

SMT / SMD (Surface Mounting Technology) for Reflow-soldering

- According to DIN EN 61810-1, DIN EN 60664-1
- Clearance and creepage distances:
Contact - coil ≥ 5.5 mm
- Power miniature relay for SMD mounting
- High switching power AC 250 V / 5 A
- High dielectric strength 4 kV
- High limiting continuous current $I_{th} = 5$ A
- Compact size $V = 2.47$ cm³

Applications

- Control technique
- Interface

Approvals and Markings



Technical Data

| Relaistyp | OW 5699 |
|---|--|
| 1.0 Relay coil | |
| 1.1 Nominal voltage | DC 4; 5; 6; 12; 20; 24; 48 V |
| 1.2 Nominal consumption | 250 mW (1 NO), 310 mW (1 changeover contact) |
| 1.11 Voltage range | 0.75 ... 1.6 U _N |
| 1.13 Holding power | 62.5 mW (NO), 77.5 mW (changeover contact) |
| 2.0 Contacts | |
| 2.1 Contact arrangement | 1 NO, 1 changeover contact |
| 2.2 Contact material | AgSnO ₂ , AgNi ¹⁾ |
| 2.3 Rated insulation voltage | AC 250 V |
| Switching voltage min./max. | AC/DC 10 V / DC 120 V, AC 250 V ¹⁾ |
| 2.4 Limiting continuous current I _{th} | 5 A |
| Switching current min./max. | 0.01 A ²⁾ / 5 A |
| 2.5 Switching power min./max. | 0.1 VA / 1250 VA |
| Switching power min./max. | 0.1 W / 120 W |
| 2.6 Switching capacity to IEC/EN 60947-5-1 | |
| AC 15 | NC: 230 / 1 NO: 230 / 3 |
| 2.7 Electrical life | |
| at AC 230 V, 1 A, cosφ = 1 | > 5 x 10 ⁵ switching cycles |
| at AC 230 V, 5 A, cosφ = 1 | > 1.5 x 10 ⁵ switching cycles |
| 2.8 Max. switching frequency | 20 switching cycles/s |
| 2.9 Response time / Release time | ≤ 8 ms (typ. 5) / ≤ 4 ms (typ. 2) |
| 2.10 Contact force | 8 cN (1 NO), 8 cN (1 changeover contact, NC and NO) |
| 3.0 Other | |
| 3.1 Mechanical life | ≥ 5 x 10 ⁷ switching cycles |
| 3.2 Temperature range | - 40 ... + 80 °C |
| 3.3 Degree of protection | Wash proof RT III |
| 3.5 Rüttelfestigkeit | 10 ... 55 Hz; 1.2 mm Amplitude; 10 g max. IEC/EN 60068-2-6 |
| 3.6 Climate resistance | 20 / 080 / 04 (climate category); A/B/D IEC/EN 60068-1 |
| 3.8 Insulation according to IEC 60664-1 | |
| Rated insulation voltage | AC 250 V |
| Pollution degree | 3 |
| Overvoltage category | III |
| Test voltage | |
| contact-coil (1 min) | ≥ AC 4 kV eff. |
| Clearance and creepage distances | ≥ 5.5 mm (safe separation acc. to EN 50178) |
| 3.9 Weight | Approx. 5 g |
| 4.0 Packing | |
| 4.1 In palette | 100 pieces |
| 4.2 In case package | On request |
| 5.0 Solder method | |
| 5.1 Solder method /-temperature /-duration | Reflow-convection soldering / 260 °C / 10 s |

¹⁾ Special version with gold-contacts with 3 μm Au for low loads (0.1 ... 60 V, 1 ... 300 mA) on request

²⁾ Typical values

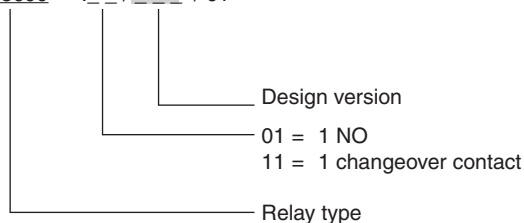
Design versions

| U _N (DC V) | Voltage range (DC V) | R _{Coil} Ω ±10% | OW 5699.01/_ _ _ | |
|--------------------------|-------------------------|-----------------------------|--------------------------------|-----------------------|
| | | | AgSnO ₂ + 0.3 μm Au | AgNi 0,15 + 0.3 μm Au |
| 4.5 | 3.0 ... 9.9 | 78 | 351 | 371 |
| 6 | 4.3 ... 13.2 | 155 | 352 | 372 |
| 12 | 8.0 ... 26.4 | 600 | 353 | 373 |
| 20 | 13.0 ... 44.0 | 1600 | 354 | 374 |
| 24 | 16.0 ... 52.8 | 2400 | 355 | 375 |
| 48 | 32.0 ... 105.0 | 9216 | 356 | 376 |

