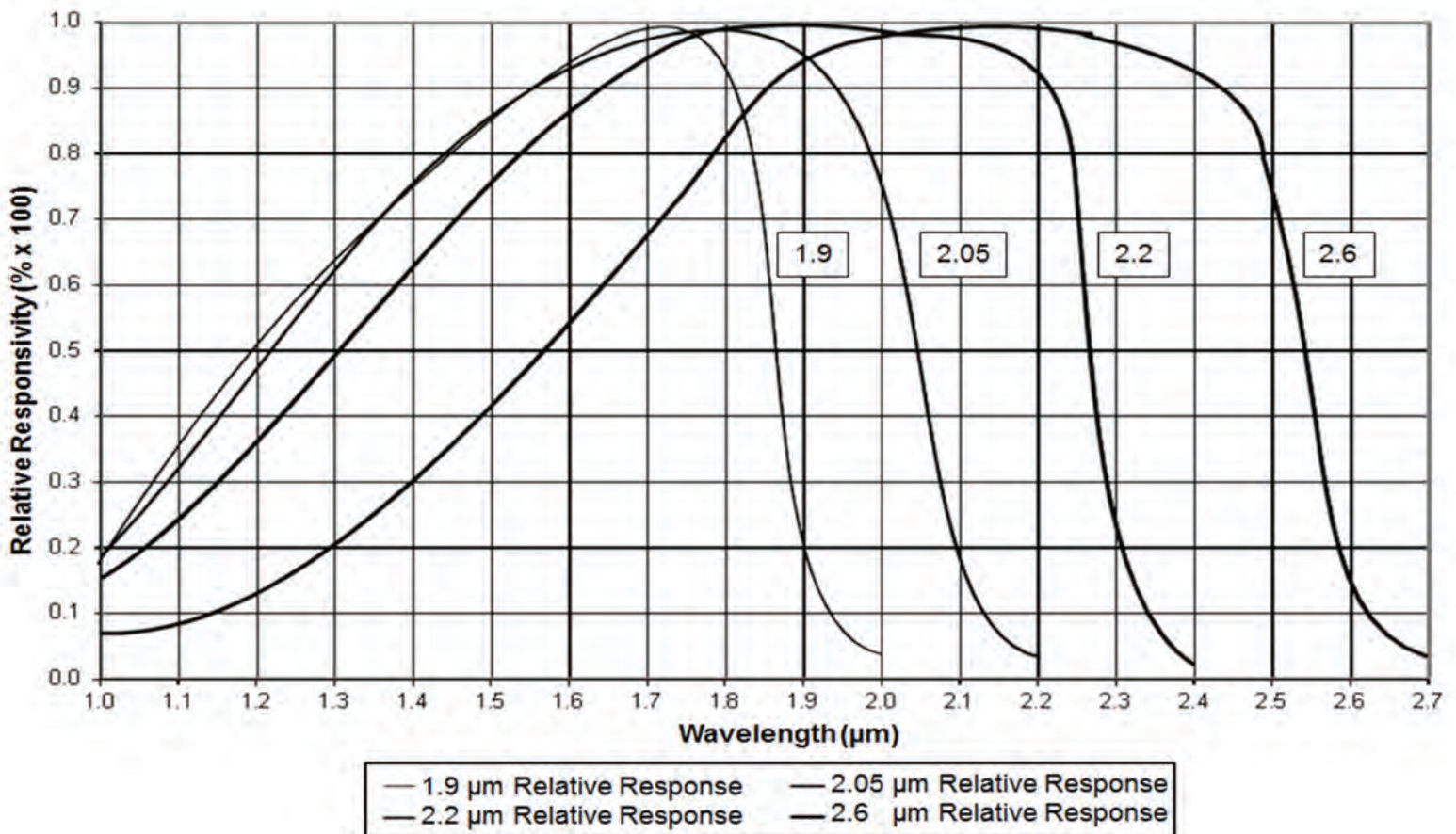


Extended InGaAs Photodiodes

Extended 1.9 - 2.6 μm InGaAs Photodiode Relative Responsivity



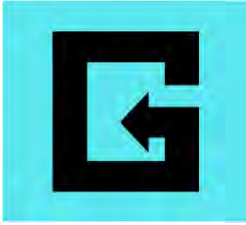
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GAP300/1.9
GAP500/1.9
GAP1000/1.9
GAP2000/1.9
GAP3000/1.9

