



四川航昱微电子科技有限公司

SICHUAN HANGYU MICROELECTRONICS TECHNOLOGY CO., LTD.

SPECIFICATION FOR APPROVAL

承认书

Spec. No.: HYV6355 Series

Issued Date: 2024-04-24

CUSTOMER:

客户

PART NAME: SMD Plastic Varistors

名称 SMD 塑封压敏电阻器

APPLICATION: Absorb the surge voltage

用途 吸收浪涌电压

PART NO.:

料号 HYV6355 series

UL FILE NO:

UL 证书号

CUSTOMER PART NO.:

客户料号

客户承认 CUSTOMER CONFIRM

| 承认章   | 核准      | 审核    | 经办人       |
|-------|---------|-------|-----------|
| STAMP | APPROVE | CHECK | SIGNATURE |
|       |         |       |           |

公司名称: 四川航昱微电子科技有限公司  
SICHUAN HANGYU MICROELECTRONICS TECHNOLOGY CO., LTD.

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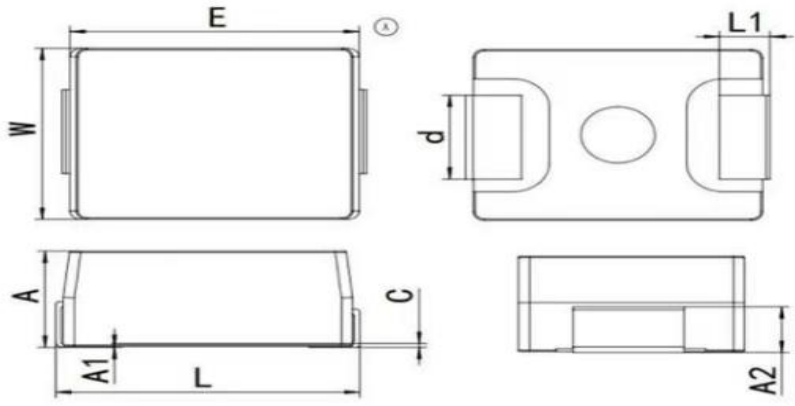
网址: <http://www.hywdz.com>

|                         |                       |
|-------------------------|-----------------------|
| Part No: HYV6355 series | Rev: 0/A (2024-04-24) |
|-------------------------|-----------------------|

1. Appearance 外形尺寸

|                 |  |
|-----------------|--|
| 1-1. Marking 标志 |  Logo 公司商标<br>V6355-471 Product Spec. 产品规格<br>240602 Batch no. 生产批号 |
|-----------------|--|

1-2. Dimensional Drawing (mm) 尺寸



| UNIT |     | E    | W    | A   | L    | A1   | A2  | d   | L1  | C    |
|------|-----|------|------|-----|------|------|-----|-----|-----|------|
| mm   | max | 17.0 | 15.5 | 4.5 | 17.5 | 0.15 | 2.6 | 6.5 | 5.5 | 0.25 |
|      | min | 15.0 | 13.5 | 3.9 | 15.5 | 0.10 | 1.8 | 5.5 | 4.5 | 0.15 |

1-3. Recommended solder pad layout (mm) 焊盘布局 (暂时不明)



unit:  $\frac{mm}{(mil)}$

2. Part numbering 命名方式

|               |                   |                      |                         |                  |                        |
|---------------|-------------------|----------------------|-------------------------|------------------|------------------------|
| HY            | V                 | 6355                 | 471                     | K                | J                      |
| Blue Sky Logo | Plastic Varistors | Product Size 产品尺寸 mm | Varistor Voltage 压敏电压 V | Tolerance 压敏电压允差 | High flux energy 高通流能量 |
| 航昱微 Logo      | 塑封压敏电阻            | 16.0*14.0            | 470                     | ±10%             | J-高焦耳<br>H-高能          |

Part No: HYV6355 series

Rev: 1/A (2024-04-24)