| U _N (DC V) | Voltage range (DC V) | Resistance at 20°C Ω (±10%) | OW 5699.11/_ _ _ | |
|--------------------------|----------------------|-----------------------------------|--------------------------------|-----------------------|
| | | | AgSnO ₂ + 0.3 μm Au | AgNi 0,15 + 0.3 μm Au |
| 4.5 | 3.3 ... 7.2 | 65 | 361 | 381 |
| 6 | 4.5 ... 9.6 | 115 | 362 | 382 |
| 12 | 9.0 ... 19.2 | 465 | 363 | 383 |
| 20 | 15.0 ... 32.0 | 1250 | 364 | 384 |
| 24 | 18.0 ... 38.4 | 1860 | 365 | 385 |
| 48 | 36.0 ... 76.8 | 6310 | 366 | 386 |

Ordering Example

OW 5699 _ _ / _ _ / 61*)

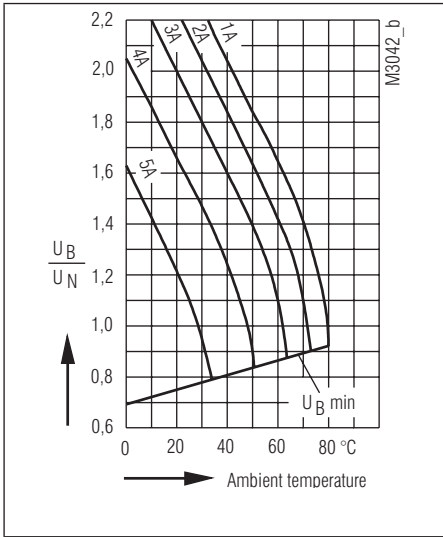


Notes

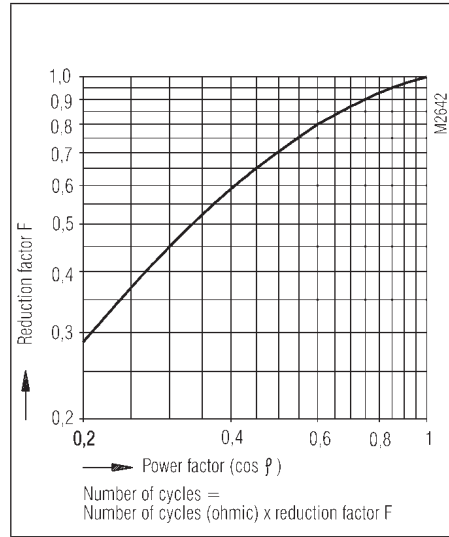
For the use and processing of our PCB relays, please refer to the **application and processing instructions** at www.dold.com

