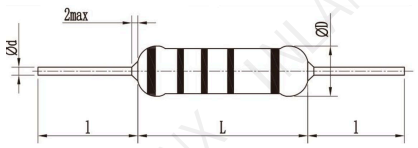
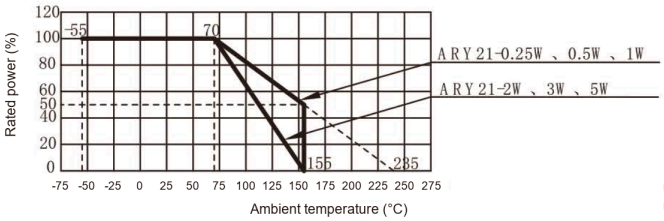
# ARY21 Metal Oxide Film Resistor

## Outline Drawing




## Derating Curve






Quality grade AEC-Q200. Detail specification Q/RU 637-2024; general specification AEC-Q200-2023.

## Dimensions • mm

| Power W | ΦD | L | Φd | Lead l |
|---|---|---|---|---|
| 0.25 | 1.9±0.2 | 3.8±0.7 | 0.5±0.05 | 28±2 |
| 0.5 | 2.5±0.2 | 6.6±0.3 | 0.6±0.05 | 26±2 |
| 1 | 3.6±0.3 | 9.6±0.9 | 0.7±0.05 | 28±2 |
| 2 | 4.0±0.5 | 12.4±0.6 | 0.8±0.05 | 26±2 |
| 3 | 5.9±0.6 | 15.9±1.1 | 0.8±0.05 | 26±2 |
| 5 | 8.4±0.6 | 24.7±0.8 | 0.8±0.05 | 33±2 |

## Electrical Specifications

≤4.7Ω: ±5%(J); >4.7Ω: ±1%(F), ±2%(G), ±5%(J). TCR <1Ω: ±250 ×10□□/K; ≥1Ω: ±100 ×10□□/K.

| Power W | Resistance Ω | Element limit V | Withstand V |
|---|---|---|---|
| 0.25 | 1~2M | 150 | 250 |
| 0.5 | 0.1~5.1M | 250 | 350 |
| 1 | 0.1~390k | 350 | 500 |
| 2 | 0.1~390k | 350 | 500 |
| 3 | 0.1~390k | 350 | 500 |
| 5 | 1~390k | 500 | 700 |

## Main Inspection Items

| Item | Test method | Requirement |
|---|---|---|
| Dielectric withstand | V-block, 60±5s, rated voltage | No breakdown or arcing |
| Solderability | Steam age 1h, 235±5°C, 2±0.5s | ≥95% lead area with smooth solder |
| High-temp storage | 125°C, 1000h, unpowered | ΔR≤±(5%R+0.05Ω) |
| Thermal shock | -55 to 155°C, 1000 cycles | ΔR≤±(5%R+0.05Ω) |
| Damp heat | 85°C, RH85%, 1000h, V=√(10%PR) | ΔR≤±(5%R+0.05Ω) |
| High-temp life | 70±2°C, min(√PR,Umax), 1.5h on/0.5h off, 1000h | ΔR≤±(5%R+0.05Ω) |
| Lead strength | 0.25W pull 5N/bend 2.5N; other pull 10N/bend 5N | ΔR≤±(1%R+0.05Ω) |
| Overload | min(2.5×rated,2×limit), 5s | ΔR≤±(2%R+0.05Ω) |
| High-frequency vibration | 10–2000Hz, 5g, 20min, XYZ 12 cycles each | ΔR≤±(1%R+0.05Ω) |
| Shock | Half-sine 100g, 6ms, 3.75m/s, 5 times each in 2 directions | ΔR≤±(1%R+0.05Ω) |
| Soldering heat | 260±5°C, 10±1s, immersion ≤1.5mm | ΔR≤±(1%R+0.05Ω) |
| ESD | HBM 2000V, once each polarity | ΔR≤±(1%R+0.05Ω) |
| Flammability | Vertical burn | V-0, afterflame <10s |
| Flame resistance | 9–32VDC in 1V steps, ≥1h each | No flame >3s, explosion, or >350°C ≥10s |

## Ordering Information

### ARY21-1W-100Ω-F

ARY21 / rated power / nominal resistance / tolerance code F±1%, G±2%, J±5%.