Hot plates

Basic values:

Parameter	Value
Dimensions	Ø 100 x 7.0 mm
Heated area	Ø 100 x 7.0 mm
T_{max}	500 °C

Details of Standard:

Description

With a diameter of 100 mm, the heating element of the QEB type is suitable for the relatively large-scale heating of round bodies. The low thermal expansion of silicon nitride helps to make sure that even at 500 °C, only a very small thermal distortion occurs in the heating element and the heat transfer area remains smooth.

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

Parameter	Value
Article no.	FLR 100 128
Resistance @ 20 °C	50 Ω ±25 %
Nominal voltage	230 V
Nominal power @ 20 °C	1 058 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

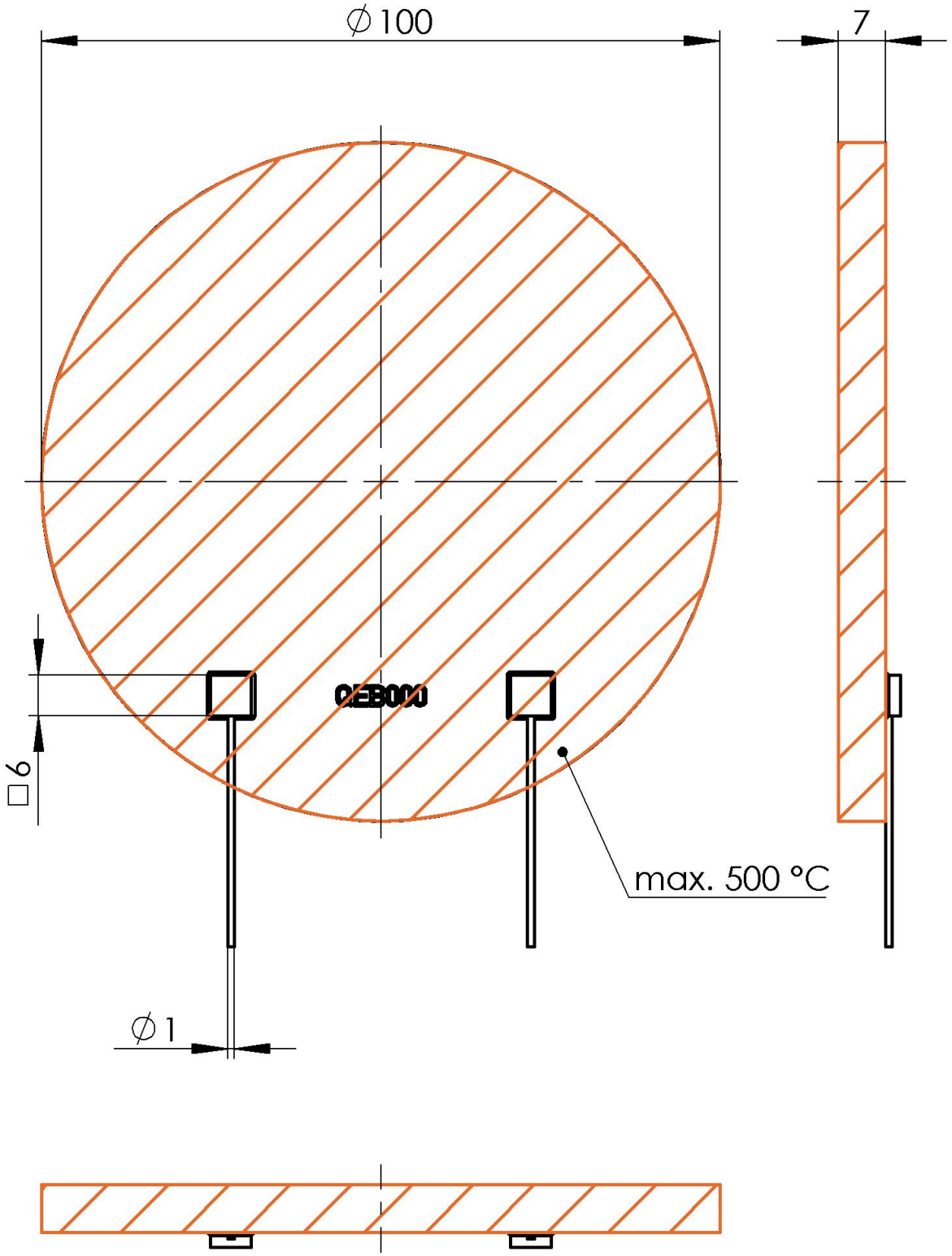
The thermal shock resistance depends on the geometric shape of the heater.