1.9 μm Extended Response

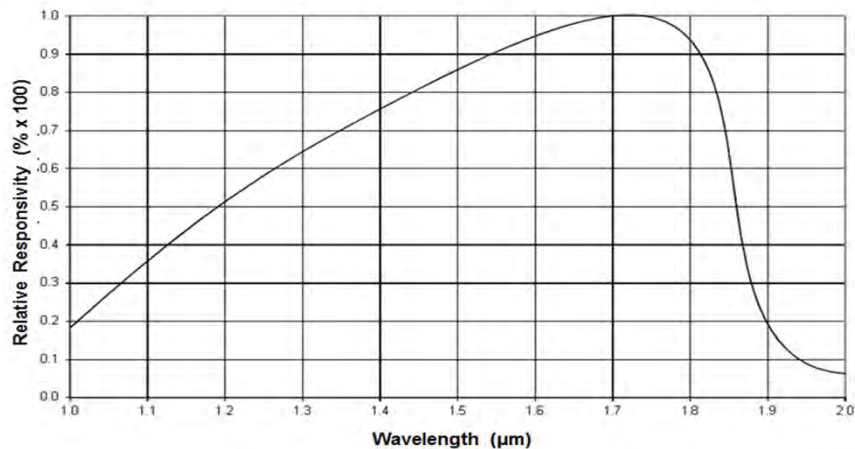
Electrical Characteristics @ 23 $^{\circ}\text{C} \pm 2$ $^{\circ}\text{C}$

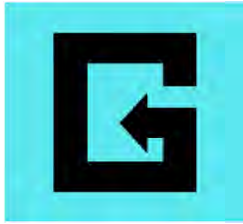
Performance Specification	GAP300/1.9	GAP500/1.9	GAP1000/1.9	GAP2000/1.9	GAP3000/1.9	Units
Active Diameter	0.3	0.5	1	2	3	mm
Peak Wavelength (typ)	1.7 ± 0.1	1.7 ± 0.1	1.7 ± 0.1	1.7 ± 0.1	1.7 ± 0.1	μm
Cutoff Wavelength (50%)	1.9 ± 0.1	1.9 ± 0.1	1.9 ± 0.1	1.9 ± 0.1	1.9 ± 0.1	μm
Responsivity @ λ_p (min/typ)	0.9/1.0	0.9/1.0	0.9/1.0	0.9/1.0	0.9/1.0	A/W
Shunt Resistance (min)	15	2	1	0.25	0.11	M Ω
Dark Current (max)	0.1 @ 1 V	0.9 @ 1 V	4 @ 1 V	10 @ 1 V	22.5 @ 0.5 V	μA
Capacitance (typ) @ 0 V	60	200	600	3000	6750	pF
Bandwidth w/ 50 Ω @ 0 V (typ)	53	16	5.3	1.1	0.47	MHz
Rise time w/ 50 Ω @ 0 V (typ)	6.6	22	66	330	742	ns
NEP @ λ_{PEAK} (typ)	3×10^{-14}	9×10^{-14}	12.8×10^{-14}	26×10^{-14}	38×10^{-14}	W/Hz ^{1/2}
Linearity (± 0.2 dB @ 0 V)	6	6	6	6	6	dBm
Case Style	TO-46	TO-46	TO-46	TO-5	TO-5	

Maximum Ratings

Performance Specification	GAP300/1.9	GAP500/1.9	GAP1000/1.9	GAP2000/1.9	GAP3000/1.9	Units
Storage Temperature	-40 to 125	-40 to 125	-40 to 125	-40 to 125	-40 to 125	$^{\circ}\text{C}$
Operating Temperature	-40 to 85	-40 to 85	-40 to 85	-40 to 85	-40 to 85	$^{\circ}\text{C}$
Reverse Voltage	3	2	2	2	1	V
Reverse Current	10	10	10	10	10	mA
Forward Current	10	10	10	10	10	mA
Power Dissipation	50	50	50	50	50	mW

Extended 1.9 μm InGaAs Photodiode Relative Responsivity





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GAP300/2.05
 GAP500/2.05
 GAP1000/2.05
 GAP2000/2.05
 GAP3000/2.05

2.05 μm Extended Response

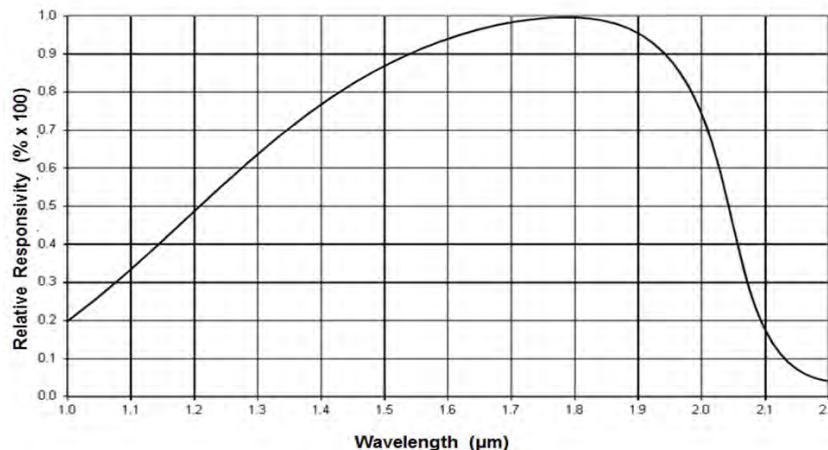
Electrical Characteristics @ 23 °C \pm 2 °C

