

“

”

2024

(征求意见稿)

1.

1.1

Chiplet

AI

CMOS

2.5D/3D

1

0

3dB

45GHz

3dB

45GHz

8

200GHz

100Gb/s/mm²

2

CMOS

112Gb/s

8

3pJ/bit

2.5Vppd

65dBΩ

3

2.5D/3D 2

8 1Tb/s 500Gb/s/mm 4

4Tb/s 500m /

20 MSA

2

1.2 1.6Tb/s

AI

200Gb/s

VCSEL GaAs

VCSEL

200Gb/s

1.6Tb/s

1.6Tb/s AI

1 GaAs VCSEL

844 863nm 224Gb/s 3dB 38GHz

RIN -154dB/Hz 9mA

GR468 2 224Gb/s

3dB 45GHz 0.5A/W 20nA; 3 1.6Tb/s

224Gb/s

TDECQ 4.4dB 2dB -3.5dBm

@BER=2.4E-4 30m 4 1.6Tb/s

AI /

10 MSA

2

200Gb/s 1.6Tb/s

1.3

EML

PAM4

200Gb/s 1.6Tb/s

1.6Tb/s

1 EML 224Gb/s 3dB

60GHz 5mW 20mA

1271/1291/1311/1331nm ±6.5nm 20°C
 70°C 2 224Gb/s 3dB 55GHz
 0.7A/W 20nA 3 1.6Tb/s
 224Gb/s 4
 TDECQ 3.4dB 3.5dB
 -3.2dBm@BER=2.4E-4 500m 4
 1.6Tb/s
 / 10
 MSA 2
 200Gb/s , 1.6Tb/s
1.4 **100Gb/s**
 100Gb/s
 100Gb/s PAM4
 100Gb/s PAM4
 /
 100Gb/s SFP

	1		DML	3dB	28GHz
		40dB		3dBm	1304.5
1317.5nm			EML	3dB	40GHz
		40dB		3dBm	1304.5
1317.5nm	2			3dB	35GHz
0.7A/W		1304.5	1317.5nm	3	
		50GHz		1kHz	4 SFP
		0dBm			OMA
-6.8dBm@BER=2E-4			3.5W	-40°C	+85°C
	5				100Gb/s
10km		/			10
MSA				2	
					100Gb/s

1.5

BaTiO₃ BTO

BTO

BTO

BTO

BTO

BTO

BTO

BTO

1 BTO

1nm XRD

0.5°

300pm/V

2 BTO

$V_{\pi}L$

0.5V·cm

3dB

30GHz

100dB·Hz^{2/3} @1GHz

40Gbaud

/

10

1.6

1

50GHz

100fJ/bit

-10dB 2

3
 5 8
 1Tb/s 3
 8 QPSK /16 QAM
 5 /
 1.7
 1 C
 1mW 5°
 35dB 32 50GHz
 12.5GHz 2 C
 0.01mm² 24 3.2nm

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0.5nm 3
 100Tb/s 20km /
 5

1.8

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	1		C	L
33dB		$V_{\pi}L$	$2V \cdot cm$	2
	4V@70GHz	3dB	100GHz	3
	1			
$125dB \cdot Hz^{2/3}@30GHz$		/		5

