

## 规格承认书

SPECIFICATION FOR APPROVAL

客户 CUSTOMER : 适用所有

品名 PRODUCT : 碳膜固定电阻器系列

规格 TYPE : 1/8W-7WS

客户承认印  
CUSTOMER APPROVED

广东翔胜电子科技有限公司

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一式二份

翔胜一份

客户一份

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

翔胜电子技术品质部

编号：CRS2021A

日期：2021年11月30日

无卤  
(F,Cl,Br,I)

# CR SERIES

CARBON FILM FIXED RESISTORS 碳膜固定电阻器

## △ FEATURES 特点

- 1 HIGH QUALITY  
高品质.
- 2 WITHSTAND VOLTAGE, SHOCK RESISTANCE  
耐电压, 耐冲击
- 3 STANDARD TOLERANCE :  $\pm 5\%$ , ( $\pm 2\%$ ).  
 $\pm 5\%$ , ( $\pm 2\%$ ) 的标准误差
- 4 VARIETY OF PACKAGING-BULK 26mm、52mm、63mm、73mm  
、93mm TAPE, CUT AND FORMED  
可供散装、编带26mm、52mm、63mm、73mm、93mm、成型、剪脚
- 5 HIGH RESISTANCE RANGE ( $0\Omega$  1-22M $\Omega$ ).  
阻抗范围高 ( $0\Omega$  1-22M $\Omega$ ).



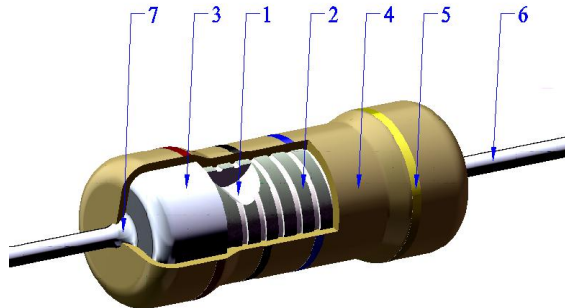
本体



小型化

## △ CONSTRUCTION 结构图

- 1 CERAMIC CORE (HIGH CONDUCTIVITY)  
陶瓷棒心 (高热传导)
- 2 HIGH STABILITY FILM  
高稳定性皮膜
- 3 END CAP (HIGH RELIABILITY FITTING BY ORIGINAL  
CAP-PRESSING METHOD)  
端帽 (卯和度信赖性高)
- 4 HIGH INSULATION AND SOLVENT RESISTANCE OF EPOXY  
RESIN COATING (BULK POWER TO KHAKI, MINIATURE PINK)  
高绝缘及耐溶剂之环氧树脂涂料 (本体功率为土黄色, 小型化为粉红色)
- 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: CR1/2W-4 $\Omega$ 7 $\pm 5\%$ -XT52

| CR            | 1/2W                | 4 $\Omega$ 7                                 | $\pm 5\%$        | X                   | T52                        |
|---------------|---------------------|----------------------------------------------|------------------|---------------------|----------------------------|
| 品名<br>PRODUCT | 额定功率<br>RATED POWER | 阻值范围<br>RESISTANCE RANGE                     | 误差值<br>TOLERANCE | 线径<br>WIRE DIAMETER | 形状<br>SHAPE                |
| CR 碳膜电阻器      | 1/8W 1/4WS          | 0 $\Omega$ 1-22M $\Omega$                    | $\pm 10\%$ 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<br>RESISTANCE VALUE<br>REPRESENTATION | $\pm 5\%$ 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 $\Omega$ , K, M                        | $\pm 2\%$ G      | 6:0.60CU T:0.60CP   | T63 编带63MM                 |
| MGR 高压玻璃釉电阻器  | 1W 2WS              | 1000 $\Omega$ =1K 1000K=1M                   | $\pm 1\%$ F      | 9:0.70CU Q:0.70CP   | T73 编带73MM                 |
| KNP 绕线电阻器     | 2W 3WS              | 例: 9 $\Omega$ 1/5K6/4M7                      | $\pm 0.5\%$ 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、<br>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 =  $\sqrt{\text{POWER RATING 额定功率} \times \text{RESISTANCE VALUE 公称阻值}}$

