2017 294 3

“战略性先进电子材料”重点专项
2018 年度项目申报指南

2006-2020

2025

〃 〃

2018

〃

2025〃〃 +〃

〃 〃

4

35 5 2016-2020

2016 4 15

27 2017 4 15

37 2018 4 5

12-24 1.77

1 1

1.1

1-2 4

5

5 1

1

〃 1-2 〃

2 2

2

1.

1.1

≥ 2

X ≤ 50 arcsec ≤ 1

nm p ≥ 1×10^{18} cm^{-3} n ≥ 1

$\times 10^{16}$ cm^{-3} 3000

$cm^2/V \cdot s$ 2500 $cm^2/V \cdot s$

≥ 3 ≤ 10^4 cm^{-2}

– MOSFET

≥ 1000 V ≤ 2 $m\Omega \cdot cm^2$

≤ 230 nm

≥ 5×10^3 15 20

1.2

≤ 0.3 GaN

3 5 μm ≥ 77 K

≥ 0.3 THz GaN

≥ 8 μW

≥ 8%

15 20

1.3

LED

3000K

6000K 85

≥ 100 lm/W

90 LED

≥ 40% LED ≥ 10^5 cd/m^2 ≥ 20%

20 15

2.

2.1

10 / ≥ 90% 100

≥ 160% NTSC 5

10^5 lm

2.2 LD

LD

LD

LD

LD

450 nm 520 nm 640 nm

5000 /

LD ≥ 50% LD ≥ 30% LD ≥ 70%

LD 25 LD 120

LD 28

3.

3.1

-45 65

≥ 80% ≤ 0.1°

±10 cm ≥ 99% ≥ 100 m 50

mm×50 mm ≤ 3% =0 5

3.2

SiC

3μm ≥ 500

mm/s <±0.5 μm ≤ ±0.5 μm

2

5

3.3

Q

400 nm 630 nm

Φ100 mm ≤ ±5%

≥ 90 ≥ 60

510 nm 10 W Φ100 mm

≤ ±5% ≥ 98

≥ 300 kW ≤ 150 ns ≥ 50 Hz

≤ 40 μm 10

4.

4.1

≥ 3 m

≤ 0.3 mm ≥ 100

mm 5 8 MW

≥ 3 mm ≤ 5% ≤ 0.5 mm ≤ 1

mm/100 mm 10

4.2

>20 m,

≥ 5 m^2/h

≥ 100μm, ≤ ±20μm

≤ 5% ≤ 80 10

5.

5.1

CMOS

CMOS

≤

6.4×10^{-3} μm^2 50 ns 25 ns 100

@150 ^{o}C ≥ 8; 1.5 Gb/cm^2

10 20

5.2

12 CMOS

12

CMOS

2 3

≥ 1 Gb/cm^2

150% ≤ 30 ns ≤ 1 V

10^{15} 10 15

30