Performance Specification	GAP300/2.05	GAP500/2.05	GAP1000/2.05	GAP2000/2.05	GAP3000/2.05	Units
Active Diameter	0.3	0.5	1	2	3	mm
Peak Wavelength (typ)	1.8 \pm 0.1	1.8 \pm 0.1	1.8 \pm 0.1	1.8 \pm 0.1	1.8 \pm 0.1	μm
Cutoff Wavelength (50%)	2.05 \pm 0.1	2.05 \pm 0.1	2.05 \pm 0.1	2.05 \pm 0.1	2.05 \pm 0.1	μm
Responsivity @ λ_p (min/typ)	0.9/1.0	0.9/1.0	0.9/1.0	0.9/1.0	0.95/1.1	A/W
Shunt Resistance (min/typ)	2M/5M	1M/2.5M	0.3M (min)	90k (min)	15k/20k	Ω
Dark Current (max)	0.5 @ 1 V	1 @ 1 V	4 @ 1 V	10	12 @ 0.5 V	μA
Capacitance (typ) @ 0 V	80	250	500	1600	4000	pF
Bandwidth w/ 50 Ω @ 0 V (typ)	40	12.7	6.4	2	0.8	MHz
Rise time w/ 50 Ω @ 0 V (typ)	9	27.5	55	176	440	ns
NEP @ λ_{PEAK} (typ)	5.7 $\times 10^{-14}$	8.1 $\times 10^{-14}$	23.4 $\times 10^{-14}$	42.8 $\times 10^{-14}$	90.7 $\times 10^{-14}$	W/Hz ^{1/2}
Linearity (\pm 0.2 dB @ 0 V)	6	6	6	6	6	dBm
Case Style	TO-46	TO-46	TO-46	TO-5	TO-5	

Maximum Ratings

Performance Specification	GAP300/2.05	GAP500/2.05	GAP1000/2.05	GAP2000/2.05	GAP3000/2.05	Units
Storage Temperature	-40 to 125	-40 to 125	-40 to 125	-40 to 125	-40 to 125	°C
Operating Temperature	-40 to 85	-40 to 85	-40 to 85	-40 to 85	-40 to 85	°C
Reverse Voltage	2	2	2	2	1	V
Reverse Current	10	10	10	10	10	mA
Forward Current	10	10	10	10	10	mA
Power Dissipation	50	50	50	50	50	mW

Extended 2.05 μm InGaAs Photodiode Relative Responsivity





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GAP300/2.2
GAP500/2.2
GAP1000/2.2
GAP2000/2.2
GAP3000/2.2

2.2 μm Extended Response

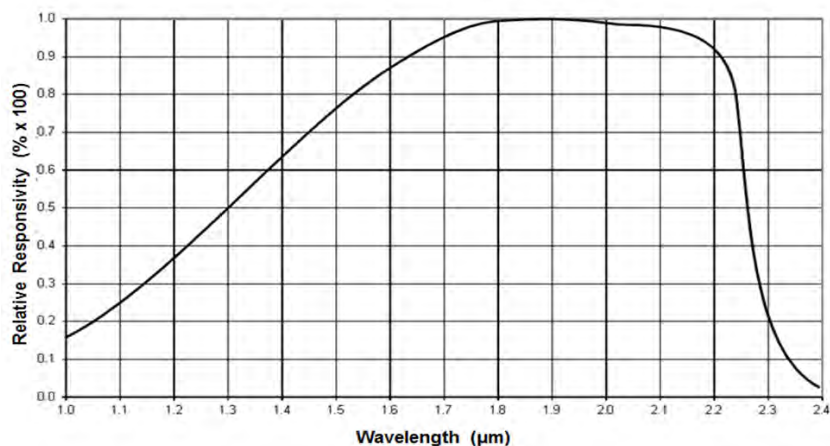
Electrical Characteristics @ 23 °C \pm 2 °C

