

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 : CR1/8W-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：CRS-020A

品保部 2019年12月1日



无卤
(F,Cl,Br,I)

CR SERIES

CARBON FILM FIXED RESISTORS 碳膜固定电阻器

FLYWIN

△ FEATURES 特点

- 1 HIGH QUALITY
高品质.
- 2 WITHSTAND VOITAGE, SHOCK RESISTANCE
耐电压, 耐冲击
- 3 STANDARD TOLERANCE : ±5%, (±2%).
±5%, (±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 (0Ω-22MΩ).
阻抗范围高 (0Ω-22MΩ).



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: CR1/4W-470Ω ±5%-ST52

| CR | 1/4W | 470Ω | ±5% | S | T52 |
|---------------|---------------------|----------------------------|------------------|---------------------|----------------------------|
| 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 | 0Ω-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 | ±5% J | 2: 0.50CU X: 0.50CP | T52 编带52MM |
| MO 氧化膜电阻器 | 1/2W 1WS | REPRESENTATION | ±2% G | 6: 0.60CU T: 0.60CP | T63 编带63MM |
| MGR 高压玻璃釉电阻器 | 1W 2WS | 阻值单位按 Ω, K, M | ±1% F | 9: 0.70CU Q: 0.70CP | T73 编带73MM |
| KNP 绕线电阻器 | 2W 3WS | 1000Ω=1K 1000K=1M | ±0.5% D | A: 0.75CU D: 0.80CP | T93 编带93MM |
| NKNP 无感绕线电阻器 | 3W 5WS | 例: 9Ω 1/5K6/4M7 | | 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 = $\sqrt{\text{POWER RATING 额定功率} \times \text{RESISTANCE VALUE 公称阻值}}$

