

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 V	4,5, 6, 12, 20, 24, 48
1.2 Nominal consumption	mW	250 (1 NO), 310 (1 changeover contact)
1.11 Voltage range	U_N	0.75 ... 1.6
1.13 Holding power	mW	62.5 (NO) 77.5 (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 V	250
Switching voltage min./max.	V	AC/DC 10 / DC 120, AC 250 ¹⁾
2.4 Limiting continuous current I_{th}	A	5
Switching current min./max.	A	0,01 ²⁾ / 5
2.5 Switching power min./max.	VA	0.1 / 1 250
Switching power min./max.	W	0.1 / 120
2.6 Switching capacity to IEC/EN 60947-5-1		
AC 15	AC V/A	NC: 230 / 1 NO: 230 / 3
2.7 Electrical life		
at AC 230 V, 1 A, $\cos\phi = 1$	switching cycles	$> 5 \times 10^5$
at AC 230 V, 5 A, $\cos\phi = 1$	switching cycles	$> 1.5 \times 10^5$
2.8 Max. switching frequency	switching cycles/s	20
2.9 Response time / Release time	ms	≤ 8 (typ. 5) / ≤ 4 (typ. 2)
2.10 Contact force	cN	8 (1 NO), 8 (1 changeover contact, NC and NO)
3.0 Other		
3.1 Mechanical life	switching cycles	$\geq 5 \times 10^7$
3.2 Temperature range	°C	- 40 ... + 80
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 V	250
Pollution degree		3
Overvoltage category		III
Test voltage		
contact-coil (1 min)	AC kV eff.	≥ 4
Clearance and creepage distances	mm	≥ 5.5 (safe separation acc. to EN 50178)
3.9 Weight	g	approx. 5
4.0 Packing		
4.1 in palette	piece	100
4.2 in case package	piece	on request
5.0 Solder method		
5.1 Solder method /-temperature /-duration	°C / s	Reflow-convection soldering / 260 / 10

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

²⁾ Typical values

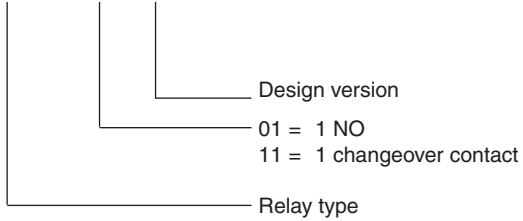
Design Versions

U _N (DC V)	Voltage range (DC V)	Resistance at 20°C 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	155	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

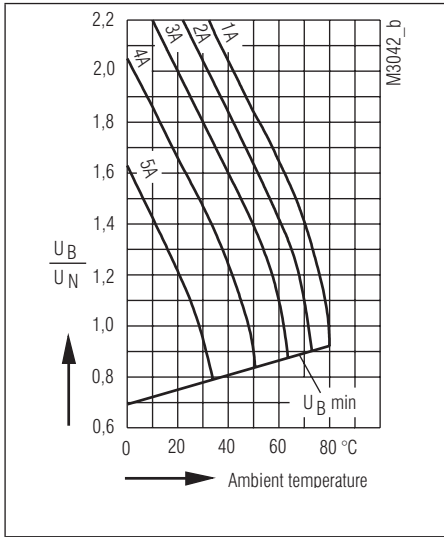
Ordering Example

OW 5699 _ _ _ / _ _ _ / 61*)

