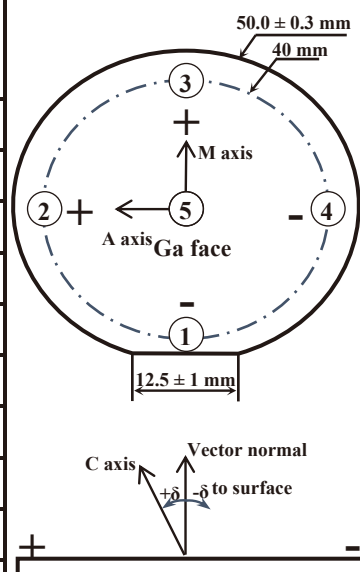


# GaN 2" Free-standing N-Type Wafer

2-inch Free-standing N-GaN Substrates					
	Production (P)			Research (R)	Dummy (D)
	P <sup>+</sup>	P	P <sup>-</sup>		
Item	GaN-FS-C-N-C50-SSP				
Dimension	50.0 ± 0.3 mm				
Thickness	400 ± 30 μm				
Orientation flat	(1-100) ± 0.1°, 12.5 ± 1 mm				
TTV	≤ 15 μm				
BOW	≤ 20 μm				
Resistivity (300K)	≤ 0.02 Ω·cm for N-type (Si-doped)				
Ga face surface roughness	≤ 0.3 nm (polished and surface treatment for epitaxy)				
N face surface roughness	0.5 ~ 1.5 μm (single side polished)				
C plane (0001) off angle toward M-axis (miscut angles)	0.55 ± 0.1° (5 points)	0.55 ± 0.15° (5 points)		0.55 ± 0.15° (3 points)	
Threading dislocation density	≤ 7.5 × 10 <sup>5</sup> cm <sup>-2</sup>	≤ 3 × 10 <sup>6</sup> cm <sup>-2</sup>			
Number and max size of holes in Φ47 mm in the center	0	≤ 3@1000 μm	≤ 12@1500 μm	≤ 20@3000 μm	
Useable area	≥ 90%		≥ 80%	≥ 70%	
Package	Packaged in a cleanroom in single wafer container				



Note:  
 (1) 5 points: the miscut angles of 5 positions are 0.55 ± 0.15°  
 (2) 3 points: the miscut angles of positions (2, 4, 5) are 0.55 ± 0.15°  
 (3) Useable area: exclusion of periphery and macro defects (holes)

その他の形状もご相談ください