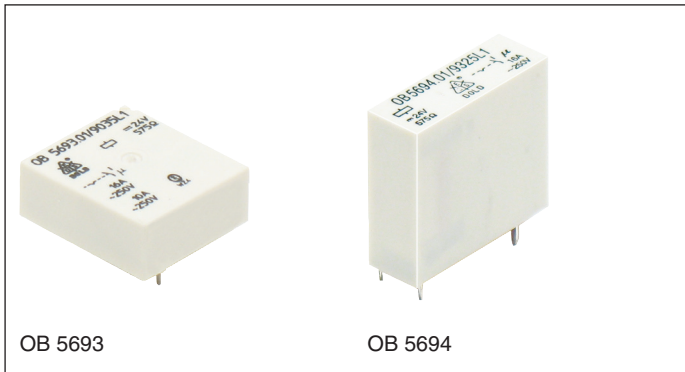


PCB Relays

Printed Circuit Board Relay bistable OB 5693, OB 5694



- According to DIN EN 61810-1, IEC/EN 60669-1
- Switching reliability according to IEC/EN 60669-2-2
- Safe separation according to IEC/EN 61140, IEC/EN 60335
- OB 5693: horizontal model
- OB 5694: vertical model
- Bistable, mechanical latching of contact
- For impulse operation, at failure operation 100 % ED possible
- Same pulse (energy and direction) for both switching positions
- AC and DC - model
- Patent on function principle
- On request wash proof

Application

- Remote switch
- Switching of sockets

Technical Data

Relay type

1.0 Coil

1.1	Nominal voltage	AC V	12, 24, 42, 230	50/60 Hz
		DC V	6, 12, 15, 24, 48, 60, 110	
1.2	Nominal consumption	W / VA	1 / 1.4	

2.0 Contacts

2.1	Contact arrangement	1 changeover contact or 1 NO		
2.2	Contact material	AgSnO ₂ ; AgNi		
2.3	Rated insulation voltage	AC V	250	
	Switching voltage min./max.	V	10 / 400	
2.4	Limiting continuous current I _m	A	16	
	Switching current min./max.	A	10 mA ¹⁾ / 50 (20 ms)	
2.5	Switching power min./max.	VA	3 / 4000	
	Switching power min./max.	W	35 / 300	
	Incandescent lamp load	W	1500	
2.7	Electrical life	switching cycles	at 1 s On, 1 s Off (see contact service life)	
	at AC 250 V 16 A cos φ = 1	switching cycles	≥ 5 x 10 ⁴	
2.8	max. switching frequency	switching cycles /s	5	
2.10	Contact force	cN	≥ 8	
2.14	Contact gap	mm	≥ 0.5	

3.0 Other

3.1	Mechanical life	switching cycles	DC ≥ 10 x 10 ⁶ , AC ≥ 1 x 10 ⁵	
3.2	Temperature range	°C	- 40 ... + 75	
3.3	Degree of protection	Solder line proof RT II		
3.5	Vibration resistance	5 g, bis max. 100 Hz		
3.6	Climate resistance	25 / 050 / 04 (climate category); A / B / D IEC/EN 60068-1		

If no limit values stated the above values are typical values for the mean value.

All values are related to 20°C and for new products.

¹⁾ Typical values ²⁾ Only valid for the stated temperature range (≠ EN 61 810) different values (derating) see operating voltage limit curve

Technical Data

3.8 Insulation according to IEC 60664-1			
Rated insulation voltage	AC V		250
Contamination level			3
Overtoltage category			III
Test voltage			
contact-coil (1 min)	AC kV eff.		≥ 4
Transient voltage			
contact-coil (1.2 - 50 μs)	kV		≥ 6
Clearance and creepage distances			
contact-coil	mm		≥ 8
3.9 Weight	g		approx. 15
4.0 Packing			
4.1 on cardboard	Stück	OB 5693: 32;	OB 5694: 56
4.2 in case package	Stück	OB 5693: 320;	OB 5694: 280
5.0 Solder method			
5.1 Solder method /-temperature /-duration	°C / s		Wafer soldering / 260 / 5