Performance Specification	GAP300/2.2	GAP500/2.2	GAP1000/2.2	GAP2000/2.2	GAP3000/2.2	Units
Active Diameter	0.3	0.5	1	2	3	mm
Peak Wavelength (typ)	2.0 \pm 0.1	2.0 \pm 0.1	2.0 \pm 0.1	2.0 \pm 0.1	2.0 \pm 0.1	μm
Cutoff Wavelength (50%)	2.2 \pm 0.1	2.2 \pm 0.1	2.2 \pm 0.1	2.2 \pm 0.1	2.2 \pm 0.1	μm
Responsivity @ λ_p (min/typ)	0.9/1.0	0.9/1.0	0.9/1.0	0.9/1.0	0.9/1.0	A/W
Shunt Resistance (min/typ)	0.5M/0.8M	0.18M/0.33M	40k/75k	6k/10k	2k/6k	Ω
Dark Current (max)	1 @ 1 V	5 @ 1 V	10 @ 1 V	40 @ 1 V	100 @ 1 V	μA
Capacitance (typ) @ 0 V	90	275	1000	4000	8000	pF
Bandwidth w/ 50 Ω @ 0 V (typ)	35	11.6	3.18	0.795	0.397	MHz
Rise time w/ 50 Ω @ 0 V (typ)	10	30	110	440	881	ns
NEP @ λ_{PEAK} (typ)	14.3x 10 ⁻¹⁴	22.3 x 10 ⁻¹⁴	46.8 x 10 ⁻¹⁴	128 x 10 ⁻¹⁴	287 x 10 ⁻¹⁴	W/Hz ^{1/2}
Linearity (\pm 0.2 dB @ 0 V)	6	6	6	6	6	dBm
Case Style	TO-46	TO-46	TO-46	TO-5	TO-5	

Maximum Ratings

Performance Specification	GAP300/2.2	GAP500/2.2	GAP1000/2.2	GAP2000/2.2	GAP3000/2.2	Units
Storage Temperature	-40 to 125	-40 to 125	-40 to 125	-40 to 125	-40 to 125	°C
Operating Temperature	-40 to 85	-40 to 85	-40 to 85	-40 to 85	-40 to 85	°C
Reverse Voltage	2	2	1	1	1	V
Reverse Current	10	10	10	10	10	mA
Forward Current	10	10	10	10	10	mA
Power Dissipation	50	50	50	50	50	mW

Extended 2.2 μm InGaAs Photodiode Relative Responsivity





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GAP300/2.6
 GAP500/2.6
 GAP1000/2.6
 GAP2000/2.6
 GAP3000/2.6

2.6 μm Extended Response

Electrical Characteristics @ 23 °C \pm 2 °C

Performance Specification	GAP300/2.6	GAP500/2.6	GAP1000/2.6	GAP2000/2.6	GAP3000/2.6	Units
Active Diameter	0.3	0.5	1	2	3	mm
Peak Wavelength (typ)	2.2 \pm 0.1	2.2 \pm 0.1	2.2 \pm 0.1	2.2 \pm 0.1	2.2 \pm 0.1	μm
Cutoff Wavelength (50%)	2.6 \pm 0.1	2.6 \pm 0.1	2.6 \pm 0.1	2.6 \pm 0.1	2.6 \pm 0.1	μm
Responsivity @ λ_p (min/typ)	0.9/1.0	0.9/1.0	0.9/1.0	0.9/1.0	0.9/1.0	A/W
Shunt Resistance (min/typ)	16k/25k	5k/8k	2k/4k	0.5k/1.5k	0.2k/0.5k	Ω
Dark Current (max)	13 @ 1 V	20 @ 0.5 V	80 @ 0.5 V	320 @ 0.5 V	500 @ 0.5 V	μA
Capacitance (typ) @ 0 V	100	270	1000	4400	10000	pF
Bandwidth w/ 50 Ω @ 0 V (typ)	32	16	3.2	0.8	0.35	MHz
Rise time w/ 50 Ω @ 0 V (typ)	11	22	110	440	1000	ns
NEP @ λ_{PEAK} (typ)	81 x 10 ⁻¹⁴	143 x 10 ⁻¹⁴	203 x 10 ⁻¹⁴	331 x 10 ⁻¹⁴	574 x 10 ⁻¹⁴	W/Hz ^{1/2}
Linearity (\pm 0.2 dB @ 0 V)	6	6	6	6	6	dBm
Case Style	TO-46	TO-46	TO-46	TO-5	TO-5	

Maximum Ratings

Performance Specification	GAP300/2.6	GAP500/2.6	GAP1000/2.6	GAP2000/2.6	GAP3000/2.6	Units
Storage Temperature	-40 to 125	-40 to 125	-40 to 125	-40 to 125	-40 to 125	°C
Operating Temperature	-40 to 85	-40 to 85	-40 to 85	-40 to 85	-40 to 85	°C
Reverse Voltage	2	0.5	0.5	0.5	0.5	V
Reverse Current	10	10	10	10	10	mA
Forward Current	10	10	10	10	10	mA
Power Dissipation	50	50	50	50	50	mW

Extended 2.6 μm InGaAs Photodiode Relative Responsivity

