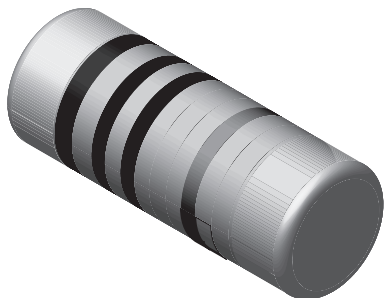


Metal Film, Cylindrical Resistors



FEATURES

- Stable metal film on high quality ceramic
- Low TC and tight tolerances
- Excellent stability
- Pure tin termination on nickel barrier, plated on press fit steel caps
- Compatible with lead (Pb)-free and lead containing soldering processes
- Lead (Pb)-free and RoHS compliant



STANDARD ELECTRICAL SPECIFICATIONS

| MODEL | POWER RATING ¹⁾ P_{70} W | LIMITING ELEMENT VOLTAGE ²⁾ DC or AC rms V | TEMPERATURE COEFFICIENT ppm/K | TOLERANCE % | RESISTANCE RANGE Ω | E-SERIES |
|--|---|---|-------------------------------------|----------------|---------------------------------|----------|
| SMM0102 | 0.20 | 100 | ± 15 | ± 0.1 | 100R - 100K | 24 - 96 |
| SMM0102 | 0.20 | 100 | ± 25 | ± 0.1 | 100R - 100K | 24 - 96 |
| SMM0102 | 0.20 | 100 | ± 50 | ± 1.0 | 10R - 2M21 | 24 - 96 |
| Zero-Ohm-Resistor : OMM0102 $R_{\max} = 10 \text{ m}\Omega$ $I_{\max} = 2 \text{ A}$ | | | | | | |

Note

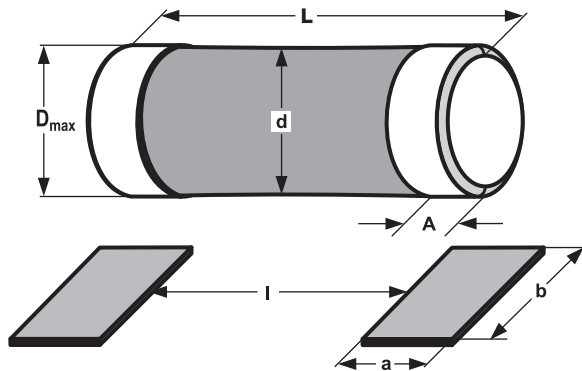
1. Permissible dissipation depends on the maximum temperature at the solder point, the component placement density and the substrate material.
2. Rated voltage: $\sqrt{P \times R}$.
- Further values and tolerances on request
- Marking: According to IEC 60062; see also data sheet "surface mount resistor marking" (document number: 20020)

TECHNICAL SPECIFICATIONS

| PARAMETER | UNIT | SMM0102 |
|---|--------------------|----------------|
| Rated Dissipation at 70 °C | W | 0.2 |
| Limiting Element Voltage, DC or AC rms | V | 100 |
| Insulation Voltage (1 min), DC or AC peak | V | 150 |
| Thermal Resistance ³⁾ | K/W | ≤ 250 |
| Insulation Resistance | Ω | $\geq 10^{10}$ |
| Category Temperature Range | °C | - 55 to + 125 |
| Failure Rate | $10^{-9}/\text{h}$ | < 2 |
| Weight/1000 pcs | g | 7.8 |

Note

3. Based on measurements on test board acc. to EN 140400.

DIMENSIONS


| MODEL | DIMENSIONS [in millimeters] | | | | |
|----------------|-----------------------------|----------|------------|------------------|------------------|
| | D _{max} | d* | L | A _{max} | A _{min} |
| SMM0102 | 1.1 | D - 0.05 | 2.2 - 0.15 | 0.45 | 0.35 |

* d measured in the middle of the resistor

| MODEL | SOLDER PAD DIMENSIONS [in millimeters] | | | | | |
|----------------|--|-----|-----|----------------|-----|-----|
| | REFLOW SOLDERING | | | WAVE SOLDERING | | |
| | a | b | l | a | b | l |
| SMM0102 | 0.5 | 1.3 | 1.3 | 0.6 | 1.3 | 1.3 |