# CR SERIES

CARBON FILM FIXED RESISTORS 碳膜固定电阻器

## △ PERFORMANCE 性能

| CHARACTERISTICS<br>特性项目                | SPECIFICATIONS<br>规格值                                                                                             |                                             | TEST METHODS JIS C 5202<br>测试方法 JIS C 5202标准                                                                                                                                                                                                                                                                                 |
|----------------------------------------|-------------------------------------------------------------------------------------------------------------------|---------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| DC RESISTANCE<br>直流阻值                  | J (±5%)                                                                                                           |                                             | RESISTANCE VALUE TEST AT ROOM TEMPERATURE 25℃<br>阻值测试在室温25℃                                                                                                                                                                                                                                                                  |
| T.C.R温度系数                              | 1/8W 1/4WS<br>1/4W 1/2WS<br>1/2W 1WS<br>1W 2WS<br>2W 3WS<br>3W 5WS<br>5W 7WS                                      | <10Ω±400PPM<br>10Ω~1M±350PPM<br>>1M±1000PPM | R2-R1—— X 10 <sup>6</sup> PPM/℃<br>R1 (T2-T1)<br>R1: RESISTANCE VALUE AT ROOM TEMPERATURE (T1)<br>常温 (T1) 阻值<br>R2: RESISTANCE VALUE AT ROOM TEMPERATURE +100℃ (T2)<br>常温+100℃阻值                                                                                                                                             |
| LOAD LIFE IN HUMIDITY<br>湿度寿命          | RESISTANCE CHANGE RATE ±(5%+0.05Ω)<br>WITH NO EVIDENCE OF RESISTOR DAMAGE.<br>阻值变化率 (5%±0.05Ω), 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℃ AND 90-95% RELATIVE HUMIDITY. (when the test voltage exceeds the working voltage, considering the working voltage)<br>温度40+/-2℃, 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<br>温度寿命                      | RESISTANCE CHANGE RATE ±(5%+0.05Ω) MAX WITH NO EVIDENCE OF RESISTOR DAMAGE.<br>阻值变化率 (5%±0.05Ω), 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℃±2℃ (when the test voltage exceeds the working voltage, considering the working voltage)<br>温度70+/-2℃, 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<br>短时间过负荷         | ±(1%+0.05Ω)                                                                                                       |                                             | RESISTANCE CHANGE AFTER THE APPLICATION OF A POTENTIAL OF 2.5T RATED VOLTAGE FOR 5 SE (when the test voltage exceeds the maximum overload, consider using the maximum overload voltage)<br>额定电压X2.5倍, 测试5秒 (当实验电压超过最高过负荷电压, 采用最高过负荷电压)                                                                                       |
| PULSE OVER LOAD<br>断续过负荷               | 1/8W, 1/4W, 1/2W,<br>1W, 2W, 3W, 5W                                                                               | ±(1%+0.05Ω)                                 | 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)<br>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)                                                                             |
|                                        | 1/4WS, 1/2WS, 1WS, 2WS,<br>3WS, 5WS, 7WS                                                                          | ±(2%+0.05Ω)                                 | 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)<br>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<br>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<br>(三氯乙烯浸泡3分钟, 再用湿布反复擦拭10次)                                                                                                                                                                                                                                  |
| INSULATION RESISTANCE<br>绝缘阻抗          | >1000MΩ                                                                                                           |                                             |                                                                                                                                                                                                                                                                                                                              |
| ELECTRIC WITHSTANDING VOLTAGE<br>绝缘耐电压 | RESISTANCE CHANGE RATE ±(1%+0.05Ω) WITH NO EVIDENCE OF RESISTOR DAMAGE.<br>阻值变化率 ±(1%+0.05Ω), 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<br>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<br>温度循环            | RESISTANCE CHANGE RATE IS ±(1%+0.05Ω) MAX, WITH NO EVIDENCE OF RESISTOR DAMAGE.<br>阻值变化率 ±(1%+0.05Ω) 以内, 电阻器不可有损伤 |                                             | STEP 步骤、                                                                                                                                                                                                                                                                                                                     |
|                                        |                                                                                                                   |                                             | TEMPERATURE 温度                                                                                                                                                                                                                                                                                                               |
|                                        |                                                                                                                   |                                             | TIME (MIN) 放置时间                                                                                                                                                                                                                                                                                                              |