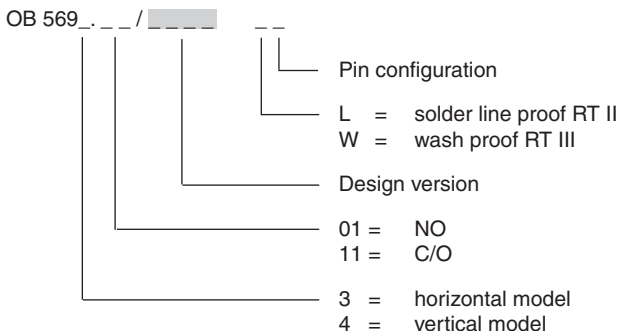
Design Version OB 5693

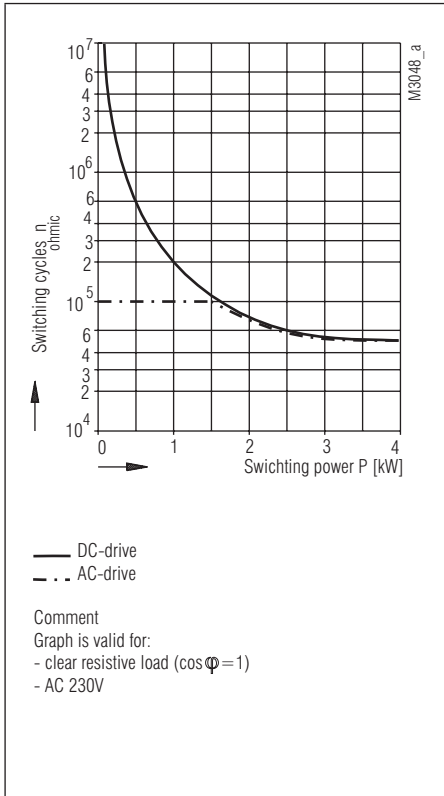
Nominal voltage U_N		Voltage range ²⁾ V	Resistance Ω ($\pm 10\%$)	AgSnO ₂		Ag Ni + 0.2 μm Au	
DC V	AC V			.01/	.11/	.01/	.11/
6		4.8 ... 6.6	38	9031	9001	9141	9121
12		9.6 ... 13.2	150	9032	9002	9142	9122
15		12 ... 16.5	220	9033	9003	9143	9123
20		16 ... 22	410	9034	9004	9144	9124
24		19.2 ... 26.4	575	9035	9005	9145	9125
48		38.4 ... 52.8	2 500	9036	9006	9146	9126
60		48 ... 66	3 600	9037	9007	9147	9127
110		88 ... 121	12 100	9038	9008	9148	9128
	12	9.6 ... 13.2	65	9182	9152	9232	9222
	24	19.2 ... 26.4	250	9181	9151	9231	9221
	42	33.6 ... 46.2	830	9183	9153	9233	9223
	230	184 ... 253	25 000	9187	9157	9235	9225

Design Version OB 5694

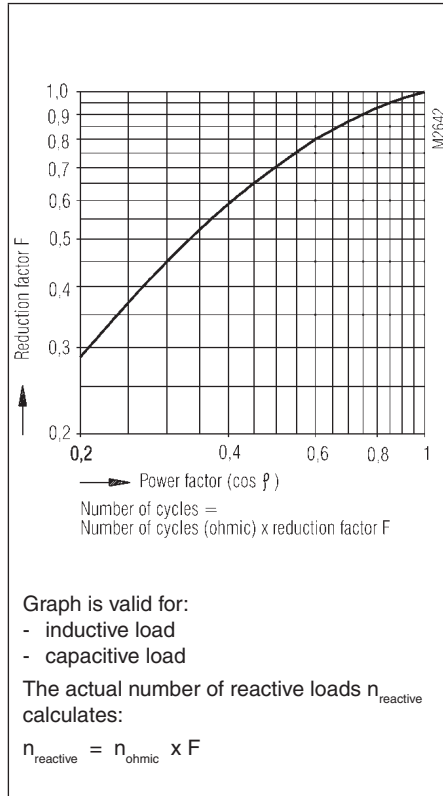
Nominal voltage U_N		Voltage range ²⁾ V	Resistance Ω ($\pm 10\%$)	AgSnO ₂		Ag Ni + 0.2 μm Au	
DC V	AC V			.01/	.11/	.01/	.11/
6		4.8 ... 6.6	38	9321	9301	9331	9311
12		9.6 ... 13.2	150	9322	9302	9332	9312
15		12 ... 16.5	220	9323	9303	9333	9313
20		16 ... 22	410	9324	9304	9334	9314
24		19.2 ... 26.4	575	9325	9305	9335	9315
	12	9.6 ... 13.2	65	9422	9402	9432	9412
	24	19.2 ... 26.4	250	9423	9403	9433	9413
	42	33.6 ... 46.2	830	9424	9404	9434	9414
	230	184 ... 253	25 000	9425	9405	9435	9415