## 3. Electrical Characteristics 电气参数

(Ta=25℃)

| SMD Types<br>产品型号 | Maximum Allowable Voltage<br>可容许最大电压 |                     | Withstanding Surge Current (8/20 μs)<br>突波电流耐量 |            | Energy<br>能量<br>(10/1000μs) | Rated Power<br>额定功率 |
|-------------------|--------------------------------------|---------------------|--|------------|-----------------------------|---------------------|
|                   | V <sub>ACRMS</sub> [V]               | V <sub>DC</sub> [V] | 1 time[A]                                      | 2 times[A] | (1 time)[J]                 | [mW]                |
| HYV6355-221KJ     | 140                                  | 180                 | 4500   | 2500       | 60                          | 0.6                 |
| HYV6355-241KJ     | 150                                  | 200                 | 4500   | 2500       | 63                          | 0.6                 |
| HYV6355-271KJ     | 175                                  | 225                 | 4500   | 2500       | 70                          | 0.6                 |
| HYV6355-331KJ     | 210                                  | 275                 | 4500   | 2500       | 85                          | 0.6                 |
| HYV6355-361KJ     | 230                                  | 300                 | 4500   | 2500       | 93                          | 0.6                 |
| HYV6355-391KJ     | 250                                  | 320                 | 4500   | 2500       | 100                         | 0.6                 |
| HYV6355-431KJ     | 275                                  | 350                 | 4500   | 2500       | 115                         | 0.6                 |
| HYV6355-471KJ     | 300                                  | 385                 | 4500   | 2500       | 125                         | 0.6                 |
| HYV6355-511KJ     | 320                                  | 415                 | 4500   | 2500       | 125                         | 0.6                 |
| HYV6355-561KJ     | 350                                  | 455                 | 4500   | 2500       | 125                         | 0.6                 |
| HYV6355-621KJ     | 385                                  | 505                 | 4500   | 2500       | 125                         | 0.6                 |
| HYV6355-681KJ     | 420                                  | 560                 | 4500   | 2500       | 130                         | 0.6                 |
| HYV6355-751KJ     | 460                                  | 615                 | 4500   | 2500       | 143                         | 0.6                 |
| HYV6355-781KJ     | 485                                  | 640                 | 4500   | 2500       | 150                         | 0.6                 |
| HYV6355-821KJ     | 510                                  | 670                 | 4500   | 2500       | 157                         | 0.6                 |
| HYV6355-911KJ     | 550                                  | 745                 | 4500   | 2500       | 175                         | 0.6                 |

| Part No: HYV6355 series |                                      |                     | Rev: 1/A (2024-04-24)                               |            |                                   |                     |
|-------------------------|--------------------------------------|---------------------|---|------------|-----------------------------------|---------------------|
| SMD Types<br>产品型号       | Maximum Allowable Voltage<br>可容许最大电压 |                     | Withstanding Surge Current (8/20 $\mu$ s)<br>突波电流耐量 |            | Energy<br>能量<br>(10/1000 $\mu$ s) | Rated Power<br>额定功率 |
|                         | V <sub>ACRMS</sub> [V]               | V <sub>DC</sub> [V] | 1 time[A]   | 2 times[A] | (1 time)[J]                       | [mW]                |
| HYV6355-221KH           | 140                                  | 180                 | 6500  | 4000       | 60                                | 0.6                 |
| HYV6355-241KH           | 150                                  | 200                 | 6500  | 4000       | 63                                | 0.6                 |
| HYV6355-271KH           | 175                                  | 225                 | 6500  | 4000       | 70                                | 0.6                 |
| HYV6355-331KH           | 210                                  | 275                 | 6500  | 4000       | 85                                | 0.6                 |
| HYV6355-361KH           | 230                                  | 300                 | 6500  | 4000       | 93                                | 0.6                 |
| HYV6355-391KH           | 250                                  | 320                 | 6500  | 4000       | 100                               | 0.6                 |
| HYV6355-431KH           | 275                                  | 350                 | 6500  | 4000       | 115                               | 0.6                 |
| HYV6355-471KH           | 300                                  | 385                 | 6500  | 4000       | 125                               | 0.6                 |
| HYV6355-511KH           | 320                                  | 415                 | 6500  | 4000       | 125                               | 0.6                 |
| HYV6355-561KH           | 350                                  | 455                 | 6500  | 4000       | 125                               | 0.6                 |
| HYV6355-621KH           | 385                                  | 505                 | 6500  | 4000       | 125                               | 0.6                 |
| HYV6355-681KH           | 420                                  | 560                 | 6500  | 4000       | 130                               | 0.6                 |
| HYV6355-751KH           | 460                                  | 615                 | 6500  | 4000       | 143                               | 0.6                 |
| HYV6355-781KH           | 485                                  | 640                 | 6500  | 4000       | 150                               | 0.6                 |
| HYV6355-821KH           | 510                                  | 670                 | 6500  | 4000       | 157                               | 0.6                 |
| HYV6355-911KH           | 550                                  | 745                 | 6500  | 4000       | 175                               | 0.6                 |