PART NUMBER AND PRODUCT DESCRIPTION¹⁾

PART NUMBER²⁾: SMM01020D5620BB3

PART NUMBER²⁾: OMM01020000000B3

| | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| S | M | M | 0 | 1 | 0 | 2 | 0 | D | 5 | 6 | 2 | 0 | B | B | 3 | 0 | 0 |
| O | M | M | 0 | 1 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | B | 3 | 0 | 0 |

| MODEL/SIZE | SPECIAL CHARACTER | TC | VALUE | TOLERANCE | PACKING ³⁾ | SPECIAL |
|----------------------------------|-------------------|--|--|--|--|---------------------------------|
| SMM0102 OMM0102 | 0 = neutral | E = ± 15 ppm/K D = ± 25 ppm/K C = ± 50 ppm/K 0 = Jumper | 3 digit value 1 digit multiplier 0000 = Jumper Multiplier 9 = *10 ⁻¹ 0 = *10 ⁰ 1 = *10 ¹ 2 = *10 ² 3 = *10 ³ 4 = *10 ⁴ | B = ± 0.1 % F = ± 1 % 0 = Jumper | B1 B3 B0 M8 | up to 2 digits 00 = standard |

PRODUCT DESCRIPTION: SMM0102 25 562R 0.1% B3

PRODUCT DESCRIPTION: OMM0102 0R0 B3

| | | | | |
|----------------------------------|--|--|------------------|--|
| SMM0102 | 25 | 562R | 0.1 % | B3 |
| OMM0102 | - | 0R0 | - | B3 |
| MODEL | TC | RESISTANCE VALUE | TOLERANCE | PACKING ³⁾ |
| SMM0102 OMM0102 | ± 15 ppm/K ± 25 ppm/K ± 50 ppm/K | 100 = 100 Ω 2M21 = 2.21M Ω 0R0 = jumper | ± 0.1 % ± 1 % | B1 B3 B0 M8 |

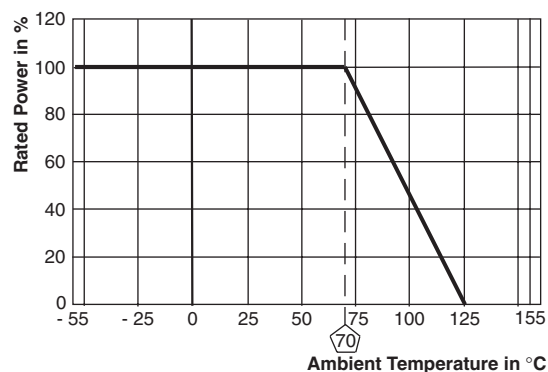
Note

- Products can be ordered using either the PRODUCT DESCRIPTION or the PART NUMBER.
- The PART NUMBER is shown to facilitate the introduction of a unified part numbering system. Currently, this PART NUMBER is applicable in the Americas only.
- Please refer to table PACKING, see below.

| PACKING | | | | | |
|---------|---|-------------|------|-------------------------------|------|
| MODEL | BLISTER TAPE ON REEL ACC IEC 60286-3 | | | BULK CASE ACC. IEC 60286-6 | |
| | DIAMETER | PIECES/REEL | CODE | PIECES/BULK CASE | CODE |
| SMM0102 | 180 mm/7" | 1000 | B1* | 8000 | M8 |
| OMM0102 | 180 mm/7" | 3000 | B3 | | |
| | 330 mm/13" | 10000 | B0 | | |

• For further information about packing see also data sheet "surface mount resistor packing" (document number: 20014)

* For $TC \leq 25$ ppm/K and Tolerance ≤ 0.25 % only



Derating



| PERFORMANCE | | |
|--|--|----------------------------------|
| TEST | CONDITIONS OF TEST | REQUIREMENTS¹⁾ |
| Endurance Test at 70 °C IEC 60115-1, 4.25.1 | 1000 hours at 70 °C, 1.5 hours "ON", 0.5 hours "OFF" 8000 hours at 70 °C, 1.5 hours "ON", 0.5 hours "OFF" | $\leq 0.25 \%$ $\leq 0.5 \%$ |
| Endurance at UCT IEC 60115-1, 4.25.3 | 1000 hours at 125 °C without load | $\leq 0.5 \%$ |
| Overload Test IEC 60115-1, 4.13 | Short time overload for 2 seconds at 6.25 x rated power | $\leq 0.1 \%$ |
| Thermal Shock IEC 60115-1, 4.19 and IEC 60068-2-14 | Rapid change between upper and lower category temperature, 5 cycles | $\leq 0.1 \%$ |
| Damp Heat Steady State IEC 60115-1, 4.24 and IEC 60068-2-78 | 56 days at 40 °C and 93 % relative humidity | $\leq 0.5 \%$ |
| Resistance to Soldering Heat IEC 60115-1, 4.18 and IEC 60068-2-58 | 10 seconds at 260 °C solder bath temperature | $\leq 0.1 \%$ |

Note

1. For a resistance range from 10 Ω to 221 k Ω .

| APPLICABLE SPECIFICATIONS |
|--|
| <ul style="list-style-type: none">• EN 140401-803• EN 140400• EN 60115-1 |



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