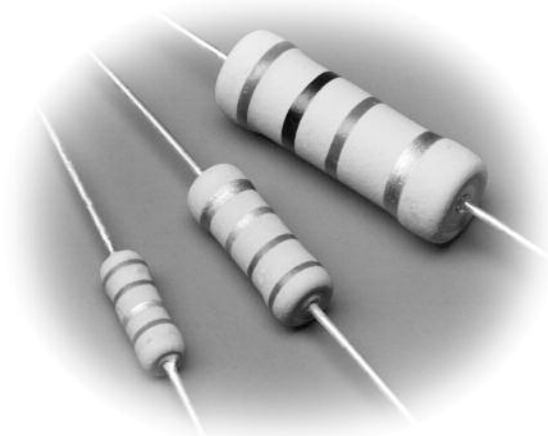
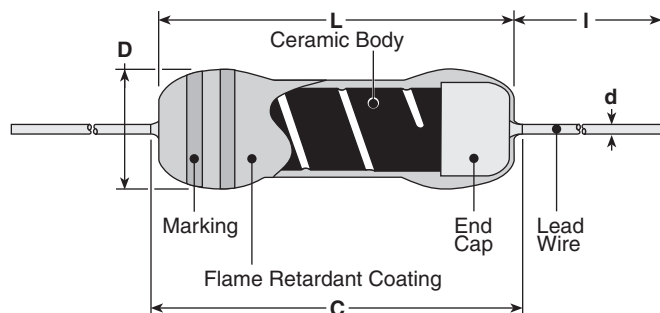




## features

- Flameproof silicone coating equivalent to (UL94V0)
- Suitable for automatic machine insertion
- High reliability for performance
- Marking: Blue-gray body color with color-coded bands
- Products with lead-free terminations meet EU RoHS and China RoHS requirements

## dimensions and construction



| Type            | Dimensions inches (mm)  |                |                        |               |                          |
|-----------------|-------------------------|----------------|------------------------|---------------|--------------------------|
|                 | L                       | C (max.)       | D                      | d (nom.)      | I*                       |
| MO1/2<br>MOX1/2 | .354±.039<br>(9.0±1.0)  | .437<br>(11.1) | .126±.02<br>(3.2±0.5)  | .028<br>(0.7) | .945 Min.<br>(24.0 Min.) |
| MO1<br>MOX1     | .472±.039<br>(12.0±1.0) | .59<br>(15.0)  | .157±.02<br>(4.0±0.5)  |               |                          |
| MO2<br>MOX2     | .610±.039<br>(15.5±1.0) | .709<br>(18.0) | .236±.039<br>(6.0±1.0) | .031<br>(0.8) | 1.18±.118<br>(30.0±3.0)  |
| MO3<br>MOX3     | .965±.039<br>(24.5±1.0) | 1.10<br>(28.0) | .354±.039<br>(9.0±1.0) |               | 1.50±.118<br>(38.0±3.0)  |

\* Lead length changes depending on taping and forming type.

## ordering information

| New Part # | MO        | 1                                                    | C                               | T52                                                                                                                                 | A                               | 473                                                                                               | J                             |
|------------|-----------|------------------------------------------------------|---------------------------------|-------------------------------------------------------------------------------------------------------------------------------------|---------------------------------|---------------------------------------------------------------------------------------------------|-------------------------------|
| Type       | MO<br>MOX | Power Rating<br>1/2: 0.5W<br>1: 1W<br>2: 2W<br>3: 3W | Termination Material<br>C: SnCu | Taping and Forming<br>Axial: T52, T521, T631<br>Stand-off Axial: L52, L521, L631, L, U, M Forming<br>(MO3/MOX3 bulk packaging only) | Packaging<br>A: Ammo<br>R: Reel | Nominal Resistance<br>2 significant figures + 1 multiplier<br>"R" indicates decimal on value <10Ω | Tolerance<br>G: ±2%<br>J: ±5% |

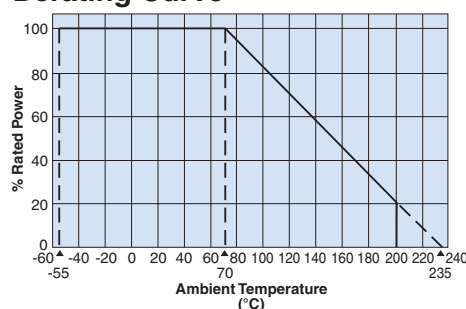
For further information on packaging, please refer to Appendix C.