Part No: HYV6355 series

Rev: 1/A (2024-04-24)

## 3. Electrical characteristics 电气参数

(Ta=25℃)

| SMD Types<br>产品型号 | Varistor Voltage<br>at 1 mA<br>压敏电压 | Max Clamping<br>Voltage at Class<br>Current<br>最大抑制电压 | Capacitance<br>电容量 |
|-------------------|-------------------------------------|---|--------------------|
|                   | [V](±10%)                           | [V]   | @1kHz [pF]         |
| HYV6355-221KJ     | 220                                 | 360   | 1000               |
| HYV6355-241KJ     | 240                                 | 395   | 900                |
| HYV6355-271KJ     | 270                                 | 455   | 740                |
| HYV6355-331KJ     | 330                                 | 550   | 650                |
| HYV6355-361KJ     | 360                                 | 595   | 560                |
| HYV6355-391KJ     | 390                                 | 650   | 510                |
| HYV6355-431KJ     | 430                                 | 710   | 460                |
| HYV6355-471KJ     | 470                                 | 775   | 430                |
| HYV6355-511KJ     | 510                                 | 845   | 430                |
| HYV6355-561KJ     | 560                                 | 925   | 360                |
| HYV6355-621KJ     | 620                                 | 1025  | 320                |
| HYV6355-681KJ     | 680                                 | 1120  | 290                |
| HYV6355-751KJ     | 750                                 | 1240  | 270                |
| HYV6355-781KJ     | 780                                 | 1290  | 270                |
| HYV6355-821KJ     | 820                                 | 1355  | 240                |
| HYV6355-911KJ     | 910                                 | 1500  | 220                |

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| SMD Types<br>产品型号 | Varistor Voltage<br>at 1 mA<br>压敏电压 | Max Clamping<br>Voltage at Class<br>Current<br>最大抑制电压 | Capacitance<br>电容量 |
|-------------------|-------------------------------------|---|--------------------|
|                   | [V](±10%)                           | [V]   | @1kHz [pF]         |
| HYV6355-221KH     | 220                                 | 360   | 1000               |
| HYV6355-241KH     | 240                                 | 395   | 900                |
| HYV6355-271KH     | 270                                 | 455   | 740                |
| HYV6355-331KH     | 330                                 | 550   | 650                |
| HYV6355-361KH     | 360                                 | 595   | 560                |
| HYV6355-391KH     | 390                                 | 650   | 510                |
| HYV6355-431KH     | 430                                 | 710   | 460                |
| HYV6355-471KH     | 470                                 | 775   | 430                |
| HYV6355-511KH     | 510                                 | 845   | 430                |
| HYV6355-561KH     | 560                                 | 925   | 360                |
| HYV6355-621KH     | 620                                 | 1025  | 320                |
| HYV6355-681KH     | 680                                 | 1120  | 290                |
| HYV6355-751KH     | 750                                 | 1240  | 270                |
| HYV6355-781KH     | 780                                 | 1290  | 270                |
| HYV6355-821KH     | 820                                 | 1355  | 240                |
| HYV6355-911KH     | 910                                 | 1500  | 220                |