|                                        |                                                                                                                   |                                             | 1 -55℃±2℃ 30                                                                                                                                                                                                                                                                                                                 |
|                                        |                                                                                                                   |                                             | 2 ROOM TEMP 室温 10-15                                                                                                                                                                                                                                                                                                         |
| RESISTANCE TO SOLDERING HEAT<br>耐热性    | RESISTANCE CHANGE RATE IS ±(2%+0.05Ω) MAX, WITH NO EVIDENCE OF RESISTOR DAMAGE.<br>阻值变化率 (2%±0.05Ω) 以内, 电阻器不可有损伤  |                                             | 3 85℃±2℃ 30                                                                                                                                                                                                                                                                                                                  |
|                                        |                                                                                                                   |                                             | 4 ROOM TEMP 室温 10-15                                                                                                                                                                                                                                                                                                         |
|                                        |                                                                                                                   |                                             |                                                                                                                                                                                                                                                                                                                              |
| SOLDERABILITY<br>焊锡性                   | 95% COVERAGE MINIMUM<br>95%覆盖于导线上                                                                                 |                                             | TEST TEMPERATURE OF SOLDER: 230℃±5℃<br>DWELL TIME IN SOLDER: 3±0.5 SEC<br>锡炉温度: 230℃±5℃ 浸锡时间: 3±0.5 秒                                                                                                                                                                                                                        |
|                                        |                                                                                                                   |                                             | TEMPERATURE 温度                                                                                                                                                                                                                                                                                                               |
|                                        |                                                                                                                   |                                             | DIP TIME 放置时间                                                                                                                                                                                                                                                                                                                |
| SOLDER JOINT PULL<br>焊点拉力              | PULLING TEST FOR 1/8W≥1.8KG, 1/4W≥3.8KG, 1/2W BIGGER THAN ≥5KG<br>拉力强度 1/8W≥1.8KG, 1/4W≥3.8KG, 1/2W 含以上 ≥5KG      |                                             | 350℃±10℃ 3±0.5 SEC                                                                                                                                                                                                                                                                                                           |
|                                        |                                                                                                                   |                                             | 260℃±5℃ 10±1.0 SEC                                                                                                                                                                                                                                                                                                           |
|                                        |                                                                                                                   |                                             |                                                                                                                                                                                                                                                                                                                              |
| Life & failure rate<br>寿命失效率           | Under the rated condition Use Life ≥ 10000H<br>额定条件下使用寿命 ≥ 10000小时                                                |                                             | failure rate ≤ 10PPM<br>失效率 ≤ 10PPM                                                                                                                                                                                                                                                                                          |

