Flat heating elements

Basic values:

Parameter	Value
Dimensions	22 x 14 x 3.0 mm
Heated area	22 x 14 x 3.0 mm
T_{max}	500 °C

Details of Standard, right:

Description

With the heating element Type HJ, the electrical contacting can be implemented in a very space saving manner owing to the contacts that are laterally arranged, and this closely together. The heating element is thereby particularly suited for the installation in cavities with designs where there is contact on both sides of the material to be heated, for example, for tools made of metal such as thermoforming and injection-moulding tools.

- position of the contact pad: right
* The actual power depends on resistance, temperature and voltage.

Parameter	Value		
Article no.	FLE 100 062	FLE 100 513	FLE 100 537
Resistance @ 20 °C	105 Ω ±25 %	70 Ω ±25 %	40 Ω ±25 %
Nominal voltage	110 V	48 V	48 V
Nominal power @ 20 °C	115 W*	33 W*	58 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

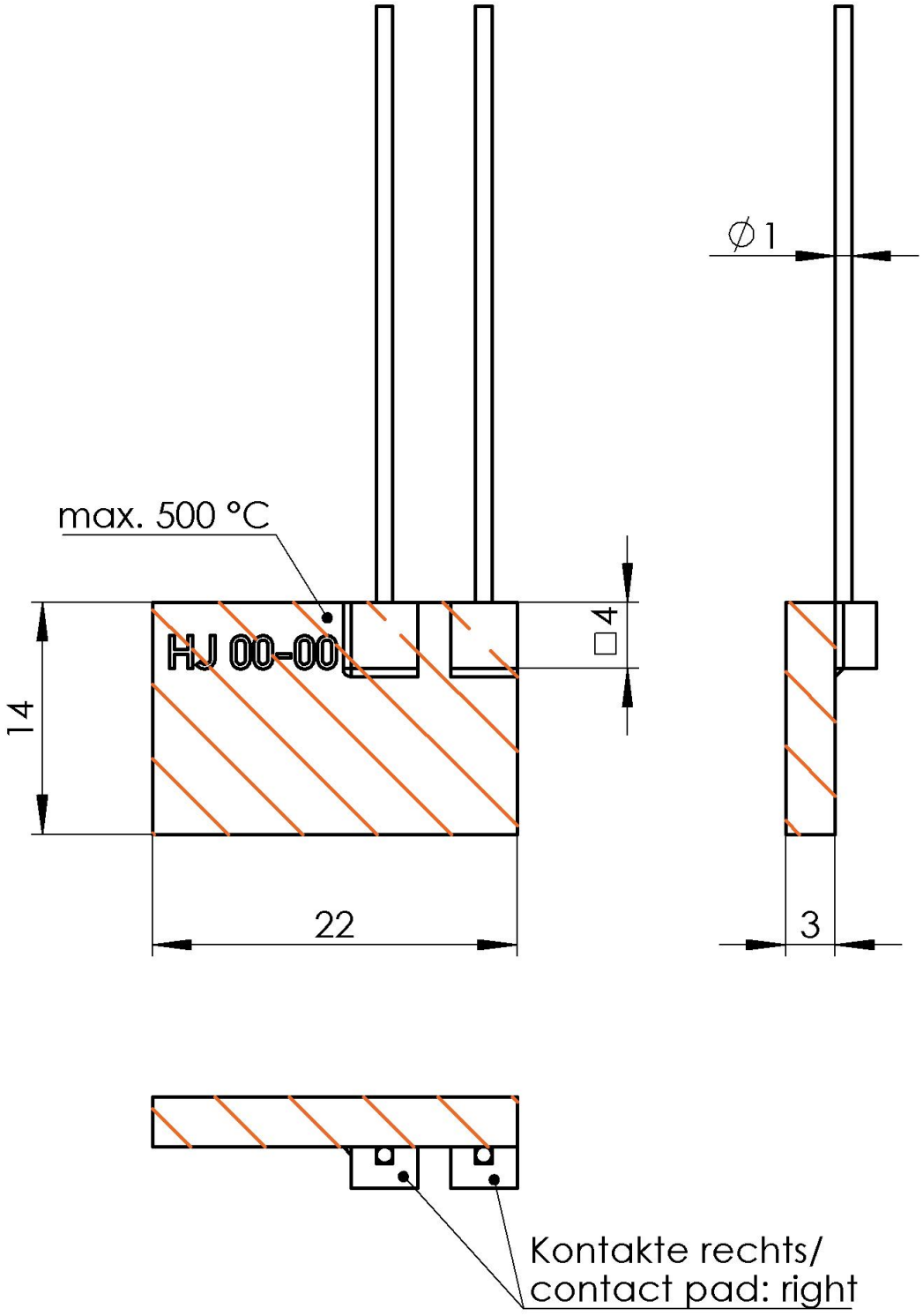
The thermal shock resistance depends on the geometric shape of the heater.