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## 4. Mechanical Characteristics 机械性能

| Item<br>指标项目                       | Specification<br>技术要求   | Description<br>说明  |
|------------------------------------|---|--|
| Tensile<br>引出端拉伸强度                 | The lead wire is not broken and the resistor is not damaged. Pressure sensitive voltage change rate within $\pm 5\%$ .<br>引线无断裂，电阻器无损伤。压敏电压变化率在 $\pm 5\%$ 以内。 | Referring to GBT10193-1997(4.10) , UA1 UUB UC and Ud are quoted in IEC 43-2-21 to carry out the strength test of the leading end.<br>10 n tensile force .<br>参照 GBT10193-1997 第 4.10, 引用 IEC 43-2-21 中规定 Ua1、Ub、Uc 和 Ud 进行引出端强度试验。引出端施加10N拉力。  |
| Vibration<br>振动                    | No significant mechanical damage. The rate of change of voltage is less than 10% .<br>无明显机械损伤。压敏电压变化率小于10%。   | The test sample should be tested according to the GB 2423.10 Test Fe, the frequency is 10-55 Hz, the displacement amplitude is 0.75 mm, along the test sample x, Y two directions vibration 2Hr.<br>试验样品应根据GB 2423.10试验Fe进行试验，频率为10-55Hz，位移幅值为0.75mm，沿试验样品X, Y两个方向各振动2Hr。  |
| Solderability<br>可焊性               | About 95 % of the lead end is evenly covered by solder. Not less than 90 % of wetting force.<br>引线末端约95%被焊锡均匀覆盖。不小于润湿力的90。                                    | Referring to GBT10193-1997(4.11) , IEC 43-2-20 test method is used to insert the varistor (5 + 1) mm / s ~ (20 + 1) mm / s) into the molten solder at the temperature of (235 $\pm$ 0.5) ° C for 5 S.<br>参照GBT10193-1997第4.11, 引用IEC 43-2-20的试验方法，焊料温度 (235 $\pm$ 0.5) °C，将压敏电阻器以 (5+1) mm/s~ (20+1) mm/s的速度侵入熔融焊料中1.5至规定的深度，并保持5 S。 |
| Welding heat<br>resistance<br>耐焊接热 | No significant mechanical damage. Pressure sensitive voltage change rate within $\pm 5\%$ .<br>无明显机械损伤。压敏电压变化率在 $\pm 5\%$ 以内。                                 | According to 4.12 of GBT10193-1997 and the test Tb method stipulated in IEC 43-2-20, the pins of the psa were impregnated in a welding groove at (260 $\pm$ 5) ° C for (10+1) s.<br>参照GBT10193-1997第4.12, 引用IEC 43-2-20规定试验Tb方法，将压敏电阻器的引脚浸渍于 (260 $\pm$ 5) °C 的焊槽中，持续 (10+1) s。  |