# CR SERIES

CARBON FILM FIXED RESISTORS 碳膜固定电阻器

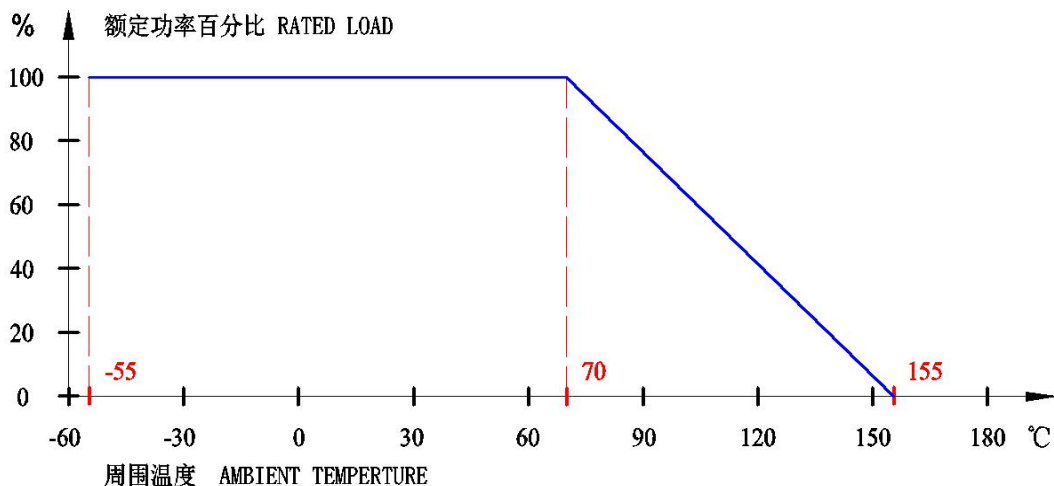
## △ POWER CHARACTERISTIC 电力特性

| POWER PATED<br>额定功率<br>ITEM<br>项目                 | 1/8W            | 1/4WS | 1/4W | 1/2WS | 1/2W | 1WS   | 1W    | 2WS   | 2W    | 3WS   | 3W    | 5WS   | 5W    | 7WS   |
|---------------------------------------------------|-----------------|-------|------|-------|------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| MAX WORKING<br>VOLTAGE<br>最高使用电压                  | 200V            | 250V  | 250V | 350V  | 350V | 500V  | 500V  | 500V  | 500V  | 500V  | 500V  | 500V  | 750V  | 750V  |
| MAX OVERLOAD<br>VOLTAGE<br>最高过负荷电压                | 400V            | 500V  | 500V | 700V  | 700V | 1000V | 1000V | 1000V | 1000V | 1000V | 1000V | 1000V | 1000V | 1000V |
| MAX INTERMITTENCE<br>OVER LOAD VOLTAGE<br>最高断续过负荷 | 400V            | 500V  | 500V | 700V  | 700V | 1000V | 1000V | 1000V | 1000V | 1000V | 1000V | 1000V | 1000V | 1000V |
| ELECTRIC<br>WITHSTANDING<br>VOLTAGE<br>绝缘耐电压      | 300V            | 300V  | 400V | 400V  | 500V | 500V  | 700V  | 700V  | 700V  | 700V  | 700V  | 700V  | 700V  | 700V  |
| RESISTANCE<br>TOLERANCE<br>阻抗误差值                  | J (±5%) G (±2%) |       |      |       |      |       |       |       |       |       |       |       |       |       |
| RANGE (OHM)<br>阻抗值范围                              | MIN             | 0.1Ω  | 0.1Ω | 0.1Ω  | 0.1Ω | 0.1Ω  | 0.1Ω  | 0.1Ω  | 0.1Ω  | 0.1Ω  | 0.1Ω  | 0.1Ω  | 0.1Ω  | 0.1Ω  |
|                                                   | MAX             | 22MΩ  | 22MΩ | 22MΩ  | 22MΩ | 22MΩ  | 22MΩ  | 22MΩ  | 22MΩ  | 22MΩ  | 22MΩ  | 22MΩ  | 22MΩ  | 22MΩ  |