1.9

2 1 1ps
20dB@0.5THz 3 0.2A/W 2THz
1 / 5

1.10

CMOS

1
 CMOS
 32×32 0.99 10ns
 10⁷ 10pJ
 10⁻⁴dB/h 20TOPS
 3TOPS/W 2 0 9
 95% /
 5
 1.11

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1

C

23dBm

0.6A/W

20dBm 3dB 40GHz 2
 1 /
 5

1.12

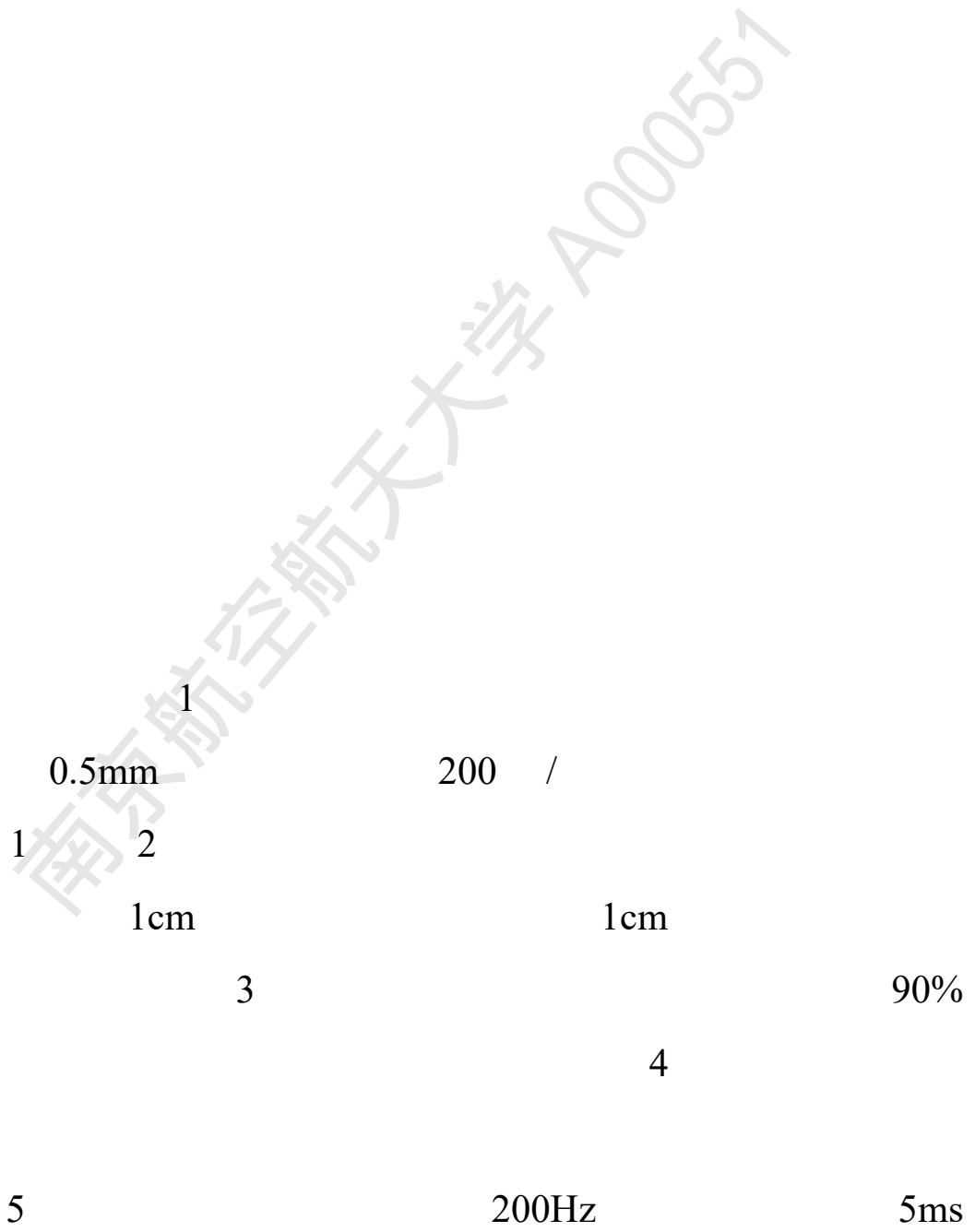
OFPGA

OFPGA

1
 8 2 3 2
 2×2 MZI 0.5dB 30dB,
 5bit 3 1.0dB
 40dB 20μm 7bit 4 OFPGA
 MZI 30 10
 1000 /
 5

2.

2.1



5

3

10

1

/

2.2

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1

55°

1920×1080

600:1 3D

1°

100g 2

75 / 3

6

5° 4



1000"
100ms; 2
3 36
3 5
10dB 4
525nm
3
0.5 2
/
10
2.4
5G

1
400m²
25fps 2
1Gbps 3 6
4K 60fps
PSNR 30 4
3 5
/
1 10
2.5

1
5m; 2
3
10 3
5000
4
95% 20% 5
1.5cm/s
60ms 6 2
/
10
1

2.6

TiO₂ Si₃N₄

TiO₂ Si₃N₄

BIC

TiO₂ Si₃N₄

NA FOV

1 TiO₂ Si₃N₄

50nm 30 TiO₂ Si₃N₄

0 40° 1°

3° 2

70%

50° 5° 60% 3

1.2mm NA 0.6 FOV 15° 5%

4

1mm 10g

2

/

10

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