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## 5. Environmentalb 耐候特性

| Characteristicsvv<br>项目             | Test Methods<br>试验方法   | Specifications<br>性能要求   |
|-------------------------------------|--|--|
| High Temperature<br>Storage<br>高温存储 | The specimen shall be subjected to $125\pm 2^{\circ}\text{C}$ for 1000 hours in a thermostatic bath without load and then be stored at room temperature and normal humidity for 1 to 2 hours. The change of $V_{1\text{mA}}$ shall be measured.<br><br>在 $125\pm 2^{\circ}\text{C}$ 无负荷存放 1000 小时, 其后在室温状态下, 1 到 2 小时以内, 测量 $V_{1\text{mA}}$ 。                                   | $ \Delta V_{1\text{mA}}/V_{1\text{mA}} $<br>$\leq 10\%$  |
| Humidity Storage<br>湿热湿热            | The specimen shall be subjected to $40\pm 2^{\circ}\text{C}$ , 90~95%RH for 1000hours without load and then stored at room temperature and normal humidity for 1 to 2 hours. The change of $V_{1\text{mA}}$ shall be measured.<br><br>在温度为 $40\pm 2^{\circ}\text{C}$ , 湿度为 90~95%RH 中无负荷放置 1000 小时, 其后在室温状态下, 1 小时以上 2 小时以内测量 $V_{1\text{mA}}$ 。                                 | $ \Delta V_{1\text{mA}}/V_{1\text{mA}} $<br>$\leq 10\%$  |
| Low Temperature<br>Storage<br>低温存储  | The specimen shall be subjected to $-40\pm 2^{\circ}\text{C}$ , for 1000 hours with-out load and then stored at room temperature and normal humidity for 1 to 2 hours. The change of $V_{1\text{mA}}$ shall be measured.<br><br>在温度为 $-40\pm 2^{\circ}\text{C}$ , 无负荷放置 1000 小时其后在室温状态, 1 到 2 小时以内测量 $V_{1\text{mA}}$ 。  | $ \Delta V_{1\text{mA}}/V_{1\text{mA}} $<br>$\leq 10\%$  |
| Temperature Cycle<br>温度快速变化         | The specimen shall be subjected to $-40\pm 2^{\circ}\text{C}$ , then to $125\pm 2^{\circ}\text{C}$ . At each temperature the specimen shall be stored for 30 minutes. The temperature cycle shall be applied for 5 times.<br><br>下限类别温度 $-40\pm 2^{\circ}\text{C}$ , 上限类别温度 $125\pm 2^{\circ}\text{C}$ , 共五个循环, 每个极限温度下放置 30 分钟, 进行外观检查和 $V_{1\text{mA}}$ 测量。                    | No remarkable<br>mechanical damage<br>$ \Delta V_{1\text{mA}}/V_{1\text{mA}} $<br>$\leq 10\%$<br>无可见损伤 |
| High Temperature<br>Load<br>高温负荷    | After being continuously applied the max. allowable voltage at $125\pm 2^{\circ}\text{C}$ for 1000 hours and then stored at room temperature and normal humidity for 1 to 2hours. Thereafter, the change of $V_{1\text{mA}}$ shall be measured.<br><br>在 $125\pm 2^{\circ}\text{C}$ 的温度下, 施加最大连续电压 1000 小时; 然后, 在室温状态下, 1 到 2 小时以内进行 $V_{1\text{mA}}$ 测量。                        | $ \Delta V_{1\text{mA}}/V_{1\text{mA}} $<br>$\leq 10\%$  |
| Humidity Load<br>湿热负荷               | The specimen shall be subjected to $40\pm 2^{\circ}\text{C}$ , 90~95%RH and the max. allow able voltage for 1000 hours and then stored at room temperature and normal humidity for 1to 2hours. Thereafter, the change of $V_{1\text{mA}}$ shall be measured.<br><br>在温度为 $40\pm 2^{\circ}\text{C}$ , 湿度为 90~95%RH 中, 施加最大连续电压 1000 小时, 其后在室温状态下, 1 到 2 小时以内测量 $V_{1\text{mA}}$ 。 | $ \Delta V_{1\text{mA}}/V_{1\text{mA}} $<br>$\leq 10\%$  |

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**6. Features 特点**

- Improved component design in a compact case. 改善产品的设计空间
- High surge current capability. 提供更高的产品通流量
- Superior performance at high temperature. 在更高温下使用
- Better stability and reliability under hot and humid conditions  
在湿热条件下有更好的稳定性和可靠性
- SMD mountable disk varistors, suitable for lead-free reflow / wave soldering.  
片式封装结构更适合回流焊和波峰焊

**7. Applications 应用领域**

- Power supplies for telecommunication systems. 通讯设备功率电源
- Protection for LED circuits. LED 电路保护
- Protection for consumer, industrial equipment. 消费类、工业类设备保护
- Protection for automotive electronics. 自动化设备保护

**8. Applicable standards 参照标准**

- UL1449
- TUV
- CQC (GB/T10193, GB/T10194, GB4943.1, GB8898)

**9. General technical data 技术要求**

| Parameter 项目                  | Value 范围    | Unit 单位           |
|-------------------------------|-------------|-------------------|
| Operating temperature<br>工作温度 | -10 to +125 | °C                |
| Storage temperature<br>贮存温度   | -10 to +45  | °C                |
| Electric strength<br>电气强度     | ≥2.5        | kV <sub>RMS</sub> |
| Insulation resistance<br>绝缘电阻 | ≥100        | MΩ                |

**10. Storage condition 贮存条件**

- As far as possible, the components should be employed within 24 months after delivery .  
从入库到使用时间不大于 24 个月。
- They should be left in their original packing to avoid soldering problems due to oxidized contacts. 为防止出现焊接问题产品尽量在使用前保持原包装。
- Storage temperature: - 10 up to + 45° C. 贮存温度在-10~45° C.
- Relative humidity: < 75 % 相对湿度 <75%。