*) /61 cURus approval

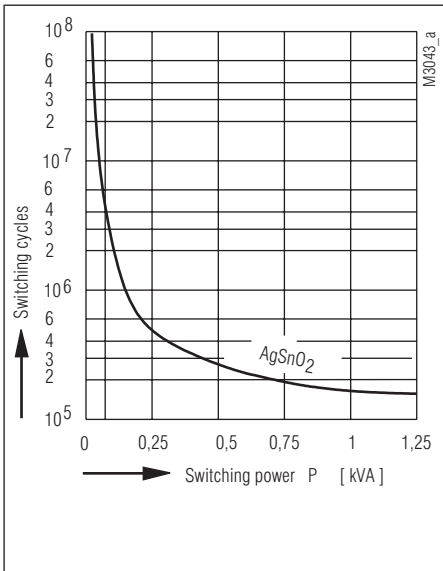
Characteristics



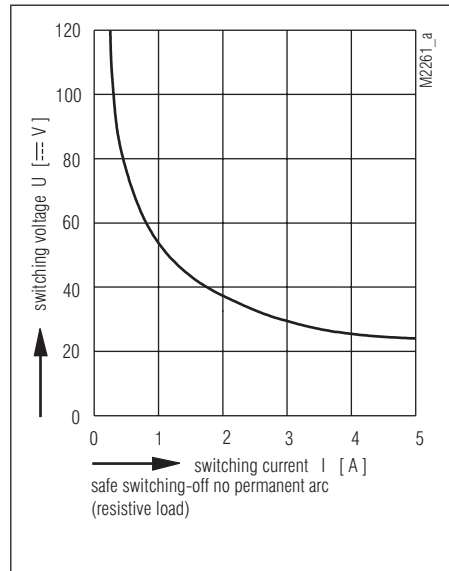
Operating voltage limit curve



Reduction factor for inductive loads



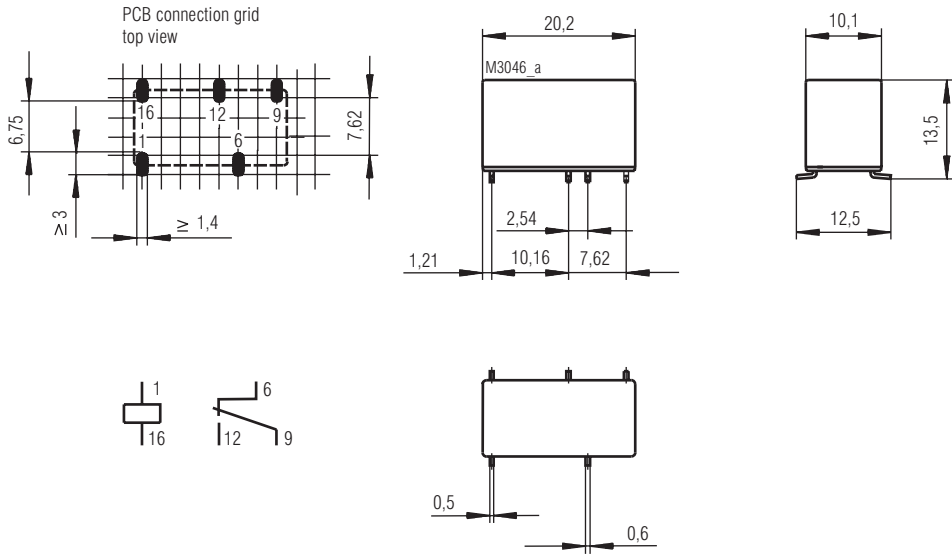
Contact service life



Arc limit curve

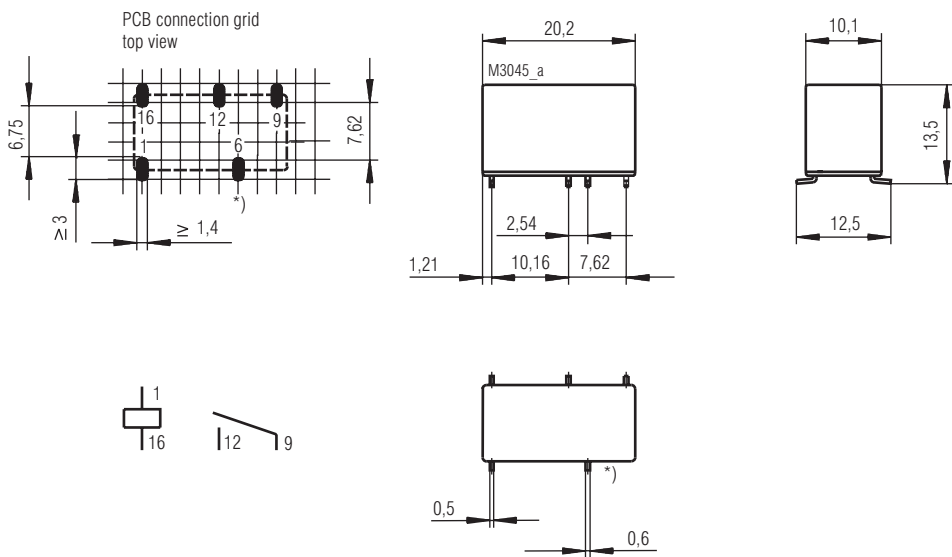
Drilling plan (solder side)

OW 5699.11 SMD



The tolerance of all pins being on the same level is +0,1

OW 5699.01 SMD



The tolerance of all pins being on the same level is +0,1

*) Pin 6 and Pin 9 have same potential in initial state

Connection for basic grid dimensions 2.5 mm as well as 2.54 mm according to IEC/EN 60097 and IEC 60326 average