数字 | NO. 3 倍率 | NO. 4 允许误差 | NO. 5 识别码 |
|-------------|---------------|---------------|------------------|---------------|--------------|
| BLACK (黑) | 0 | 0 | 10 ⁰ | | KNP |
| BROWN (棕) | 1 | 1 | 10 ¹ | ±1% (F) | |
| RED (红) | 2 | 2 | 10 ² | ±2% (G) | |
| ORANGE (橙) | 3 | 3 | 10 ³ | | |
| YELLOW (黄) | 4 | 4 | 10 ⁴ | | |
| GREEN (绿) | 5 | 5 | 10 ⁵ | | NKNP |
| BLUE (蓝) | 6 | 6 | 10 ⁶ | | SCF |
| VIOLET (紫) | 7 | 7 | 10 ⁷ | | |
| GRAY (灰) | 8 | 8 | 10 ⁸ | | |
| WHITE (白) | 9 | 9 | 10 ⁹ | | FR |
| GOLD (金) | | | 10 ⁻¹ | ±5% (J) | |
| SILVER (银) | | | 10 ⁻² | ±10% (K) | |

KNP SERIES

WIREWOUND NONFLAME RESISTORS 绕线不燃性涂漆装电阻器

FLYWIN

△ PACKAG 包装

◆ TAPING TYPE 编带

| POWER 功率 | SHAPE 形状 | MPQ (KPCS) 最小包装量 | QTY-BOX (KPCS) 单盒数量 | QTY-CARTON (KPCS) 单箱数量 |
|---------------|-------------|---------------------|------------------------|---------------------------|
| 1/4W 1/2WS | T26 | 5.00 | 5.00 | 105.00 |
| | T52 | 5.00 | 5.00 | 105.00 |
| 1/2W 1WS | T52 | 2.00 | 2.00 | 30.00 |
| 1W 2WS | T63 | 1.00 | 1.00 | 15.00 |
| 2W 3WS | T73 | 1.00 | 1.00 | 12.00 |
| 3W 5WS | T73 | 0.50 | 0.50 | 6.00 |
| 5W 7WS | T93 | 0.25 | 0.25 | 2.50 |

◆ VERTICAL TAPING TYPE 立式编带

| POWER 功率 | SHAPE 形状 | MPQ (KPCS) 最小包装量 | QTY-BOX (KPCS) 单盒数量 | QTY-CARTON (KPCS) 单箱数量 |
|-------------|-------------|---------------------|------------------------|---------------------------|
| 1/2W 1WS | FT | 3.50 | 3.50 | 35.00 |
| 1W 2WS | FT | 2.50 | 2.50 | 25.00 |
| 2W 3WS | FT | 2.00 | 2.00 | 20.00 |
| 3W 5WS | FT | 1.80 | 1.80 | 18.00 |

◆ BULK TYPE 散装

| POWER 功率 | SHAPE 形状 | MPQ (KPCS) 最小包装量 | QTY-BOX (KPCS) 单盒数量 | QTY-CARTON (KPCS) 单箱数量 |
|---------------|-------------------------|---------------------|------------------------|---------------------------|
| 1/4W 1/2WS | P | 1.00 | 10.00 | 60.00 |
| | FY、FKY、FYL、FKYL、M | 2.00 | 20.00 | 120.00 |
| 1/2W 1WS | P | 0.50 | 5.00 | 18.00 |
| | FY、FKY、FYL、FKYL、M | 1.00 | 5.00 | 30.00 |
| 1W 2WS | P | 0.20 | 2.00 | 12.00 |
| | FY、FKY、FYL、FKYL、M、MB、MK | 0.50 | 3.00 | 18.00 |
| 2W 3WS | P | 0.20 | 2.00 | 12.00 |
| | FY、FKY、FYL、FKYL、M、MB、MK | 0.20 | 2.00 | 12.00 |
| 3W 5WS | P | 0.10 | 1.00 | 6.00 |
| | FY、FKY、FYL、FKYL、M、MB、MK | 0.20 | 1.00 | 6.00 |

注：

建议储存环境：温度：0-30℃且相对湿度低于65%，高温、灰层和有害气体（如酸碱性气体）都需要避免避免接触。

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