Ordering Example

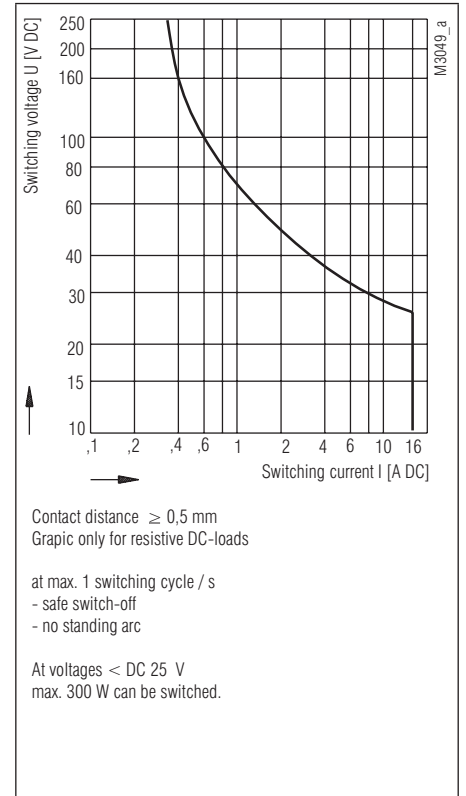




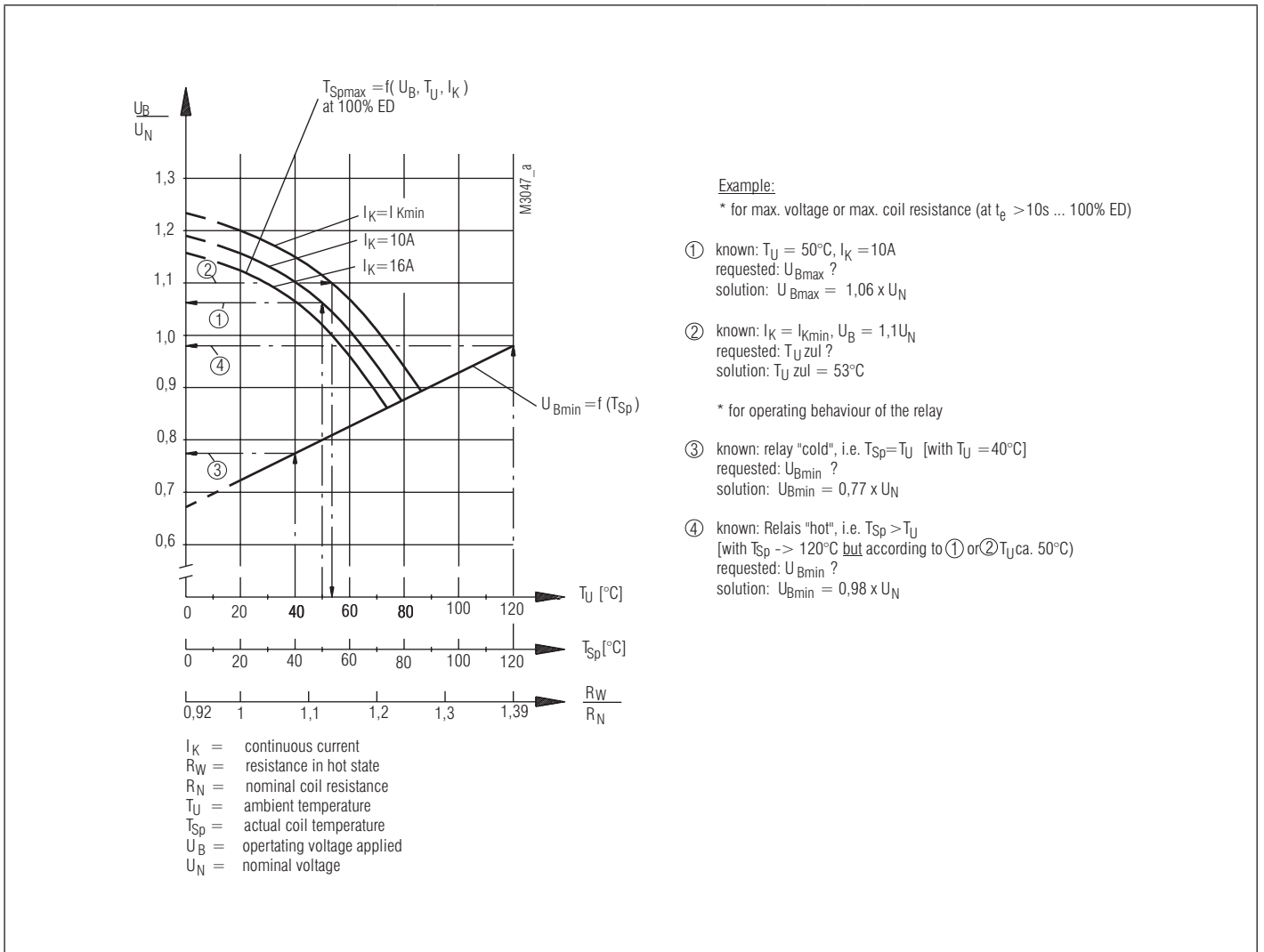
Contact service life



Reduction factor for reactive loads

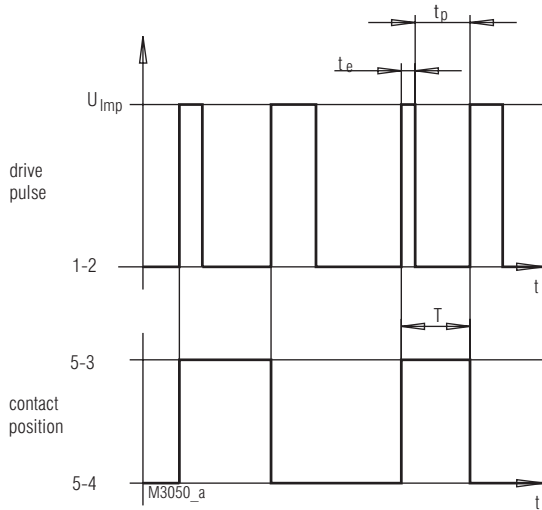


Limit curve for arc-free operation



Operating voltage limit curve

Function Diagram



Notes:

1.) Safe function for pulse operation
at $0,8x U_N < U_{imp} < 1,1x U_N$

$t_e \text{ min} = 20 \text{ ms}$
 $t_p \text{ min} = 180 \text{ ms}$

2.) Safe thermal operation
at $1,1x U_N < U_{imp}$
(voltage increase at pulse operation)

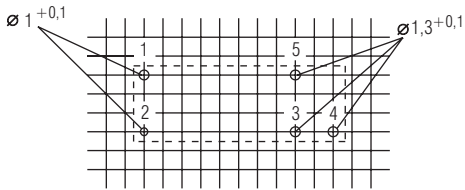
