Hot plates

Basic values:

Parameter	Value
Dimensions	Ø 60 x 80 x 4.0 mm
Heated area	Ø 45 x 4.0 mm
T_{max}	800 °C

Details of Standard:

Description

The heating element of the RB type has a deliberately introduced inhomogeneity in the heated zone: In the area with 60 mm diameter, only the internal part is actively heated. As a result, the heater can for instance be used for heating the inside of a pipe, while the outside area of the heating element remains colder. Due to the contact area led to the outside with lower power output, which makes it possible to keep the braze joints below their maximum temperature of 500 °C, the "heated zone" can be operated up to 800 °C.

* The actual power depends on resistance, temperature and voltage.

Parameter	Value
Article no.	FLR 100 291
Resistance @ 20 °C	53 Ω ±20 %
Nominal voltage	230 V
Nominal power @ 20 °C	1 000 W*

Basic Material

Parameter	Scale unit	Si_3N_4
max. temperature (T_{max})	°C	1 000
thermal conductivity (l)	W/mK	40
temperature shock resistance (ΔT)	K	500
emissivity (1 100 °C) (ε)	-	0.96
Young's modulus (E)	GPa	320
bending strength (δ_{BB})	MPa	400
compressive strength (δ_D)	MPa	2 000
coefficient of thermal expansion (α)	10^{-6} K^{-1}	3
density (g)	g/cm³	3.21
specific heat (c_p)	J/kgK	750
porosity (100 - % t.D.)	%	0
critical stress intensity factor (K_{Ic})	MPa $m^{½}$	6
Weibull – modulus (m)	-	7.9

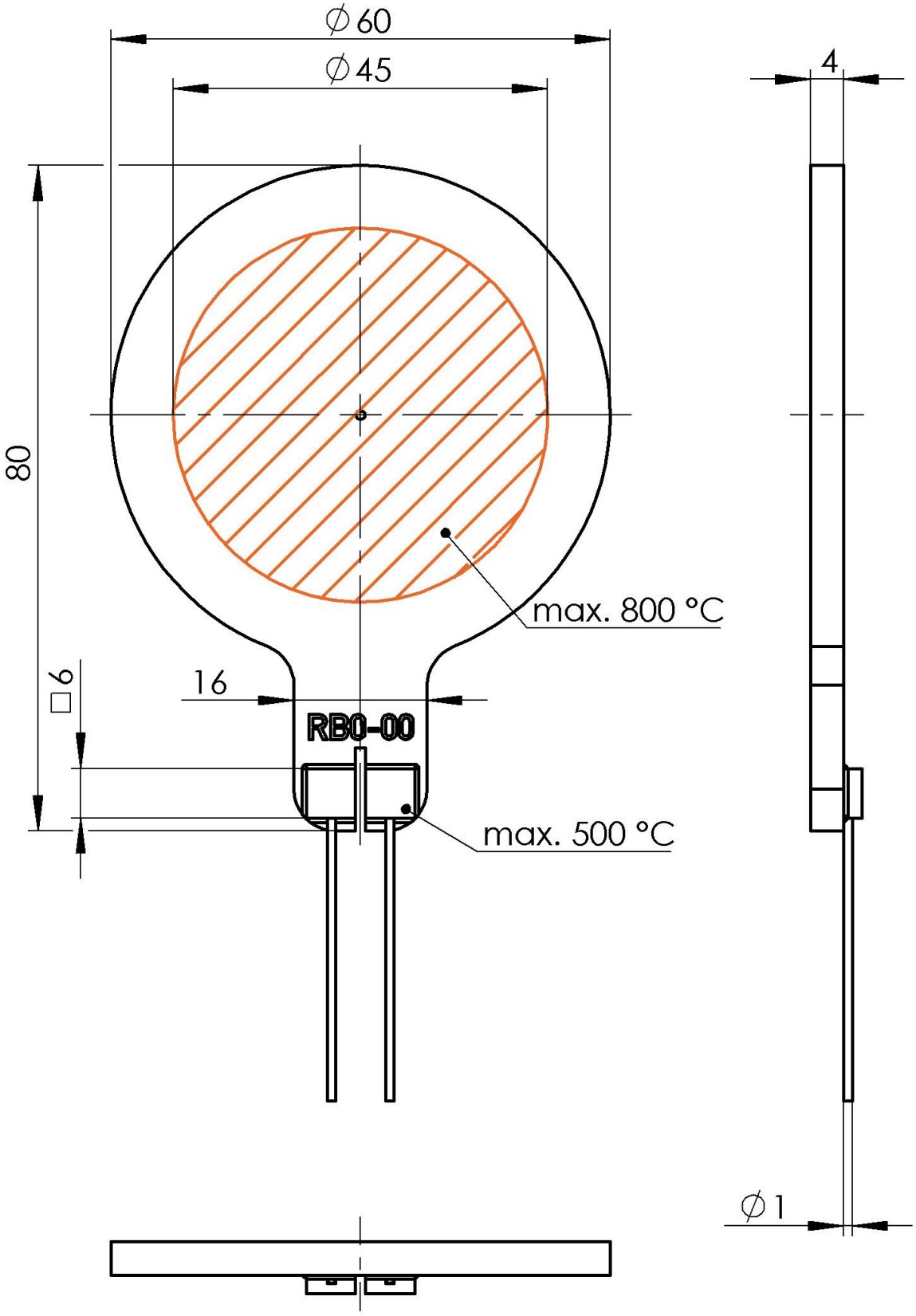
The thermal shock resistance depends on the geometric shape of the heater.