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



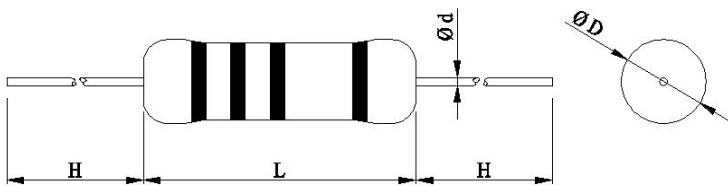
- NOTE注解:
- 1 RATED AMBIENT TEMPERATURE : 70°C  
额定周围温度: 70°C
  - 2 OPERATING TEMPERATURE RANGE: -55°C ~ +155°C  
使用温度范围: -55°C ~ +155°C
  - 3 FOR RESISTORS OPERATED IN AMBIENT TEMPERATURE OVER 70°C, POWER RATING SHALL BE DERATED IN ACCORDANCE WITH THE FIGURE  
周围温度70°C以上使用时, 根据降功率曲线将减轻额定功率

# CR SERIES

CARBON FILM FIXED RESISTORS 碳膜固定电阻器

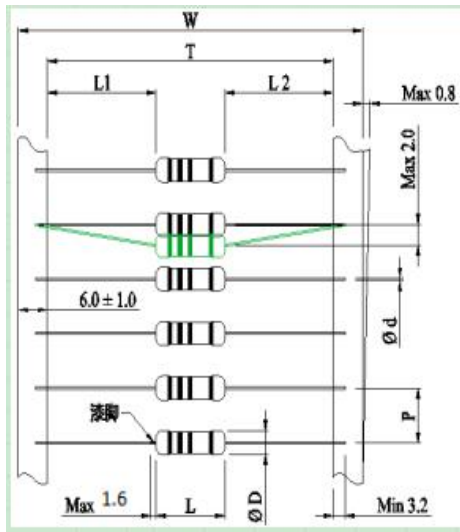
## △ TYPE DIMENSION 型号尺寸

◆ BULK TYPE 散装



| POWER<br>功率   | DIMENSION 尺寸 (mm) |        |         |       |
|---------------|-------------------|--------|---------|-------|
|               | L±1.0             | ØD±1.0 | Ød±0.05 | H±3.0 |
| 1/8W<br>1/4WS | 3.7               | 2.3    | 0.40    | 27    |
| 1/4W<br>1/2WS | 6.2               | 2.7    | 0.40    | 26    |
| 1/2W<br>1WS   | 9                 | 3.5    | 0.50    | 25    |
| 1W<br>2WS     | 11                | 4.5    | 0.60    | 30    |
| 2W<br>3WS     | 15                | 5      | 0.70    | 32    |
| 3W<br>5WS     | 17                | 6      | 0.70    | 31    |
| 5W<br>7WS     | 25                | 8      | 0.80    | 39    |

◆ TAPING TYPE 编带

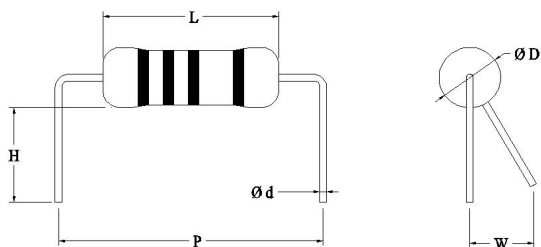


| POWER<br>功率   | DIMENSION 尺寸 (mm) |              |        |         |       |       |    |
|---------------|-------------------|--------------|--------|---------|-------|-------|----|
|               | T                 | +1.5<br>-0.0 | ØD±1.0 | Ød±0.05 | P±0.5 | L±1.0 | W  |
| 1/8W<br>1/4WS | 26                | 2.3          | 0.40   | 5       | 3.7   | 38    | 64 |
|               | 52                |              |        |         |       |       |    |
| 1/4W<br>1/2WS | 26                | 2.7          | 0.40   | 5       | 6.2   | 38    | 64 |
|               | 52                |              |        |         |       |       |    |
| 1/2W<br>1WS   | 52                | 3.5          | 0.50   | 5       | 9     | 64    |    |
| 1W<br>2WS     | 52                | 4.5          | 0.60   | 5       | 11    | 64    |    |
| 1W<br>2WS     | 63                | 4.5          | 0.60   | 5       | 11    | 75    |    |
| 2W<br>3WS     | 73                | 5            | 0.70   | 10      | 15    | 85    |    |
| 3W<br>5WS     | 73                | 6            | 0.70   | 10      | 17    | 85    |    |
| 5W<br>7WS     | 93                | 8            | 0.80   | 10      | 25    | 105   |    |