CR SERIES

CARBON FILM FIXED RESISTORS 碳膜固定电阻器

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>1/8W</td> <td>1/4WS</td> <td rowspan="7"> $<10\Omega \pm 400\text{PPM}$ $10\Omega - 1M \pm 350\text{PPM}$ $>1M \pm 1000\text{PPM}$ </td> </tr> <tr> <td>1/4W</td> <td>1/2WS</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> </tr> </table> | 1/8W | 1/4WS | $<10\Omega \pm 400\text{PPM}$ $10\Omega - 1M \pm 350\text{PPM}$ $>1M \pm 1000\text{PPM}$ | 1/4W | 1/2WS | 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 |
| 1/8W | 1/4WS | $<10\Omega \pm 400\text{PPM}$ $10\Omega - 1M \pm 350\text{PPM}$ $>1M \pm 1000\text{PPM}$ | | | | | | | | | | | | | | | |
| 1/4W | 1/2WS | | | | | | | | | | | | | | | | |
| 1/2W | 1WS | | | | | | | | | | | | | | | | |
| 1W | 2WS | | | | | | | | | | | | | | | | |
| 2W | 3WS | | | | | | | | | | | | | | | | |
| 3W | 5WS | | | | | | | | | | | | | | | | |
| 5W | 7WS | | | | | | | | | | | | | | | | |
| LOAD LIFE IN HUMIDITY 湿度寿命 | RESISTANCE CHANGE RATE $\pm(5\%+0.05\Omega)$ WITH NO EVIDENCE OF RESISTOR DAMAGE. 阻坑值变化率 ($5\% \pm 0.05\Omega$)，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 $40\pm 2^\circ\text{C}$ AND 90-95% RELATIVE HUMIDITY. (when the test voltage exceeds the working voltage, considering the working voltage) 温度 $40\pm 2^\circ\text{C}$ ，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 $\pm(5\%+0.05\Omega)$ MAX WITH NO EVIDENCE OF RESISTOR DAMAGE. 阻坑值变化率 ($5\% \pm 0.05\Omega$)，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 $70^\circ\text{C} \pm 2^\circ\text{C}$ (when the test voltage exceeds the working voltage, considering the working voltage) 温度 $70\pm 2^\circ\text{C}$ ，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 | $\pm(1\%+0.05\Omega)$ | 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) 额定电压 X 2.5 倍，测试 5 秒（当实验电压超过最高过负载时，采用最高过负载电压） | | | | | | | | | | | | | | | |
| PULSE OVER LOAD 断续过负荷 | 1/8W, 1/4W, 1/2W, 1W, 2W, 3W, 5W | $\pm(1\%+0.05\Omega)$ | | | | | | | | | | | | | | | |
| | 1/4WS, 1/2WS, 1WS, 2WS, 3WS, 5WS, 7WS | $\pm(2\%+0.05\Omega)$ | | | | | | | | | | | | | | | |
| 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 | $>1000M\Omega$ | | | | | | | | | | | | | | | | |
| ELECTRIC WITHSTANDING VOLTAGE 绝缘耐电压 | RESISTANCE CHANGE RATE $\pm(1\%+0.05\Omega)$ WITH NO EVIDENCE OF RESISTOR DAMAGE. 阻坑值变化率 $\pm(1\%+0.05\Omega)$ ，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 $\pm(1\%+0.05\Omega)$ MAX, WITH NO EVIDENCE OF RESISTOR DAMAGE. 阻坑值变化率 $\pm(1\%+0.05\Omega)$ 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>$-55^\circ\text{C} \pm 2^\circ\text{C}$</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>$85^\circ\text{C} \pm 2^\circ\text{C}$</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 | $-55^\circ\text{C} \pm 2^\circ\text{C}$ | 30 | 2 | ROOM TEMP 室温 | 10-15 | 3 | $85^\circ\text{C} \pm 2^\circ\text{C}$ | 30 | 4 | ROOM TEMP 室温 | 10-15 |
| STEP 步骤 | TEMPERATURE 温度 | TIME (MIN) 放置时间 | | | | | | | | | | | | | | | |
| 1 | $-55^\circ\text{C} \pm 2^\circ\text{C}$ | 30 | | | | | | | | | | | | | | | |
| 2 | ROOM TEMP 室温 | 10-15 | | | | | | | | | | | | | | | |
| 3 | $85^\circ\text{C} \pm 2^\circ\text{C}$ | 30 | | | | | | | | | | | | | | | |
| 4 | ROOM TEMP 室温 | 10-15 | | | | | | | | | | | | | | | |
| RESISTANCE TO SOLDERING HEAT 耐热性 | RESISTANCE CHANGE RATE IS $\pm(2\%+0.05\Omega)$ MAX, WITH NO EVIDENCE OF RESISTOR DAMAGE. 阻坑值变化率 ($2\% \pm 0.05\Omega$) 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>$350^\circ\text{C} \pm 10^\circ\text{C}$</td> <td>$3 \pm 0.5 \text{ SEC}$</td> </tr> <tr> <td>$260^\circ\text{C} \pm 5^\circ\text{C}$</td> <td>$10 \pm 1.0 \text{ SEC}$</td> </tr> </tbody> </table> | TEMPERATURE 温度 | DIP TIME 放置时间 | $350^\circ\text{C} \pm 10^\circ\text{C}$ | $3 \pm 0.5 \text{ SEC}$ | $260^\circ\text{C} \pm 5^\circ\text{C}$ | $10 \pm 1.0 \text{ SEC}$ | | | | | | | | | |
| TEMPERATURE 温度 | DIP TIME 放置时间 | | | | | | | | | | | | | | | | |
| $350^\circ\text{C} \pm 10^\circ\text{C}$ | $3 \pm 0.5 \text{ SEC}$ | | | | | | | | | | | | | | | | |
| $260^\circ\text{C} \pm 5^\circ\text{C}$ | $10 \pm 1.0 \text{ SEC}$ | | | | | | | | | | | | | | | | |
| SOLDERABILITY 焊锡性 | 95% COVERAGE MINIMUM 95% 覆盖于导线上 | TEST TEMPERATURE OF SOLDER: $230^\circ\text{C} \pm 5^\circ\text{C}$ DWELL TIME IN SOLDER: $3 \pm 0.5 \text{ SEC}$ 锡炉温度: $230^\circ\text{C} \pm 5^\circ\text{C}$ 浸锡时间: $3 \pm 0.5 \text{ 秒}$ | | | | | | | | | | | | | | | |
| SOLDER JOINT PULL 焊点拉力 | PULLING TEST FOR 1/8W $\geq 1.8\text{KG}$, 1/4W $\geq 3.8\text{KG}$, 1/2W BIGGER THAN $\geq 5\text{KG}$ 拉力强度 1/8W $\geq 1.8\text{KG}$, 1/4W $\geq 3.8\text{KG}$, 1/2W 含以上 $\geq 5\text{KG}$ | 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 $\geq 10000\text{H}$ 额定条件下使用寿命 ≥ 10000 小时 | failure rate $\leq 10\text{PPM}$ 失效率 $\leq 10\text{PPM}$ | | | | | | | | | | | | | | | |

CR SERIES

CARBON FILM FIXED RESISTORS 碳膜固定电阻器

FLYWIN

△ POWER CHARACTERISTIC 电力特性

| POWER PATED 额定功率 | 1/8W | 1/4WS | 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 | 750V | 750V |
| MAX OVERLOAD VOLTAGE 最高过负荷电压 | 400V | 500V | 500V | 700V | 700V | 1000V | 1000V | 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 | 1000V | 1000V |
| ELECTRIC WITHSTANDING VOLTAGE 绝缘耐电压 | 300V | 300V | 400V | 400V | 500V | 500V | 700V | 700V | 700V | 700V | 700V | 700V | 700V | 700V |
| RESISTANCE TOLERANCE 阻抗误差值 | J (±5%) G (±2%) | | | | | | | | | | | | | |
| RANGE (OHM) 阻抗值范围 | MIN | 0.1 Ω | 0.1 Ω | 0.1 Ω | 0.1 Ω | 0.1 Ω | 0.1 Ω | 0.1 Ω | 0.1 Ω | 0.1 Ω | 0.1 Ω | 0.1 Ω | 0.1 Ω | 0.1 Ω |
| | MAX | 22M Ω | 22M Ω | 22M Ω | 22M Ω | 22M Ω | 22M Ω | 22M Ω | 22M Ω | 22M Ω | 22M Ω | 22M Ω | 22M Ω | 22M 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~+155°C
使用温度范围: -55°C~+155°C
- 3 FOR RESISTORS IPERATED 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