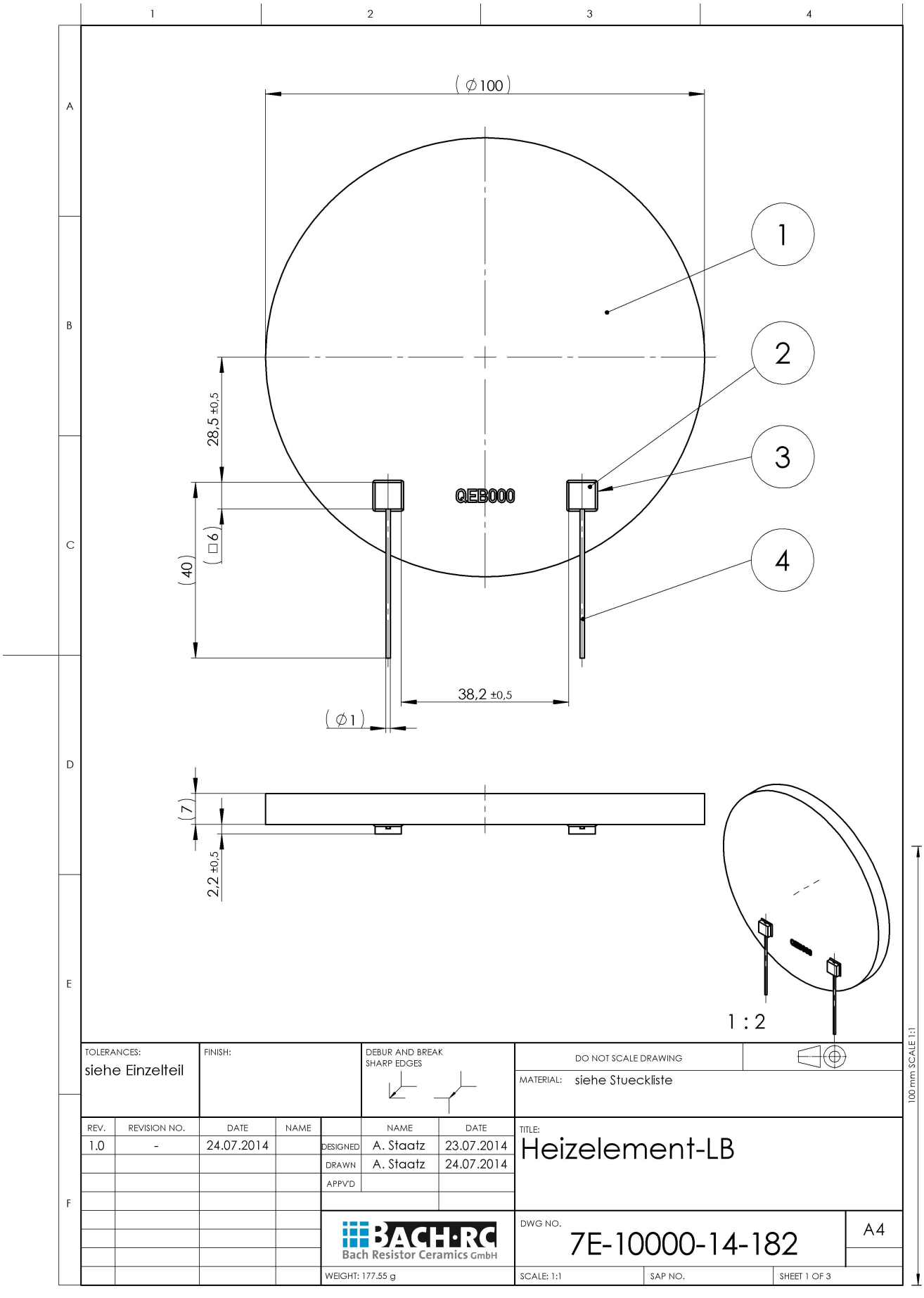
Electrical parameters

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.


∅100
7
□6
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	-	24.07.2014	

	NAME	DATE
DESIGNED	A. Staatz	23.07.2014
DRAWN	A. Staatz	24.07.2014
APPV'D		

TITLE: Heizelement-LB

BACH·RC Bach Resistor Ceramics GmbH

DWG NO. 7E-10000-14-182 | A4

WEIGHT: 177.55 g | SCALE: 1:1 | SAP NO. | SHEET 1 OF 3