# Professional Leaded Resistors

## FEATURES

- Professional resistors in small outlines
- Low noise.

## APPLICATIONS

- All general purpose applications.

## DESCRIPTION

A homogeneous film of metal alloy is deposited on a high grade ceramic body. After a helical groove has been cut in the resistive layer, tinned connecting wires of electrolytic copper are welded to the end-caps. The resistors are coated with lacquer which provides electrical, mechanical, and climatic protection. Four or five colour code rings designate the resistance value and tolerance according to **IEC 60 062**.

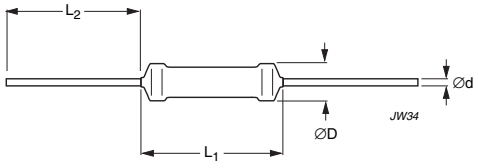
The resistors are completely Lead (Pb)-free, the pure tin plating provides compatibility with Lead (Pb)-free and lead-containing soldering processes.
Please note:
The resistors have to be ordered and will be delivered as MBA 0204-50. The equivalence with 5063JD series (spacemiser) is ensured.

## TECHNICAL SPECIFICATIONS

| DESCRIPTION | VALUE | |
|---|---|---|
| | 5063JD | |
| CECC size | A | |
| Resistance range | 1 Ω to 10 MΩ | |
| Resistance tolerance | ± 1 % | |
| Temperature coefficient | ± 50 ppm/K | |
| Operation mode | long term | standard |
| Climatic category (LCT/UCT/days) | 55/125/56 | 55/155/56 |
| Rated dissipation, $P_{70}$ | 0.25 W | 0.4 W |
| Operating voltage, $U_{max}$ AC/DC | 200 V | |
| Film temperature | 125 °C | 155 °C |
| Max. resistance change at $P_{70}$ for resistance range, | | |
| 1 000 h | ≤ 0.25 % | ≤ 0.5 % |
| 8 000 h | ≤ 0.5 % | ≤ 1.0 % |
| 225 000 h | ≤ 1.5 % | – |
| Specified lifetime | 225 000 h | 8 000 h |
| Permissible voltage against ambient: | | |
| 1 minute | 300 V | |
| continuous | 75 V | |
| Stability (ΔR/R max.) after: | | |
| load (1 000 hours) | ± 0.25 % + 0.05 Ω | ± 0.50 % + 0.05 Ω |
| climatic test | ± 1.0 % + 0.05 Ω | |
| resistance to soldering heat | ± 0.25 % + 0.05 Ω | |
| short time overload (400 V max.) | ± 0.25 % + 0.05 Ω | |

For detailed specifications, please see datasheet MBA 0204 Professional Series.

## DIMENSIONS




| DIMENSIONS - leaded resistor type and relevant physical dimensions | | | | |
|---|---|---|---|---|
| TYPE | $ØD_{max}$ (mm) | $L_{1\ max}$ (mm) | $L_{2\ max}$ (mm) | Ød (mm) |
| 5063JD | 1.6 | 3.6 | 29 | 0.5 |

## MECHANICAL DATA

**Mass per 100 units** = 13 g

## MARKING

The nominal resistance and tolerance are marked on the resistor using four or five colored bands in accordance with IEC publication 60062 “Color codes for fixed resistors”.

## MOUNTING

The resistors are suitable for processing on automatic insertion equipment in addition to cutting and bending machines. The minimum bending is 5 mm (.200 inch).

## OUTLINES

The length of the body ($L_1$) is measured by inserting the leads into holes of two identical gauge plates and moving these plates parallel to each other until the resistor body is clamped without deformation (“IEC publication 60294”).

| HISTORICAL PART NUMBER INFORMATION | | | | | |
|---|---|---|---|---|---|
| TYPE | TC ($X\ 10^{-6}/K$) | TOL. (%) | RESISTANCE RANGE | PART NUMBER | SPQ (units) |
| 5063JD | ± 50 | - | jumper(1) | 5063JD0R000J12AF5 | 5 000; tape & reel |
| | | - | jumper(1) | 5063JD0R000J18AF5 | 5 000; ammopack |
| | | ± 1 | 1 Ω to 10MΩ | 5063JDxxxxxF12AF5 | 5 000; tape & reel |
| | | ± 1 | 1 Ω to 10MΩ | 5063JDxxxxxF18AF5 | 5 000; ammopack |

**Note**

1. A 0 Ω jumper is available with maximum resistance $R_{max} \leq 10$ mΩ at 3 A.

## EXAMPLE HISTORICAL PART NUMBER

The historical part number of a 5063JD resistor, value 5 600 Ω ± 1 %, taped on a bandolier of 5 000 units in tape on reel is: 5063JD5K600F12AF5.

## PART NUMBER AND PRODUCT DESCRIPTION

**Part Numbering: MBA02040C562RFCT**

| M | B | A | 0 | 2 | 0 | 4 | 0 | C | 5 | 6 | 2 | 0 | F | C | T | 0 | 0 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|

| Model | SPECIAL CHARACTER | TC | VALUE | TOLERANCE | PACKAGING | Special |
|---|---|---|---|---|---|---|
| **MBA 0204** | **0** = Neutral | **C =** ± 50 ppm/K<br>**Z = Jumper** | **3 digit value**<br>**1 digit multiplier**<br>MULTIPLIER<br>7 = $*10^{-3}$<br>8 = $*10^{-2}$<br>9 = $*10^{-1}$<br>0 = $*10^{0}$<br>1 = $*10^{1}$<br>2 = $*10^{2}$<br>3 = $*10^{3}$<br>4 = $*10^{4}$<br>5 = $*10^{5}$<br>6 = $*10^{6}$ | **F** = ± 1 % | **CT** = CT (5 000 pcs ammopack)<br>**RP** = RP (5 000 pcs tape and reel) | 00 = Standard |

**Product Description: MBA 0204-50 1% 562R CT**

| MBA0204 | 50 | 1.0 % | 562R | CT |
|---|---|---|---|---|
| MODEL | TC | TOLERANCE | RESISTANCE VALUE | PACKAGING |
| MBA 0204 | ± 50 ppm/K | ± 1 % | **49K9** = 49.9 KΩ<br>**50R1** = 50.1 Ω | CT<br>RP |