# CR SERIES

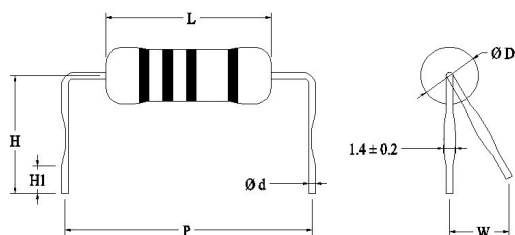
CARBON FILM FIXED RESISTORS 碳膜固定电阻器

## ◆ "M" TYPE M型



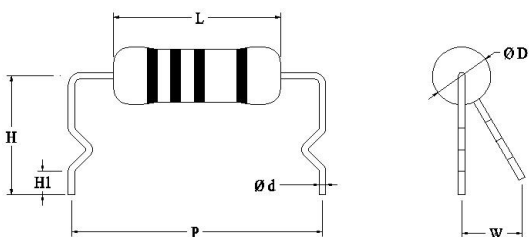
| POWER<br>功率   | DIMENSION 尺寸 (mm) |        |         |        |       |       |
|---------------|-------------------|--------|---------|--------|-------|-------|
|               | L±1.0             | ØD±1.0 | Ød±0.05 | H±1.0  | P±1.0 | W Max |
| 1/8W<br>1/4WS | 3.7               | 2.3    | 0.40    | 3.5-10 | 6     | 3     |
| 1/4W<br>1/2WS | 6.2               | 2.7    | 0.40    | 3.5-10 | 10    | 3     |
| 1/2W<br>1WS   | 9                 | 3.5    | 0.50    | 3.5-10 | 12.5  | 3     |
| 1W<br>2WS     | 11                | 4.5    | 0.60    | 3.5-10 | 15    | 3     |
| 2W<br>3WS     | 15                | 5      | 0.70    | 3.5-10 | 20    | 3     |
| 3W<br>5WS     | 17                | 6      | 0.70    | 3.5-10 | 25    | 3     |

## ◆ "MB" TYPE MB型



| POWER<br>功率 | DIMENSION 尺寸 (mm) |        |         |           |        |       |       |
|-------------|-------------------|--------|---------|-----------|--------|-------|-------|
|             | L±1.0             | ØD±1.0 | Ød±0.05 | H±1.0     | H1±0.5 | P±1.0 | W Max |
| 1W<br>2WS   | 11                | 4.5    | 0.60    | 10.0-15.0 | 3.5    | 18    | 3     |
| 2W<br>3WS   | 15                | 5      | 0.70    | 10.0-15.0 | 3.5    | 20    | 3     |
| 3W<br>5WS   | 17                | 6      | 0.70    | 10.0-15.0 | 3.5    | 24    | 3     |

## ◆ "MK" TYPE MK型

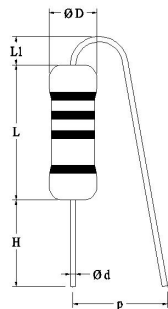


| POWER<br>功率 | DIMENSION 尺寸 (mm) |        |         |       |        |       |       |
|-------------|-------------------|--------|---------|-------|--------|-------|-------|
|             | L±1.0             | ØD±1.0 | Ød±0.05 | H±1.0 | H1±0.5 | P±1.0 | W Max |
| 1W<br>2WS   | 11                | 4.5    | 0.60    | 10.00 | 3.5    | 15    | 3     |
| 2W<br>3WS   | 15                | 5      | 0.70    | 10.00 | 3.5    | 20    | 3     |
| 3W<br>5WS   | 17                | 6      | 0.70    | 12.00 | 3.5    | 25    | 3     |