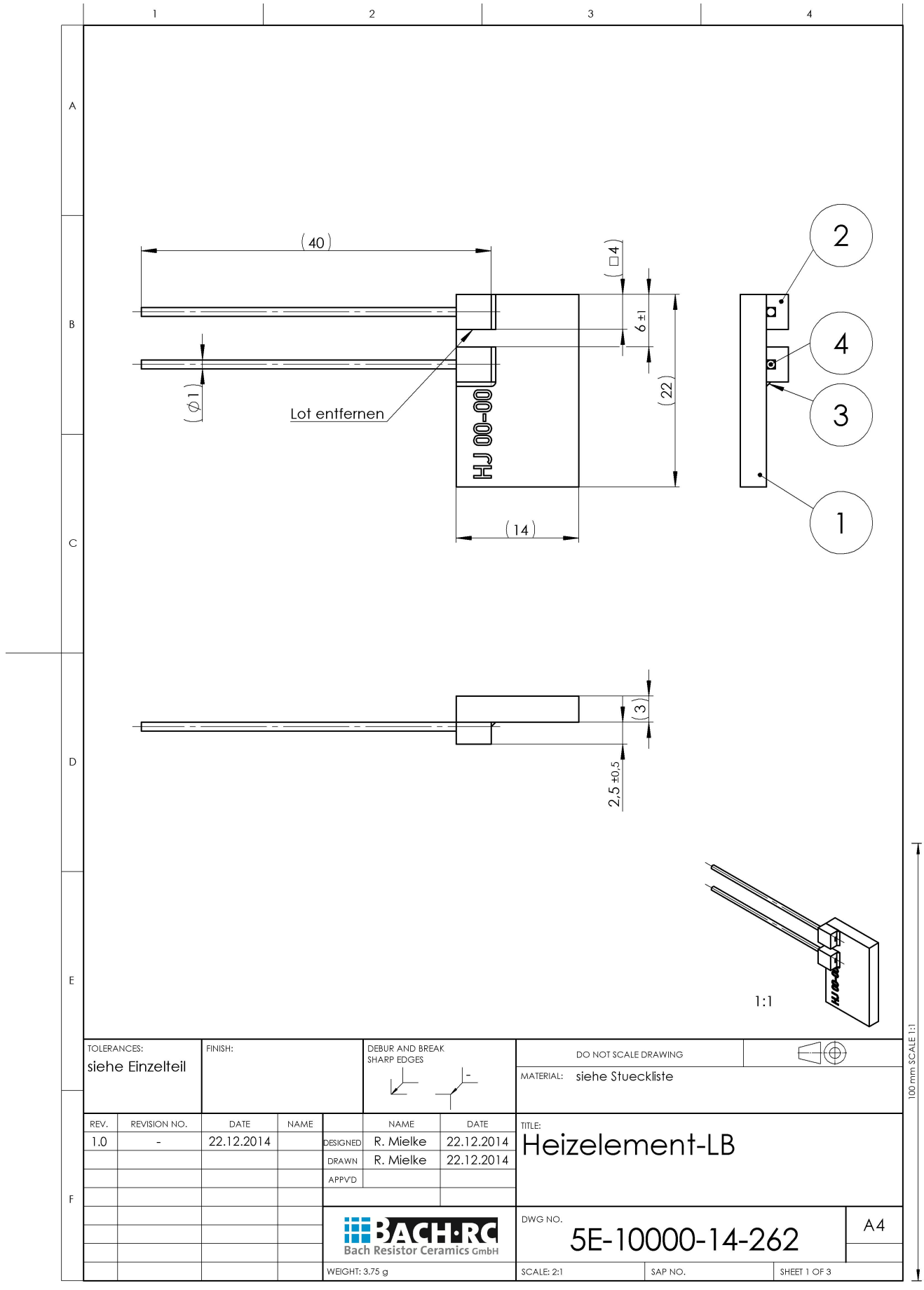
Electrical parameters

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.


max. 500 °C
HJ 00-00
14
□4
22
∅1
3
Kontakte rechts/
contact pad: right



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

REV.	REVISION NO.	DATE	NAME
1.0	-	22.12.2014	

	NAME	DATE
DESIGNED	R. Mielke	22.12.2014
DRAWN	R. Mielke	22.12.2014
APPV'D		

TITLE: Heizelement-LB

BACH·RC Bach Resistor Ceramics GmbH

DWG NO. 5E-10000-14-262

A4

WEIGHT: 3.75 g | SCALE: 2:1 | SAP NO. | SHEET 1 OF 3