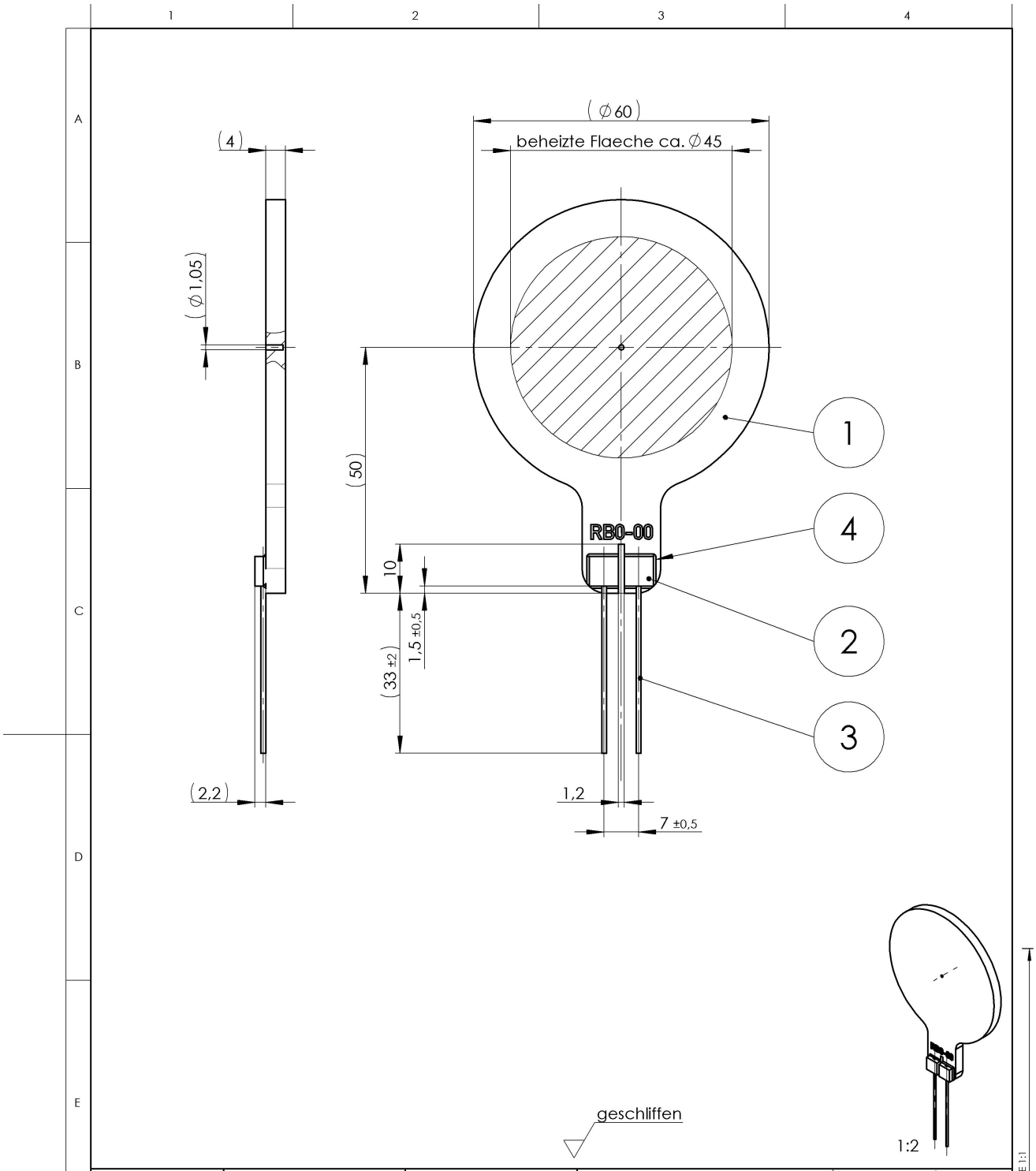
Electrical parameters

Parameter	Scale unit	Si_3N_4
resistivity	Ω cm	$5 \cdot 10^{-3}$ - $5 \cdot 10^{-1}$
isolation resistivity	Ω mm (20 °C)	10^{13}
dielectric strength	kV/mm	25

Emission spectrum

Fully ceramic heating elements are long-wave infrared heaters with a maximum emission of 5 to 10 µm and a radiation coefficient of ε > 0.9.


∅60
∅45
4
80
max. 800 °C
□6
16
RB0-00
max. 500 °C
∅1



TOLERANCES: siehe Einzelteil	FINISH:	DEBUR AND BREAK SHARP EDGES	DO NOT SCALE DRAWING
			MATERIAL: siehe Stueckliste

REV.	REVISION NO.	DATE	NAME
1.0	-	07.03.2016	

	NAME	DATE
DESIGNED	R. Mielke	07.03.2016
DRAWN	R. Mielke	07.03.2016
APPV'D		

TITLE: Heizelement-LB

BACH·RC Bach Resistor Ceramics GmbH

DWG NO. 5E-10000-16-29 | A4

WEIGHT: 41.28 g | SCALE: 1:1 | SAP NO. | SHEET 1 OF 3