## applications and ratings

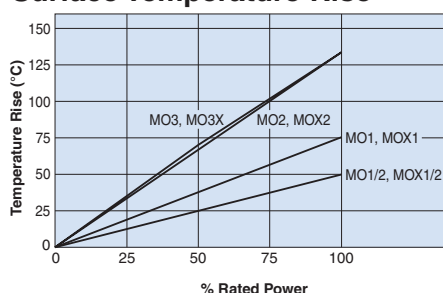
| Part Designation | Power Rating @ 70°C | Minimum Dielectric Withstanding Voltage | T.C.R. (ppm/°C) Max. | Resistance Range E-24 (G±2%) | Resistance Range E-24 (J±5%) | Absolute Maximum Working Voltage | Absolute Maximum Overload Voltage | Operating Temperature Range |      |
|------------------|---------------------|-----------------------------------------|----------------------|------------------------------|------------------------------|----------------------------------|-----------------------------------|-----------------------------|------|
| MO1/2            | 0.5W                | 400V                                    | ±200                 | 10Ω - 47kΩ                   | 10Ω - 47kΩ                   | 250V                             | 400V                              | -55°C to +200°C             |      |
| MO1              | 1.0W                | 500V                                    |                      |                              |                              | 10Ω - 100kΩ                      | 10Ω - 120kΩ                       |                             | 350V |
| MO2              | 2.0W                |                                         |                      | 10Ω - 150kΩ                  | 500V                         |                                  |                                   |                             | 800V |
| MO3              | 3.0W                |                                         |                      |                              |                              |                                  |                                   |                             |      |
| MOX1/2           | 0.5W                | 400V                                    |                      | 5.1Ω - 9.1Ω                  | 0.2Ω - 9.1Ω                  | E = √P x R                       | E x 2.5                           |                             |      |
| MOX1             | 1.0W                | 500V                                    |                      |                              |                              |                                  |                                   |                             |      |
| MOX2             | 2.0W                |                                         |                      |                              |                              |                                  |                                   |                             |      |
| MOX3             | 3.0W                |                                         |                      |                              |                              |                                  |                                   |                             |      |

## environmental applications

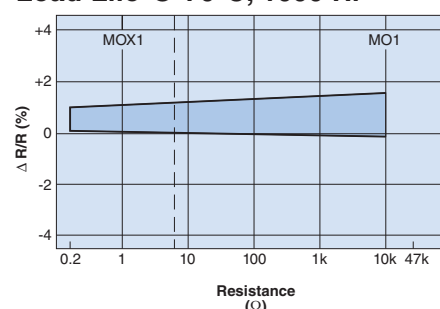
## Derating Curve



## Surface Temperature Rise



## Load Life @ 70°C, 1000 Hr



## Performance Characteristics

| Parameter                   | Requirement Limit                                             | Δ R ±(% + 0.05Ω)<br>Typical | Test Method                                                                                                                                                                                                                                                                                                                                                                             |
|-----------------------------|---------------------------------------------------------------|-----------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Resistance                  | Within specified tolerance                                    | —                           | Measuring points are at 10mm ±1mm from the end cap.                                                                                                                                                                                                                                                                                                                                     |
| T.C.R.                      | Within specified T.C.R.                                       | —                           | Room temperature +100°C                                                                                                                                                                                                                                                                                                                                                                 |
| Overload (Short time)       | ±1%                                                           | ±0.5%                       | Rated voltage x 2.5 or max. overload voltage for 5 seconds, whichever is lower                                                                                                                                                                                                                                                                                                          |
| Resistance to Solder Heat   | ±1%                                                           | ±0.5%                       | 260°C ±5°C, 10 seconds ± 1 second                                                                                                                                                                                                                                                                                                                                                       |
| Terminal Strength           | No lead-coming off and loose terminals                        | —                           | Twist 360°C, 5 times                                                                                                                                                                                                                                                                                                                                                                    |
| Rapid Change of Temperature | ±1%                                                           | ±0.5%                       | -55°C (30 minutes), +155°C (30 minutes), 5 cycles                                                                                                                                                                                                                                                                                                                                       |
| Moisture Resistance         | ±(5%+0.1Ω)                                                    | ±2%                         | 40°C ± 2°C, 90 - 95% RH, 1000 hours, 1.5 hr ON, 0.5 hr OFF cycle                                                                                                                                                                                                                                                                                                                        |
| Endurance at 70°C           | ±(5%+0.1Ω)                                                    | ±2%                         | 70°C ± 2°C, 1000 hours, 1.5 hr ON, 0.5 hr OFF cycle                                                                                                                                                                                                                                                                                                                                     |
| Resistance to Solvent       | No abnormality in appearance. Marking shall be easily legible | —                           | Ultrasonic washing with isopropyl alcohol for 2 minutes. Power: 0.3W/cm³, f: 28kHz, Temp: 35°C ±5°C                                                                                                                                                                                                                                                                                     |
| Flame Retardant             | No evidence of flaming or self-flaming                        | —                           | Flame test: the test flame shall be applied and removed for each 15 seconds respectively to repeat the cycle 5 times. Overload flame retardant: power (AC) corresponding to 2, 4, 8, 16 and 32 times the power rating shall be applied for each 1 minute until disconnection occurs. However the applied voltage shall not exceed the value of 4 times of the maximum operating voltage |

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