# CR SERIES

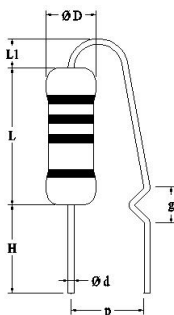
CARBON FILM FIXED RESISTORS 碳膜固定电阻器

## ◆ "FY" TYPE FY型



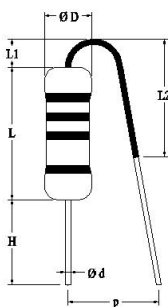
| POWER<br>功率   | DIMENSION 尺寸 (mm) |        |         |        |       |       |
|---------------|-------------------|--------|---------|--------|-------|-------|
|               | L±1.0             | ØD±1.0 | Ød±0.05 | L1 Max | H±1.0 | P±1.0 |
| 1/4W<br>1/2WS | 6.2               | 2.7    | 0.40   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

## ◆ "FKY" TYPE FKY型



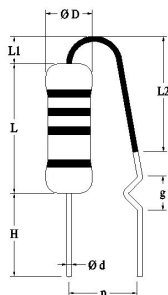
| POWER<br>功率   | DIMENSION 尺寸 (mm) |        |         |        |       |       |       |
|---------------|-------------------|--------|---------|--------|-------|-------|-------|
|               | L±1.0             | ØD±1.0 | Ød±0.05 | L1 Max | H±1.0 | P±1.0 | g±1.0 |
| 1/4W<br>1/2WS | 6.2         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

## ◆ "FYL" TYPE FYL型



| POWER<br>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<br>1/2WS | 6.2               | 2.7    | 0.40    | 3.5   | 4.00   | 6     | 7      |
| 1/2W<br>1WS   | 9                 | 3.5    | 0.50    | 3.5   | 4.00   | 7     | 6      |
| 1W<br>2WS     | 11                | 4.5    | 0.60    | 3.5   | 4.00   | 9     | 9      |
| 2W<br>3WS     | 15.5              | 5      | 0.70    | 3.5   | 4.00   | 9     | 12     |
| 3W<br>5WS     | 17.5              | 6      | 0.70    | 3.5   | 4.00   | 9     | 12     |

## ◆ "FKYL" TYPE FKYL型

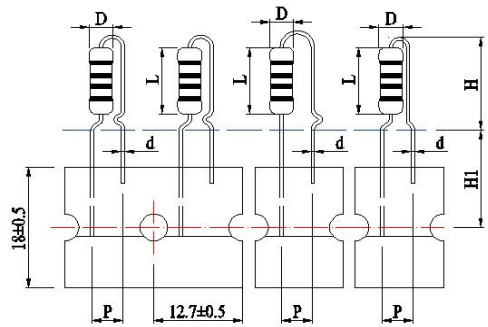


| POWER<br>功率   | DIMENSION 尺寸 (mm) |        |         |        |       |       |       |        |
|---------------|-------------------|--------|---------|--------|-------|-------|-------|--------|
|               | L±1.0             | ØD±1.0 | Ød±0.05 | L1 Max | H±1.0 | P±1.0 | g±1.0 | L2±1.5 |
| 1/4W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

