



100 mm SC VGF GaAs Si doped



Freiberger

Parameter		Unit	Values
Diameter		mm	100.0 ± 0.1
Crystal growth method			VGF
Dopant			Si
Conductivity type			n
LASER grade			
Carrier concentration *1		cm ⁻³	(0.8 ... 3.0) × 10 ¹⁸
Hall mobility *2		cm ² /Vs	(2.0 ... 1.5) × 10 ³
LED grade			
Carrier concentration *1		cm ⁻³	(0.2 ... 2.5) × 10 ¹⁸
Hall mobility *2		cm ² /Vs	(2.5 ... 1.6) × 10 ³
Etch pit density *3	LASER grade A	avg. value on wafer	cm ⁻² ≤ 100 *4
	LASER grade B	avg. value on wafer	cm ⁻² ≤ 250 *5
	LASER grade C	avg. value on wafer	cm ⁻² ≤ 500 *6
	LED grade	avg. value on wafer	cm ⁻² ≤ 3 000
(100)-orientation		on	° ± 0.5
		off towards (110) *7	° 2.0 ± 0.5
Orientation (OF) flat		length	mm 32.5 ± 2.0
SEMI-US		orientation	[011̄] ± 1°
SEMI-EJ		orientation	[011̄] ± 1°
Identification (IF) flat		length	mm 18.0 ± 2.0
SEMI-US		orientation	[011] ± 5°
SEMI-EJ		orientation	[011̄] ± 5°
Thickness *7		μm	625 ± 25
Total thickness variation (TTV)		μm	≤ 15
Total indicated reading (TIR)		μm	≤ 10
Warp		μm	≤ 10
Particles		diameter > 0.3 μm	pcs. ≤ 80
Front side treatment			polished
Back side treatment		standard option	cut/etched polished
Laser marking			acc. SEMI T 5
Packaging		standard option	cassette single wafer container

*1 other ranges upon request

*2 depending on doping level or carrier concentration

*3 measured according to DIN 50454-1: whole wafer mapping, site size 500 x 500 μm²
number of sites 27352, edge exclusion 3 mm

*4 corresponds to an EPD of 0 cm⁻² on ≥ 85% of wafer area

*5 corresponds to an EPD of ≤ 400 cm⁻² on ≥ 90% of wafer area

*6 corresponds to an EPD of ≤ 1200 cm⁻² on ≥ 95% of wafer area

*7 other values upon request