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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 |
| 1/8W 1/4WS | 3.7 | 2.3 | 0.40 | 27 |
| 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 |
| 1/8W 1/4WS | 26 | 2.3 | 0.40 | 5 | 3.7 | 38 |
| | 52 | | | | | 64 |
| 1/4W 1/2WS | 26 | 2.7 | 0.40 | 5 | 6.2 | 38 |
| | 52 | | | | | 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 |

CR SERIES

CARBON FILM FIXED RESISTORS 碳膜固定电阻器

FLYWIN

◆ "M" TYPE M型



| POWER 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 1/4WS | 3.7 | 2.3 | 0.40 | 3.5-10 | 6 | 3 |
| 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±1.0 | ØD±1.0 | Ød±0.05 | H±1.0 | H1±0.5 | P±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±1.0 | ØD±1.0 | Ød±0.05 | H±1.0 | H1±0.5 | P±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 |

CR SERIES

CARBON FILM FIXED RESISTORS 碳膜固定电阻器

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 |

CR SERIES

CARBON FILM FIXED RESISTORS 碳膜固定电阻器

FLYWIN

• "FT" TYPE FT型



| POWER 功率 | DIMENSION 尺寸 (mm) | | | | | |
|-------------|-------------------|--------|---------|-------|--------|-------|
| | L±1.0 | OD±1.0 | Ød±0.05 | H Max | HI Max | P±0.5 |
| 1/2W 1WS | 9 | 3.5 | 0.60 | 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客户要求特殊定制。
All the above forming dimensions can be customized according to the customer's requirements.



| CR-Size Type | H | d ±0.06 | P±1 | P0 ±0.3 | P1 ±0.7 | P2 ±1.3 | F±1 | △h | W ±0.5 | W1 ±1 | W2 | H0 | D0 ±0.3 |
|-----------------|-------|------------|------|------------|------------|------------|-----|-----|-----------|----------|-------|---------|------------|
| 1/4W 1/2WS | 12Max | 0.56 | 12.7 | 12.7 | 3.85 | 6.35 | 5 | 0±1 | 9 | 18 | 100±1 | 16.5Max | 4 |
| 1/2W 1WS | 19Max | 0.56 | 12.7 | 12.7 | 3.85 | 6.35 | 5 | 0±1 | 9 | 18 | 100±1 | 16.5Max | 4 |
| 1W 2WS | 22Max | 0.65 | 12.7 | 12.7 | 3.85 | 6.35 | 5 | 0±2 | 9 | 18 | 100±1 | 16.5Max | 4 |
| 2W 3WS | 25Max | 0.75 | 12.7 | 12.7 | 3.85 | 6.35 | 5 | 0±2 | 9 | 18 | 100±1 | 16.5Max | 4 |

△ 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 |
|-------------|---------------|---------------|------------------|---------------|
| 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%(I) |

CR SERIES

CARBON FILM FIXED RESISTORS 碳膜固定电阻器

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 |
|---------------|-------------|---------------------|------------------------|---------------------------|
| 1/8W 1/4WS | T26 | 5.00 | 5.00 | 160.00 |
| | T52 | 5.00 | 5.00 | 100.00 |
| 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 |
|---------------|-------------------------|---------------------|------------------------|---------------------------|
| 1/8W 1/4WS | M、P | 1.00 | 10.00 | 60.00 |
| | P | 1.00 | 10.00 | 60.00 |
| 1/4W 1/2WS | FY、FKY、FYL、FKYL、M | 2.00 | 20.00 | 120.00 |
| | P | 0.50 | 5.00 | 18.00 |
| 1/2W 1WS | FY、FKY、FYL、FKYL、M | 1.00 | 5.00 | 30.00 |
| | P | 0.20 | 2.00 | 12.00 |
| 1W 2WS | FY、FKY、FYL、FKYL、M、MB、MK | 0.50 | 3.00 | 18.00 |
| | P | 0.20 | 2.00 | 12.00 |
| 2W 3WS | FY、FKY、FYL、FKYL、M、MB、MK | 0.20 | 2.00 | 12.00 |
| | P | 0.10 | 1.00 | 6.00 |
| 3W 5WS | FY、FKY、FYL、FKYL、M、MB、MK | 0.20 | 1.00 | 6.00 |
| | P | 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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