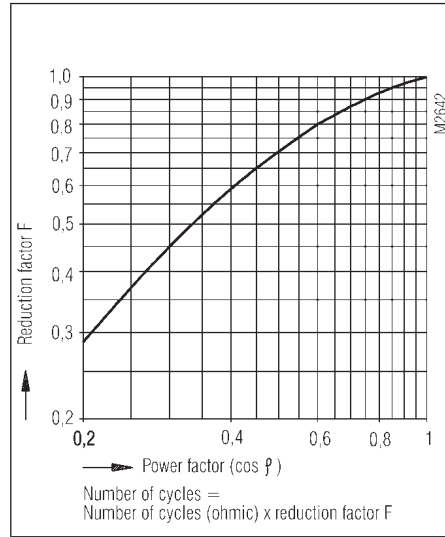


*) /61 cURus approval

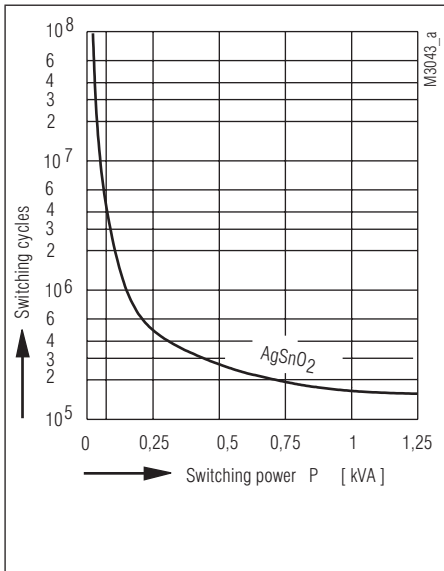
Characteristics



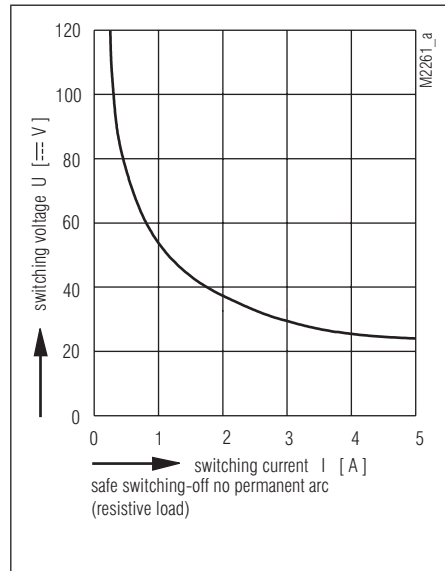
Operating voltage limit curve



Reduction factor for inductive loads



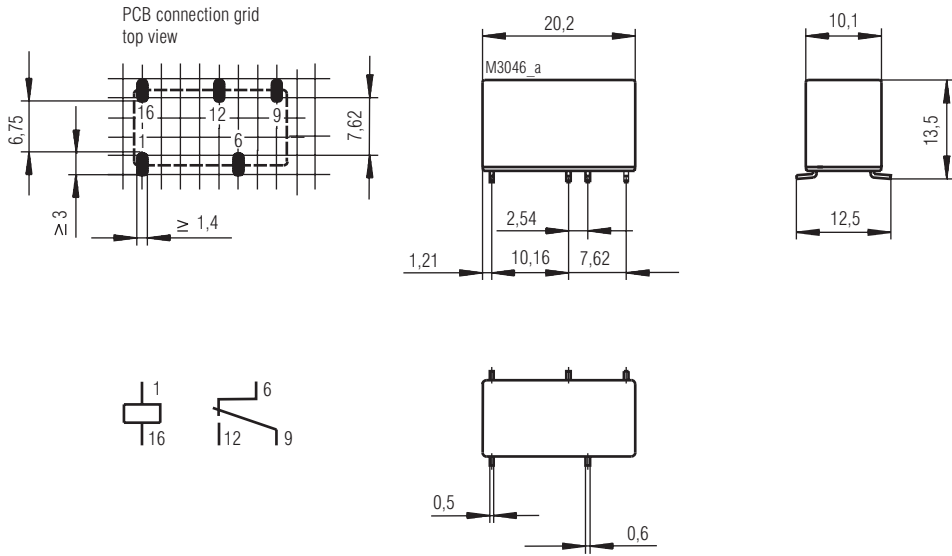
Contact service life



Arc limit curve

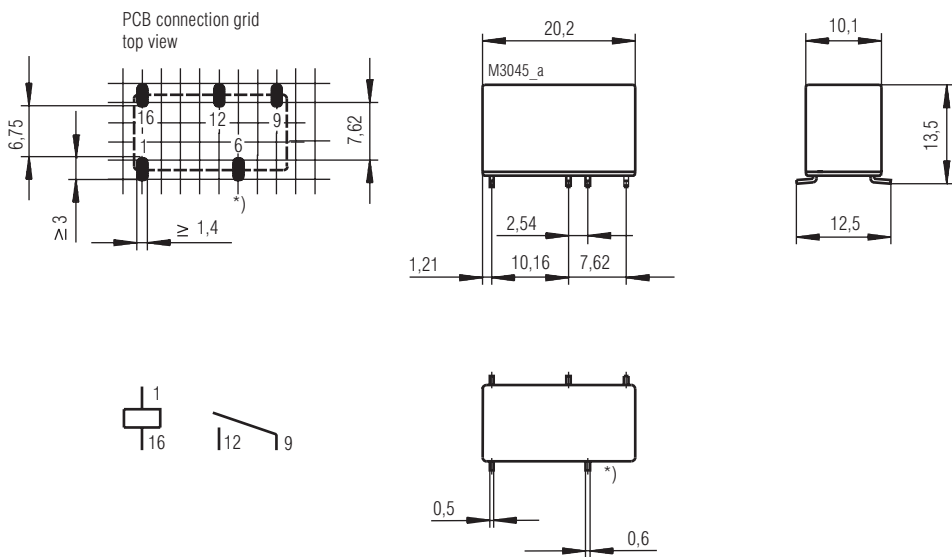
Drilling plan (solder side)

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