$$U_{imp} = U_{Bmax} \times \sqrt{\frac{T}{t_e}}$$

with: $t_e \leq 10 \text{ s}$

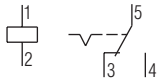
for: $t_e > 10 \text{ s} \dots 100\% \text{ ED}$
see operating voltage limit curve

Dimensions, Pin Configuration, Connection Diagrams

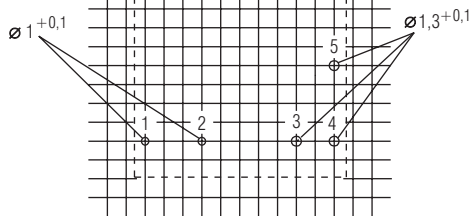
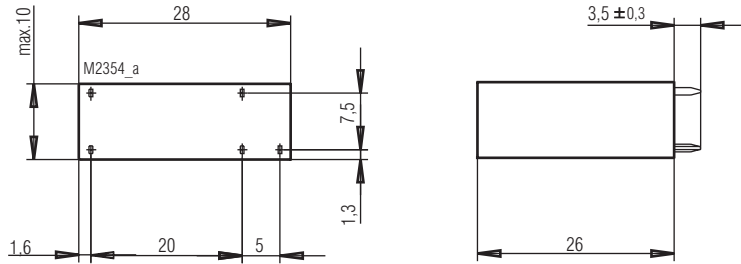
Drilling plan (solder side)



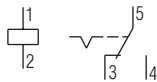
OB 5694.11



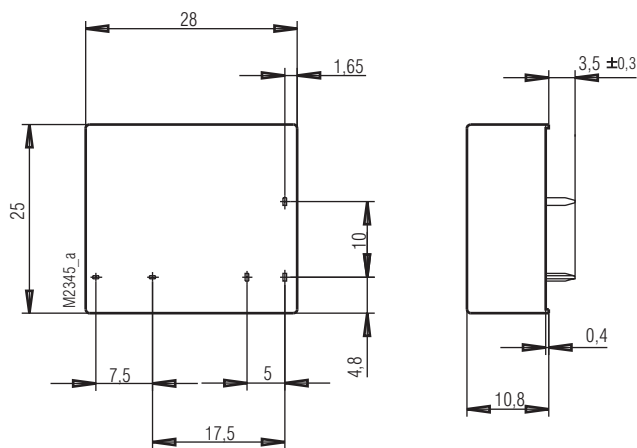
OB 5694.01



OB 5693.11



OB 5693.01



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