# CR SERIES

CARBON FILM FIXED RESISTORS 碳膜固定电阻器

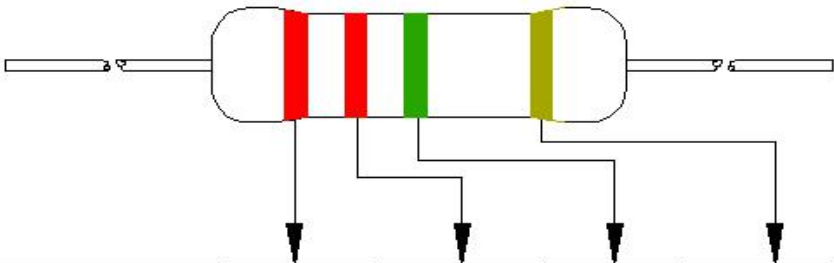
◆ "FT" TYPE FT型



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

## Δ COLOR CODE 色码



| COLOR<br>颜色 | NO. 1<br>第一数字 | NO. 2<br>第二数字 | NO. 3<br>倍率 | NO. 4<br>允许误差 |
|-------------|---------------|---------------|-------------|---------------|
| BLACK (黑)   | 0             | 0             | $10^0$      |               |
| 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             | $10^5$      |               |
| BLUE (蓝)    | 6             | 6             | $10^6$      |               |
| VIOLET (紫)  | 7             | 7             | $10^7$      |               |
| GRAY (灰)    | 8             | 8             | $10^8$      |               |
| WHITE (白)   | 9             | 9             | $10^9$      |               |
| GOLD (金)    |               |               | $10^{-1}$   | ±5% (J)       |
| SILVER (银)  |               |               | $10^{-2}$   | ±10% (K)      |



# CR SERIES

CARBON FILM FIXED RESISTORS 碳膜固定电阻器

## △ PACKAG 包装

### ◆ TAPING TYPE 编带

| POWER<br>功率   | SHAPE<br>形状 | MPQ (KPCS)<br>最小包装量 | QTY-BOX (KPCS)<br>单盒数量 | QTY-CARTON (KPCS)<br>单箱数量 |
|---------------|-------------|---------------------|------------------------|---------------------------|
| 1/8W<br>1/4WS | T26         | 5.00                | 5.00                   | 160.00                    |
|               | T52         | 5.00                | 5.00                   | 100.00                    |
| 1/4W<br>1/2WS | T26         | 5.00                | 5.00                   | 105.00                    |
|               | T52         | 5.00                | 5.00                   | 105.00                    |
| 1/2W<br>1WS   | T52         | 2.00                | 2.00                   | 30.00                     |
| 1W<br>2WS     | T63         | 1.00                | 1.00                   | 15.00                     |
| 2W<br>3WS     | T73         | 1.00                | 1.00                   | 12.00                     |
| 3W<br>5WS     | T73         | 0.50                | 0.50                   | 6.00                      |
| 5W<br>7WS     | T93         | 0.25                | 0.25                   | 2.50                      |

### ◆ VERTICAL TAPING TYPE 立式编带

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

### ◆ BULK TYPE 散装

| POWER<br>功率   | SHAPE<br>形状             | MPQ (KPCS)<br>最小包装量 | QTY-BOX (KPCS)<br>单盒数量 | QTY-CARTON (KPCS)<br>单箱数量 |
|---------------|-------------------------|---------------------|------------------------|---------------------------|
| 1/8W<br>1/4WS | M、P                     | 1.00                | 10.00                  | 60.00                     |
| 1/4W<br>1/2WS | P                       | 1.00                | 10.00                  | 60.00                     |
|               | FY、FKY、FYL、FKYL、M       | 2.00                | 20.00                  | 120.00                    |
| 1/2W<br>1WS   | P                       | 0.50                | 5.00                   | 18.00                     |
|               | FY、FKY、FYL、FKYL、M       | 1.00                | 5.00                   | 30.00                     |
| 1W<br>2WS     | P                       | 0.20                | 2.00                   | 12.00                     |
|               | FY、FKY、FYL、FKYL、M、MB、MK | 0.50                | 3.00                   | 18.00                     |
| 2W<br>3WS     | P                       | 0.20                | 2.00                   | 12.00                     |
|               | FY、FKY、FYL、FKYL、M、MB、MK | 0.20                | 2.00                   | 12.00                     |
| 3W<br>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）都需要避免接触。