KT-PR Series – Pre-op amp analog photoelectric detection module

Integrated high-speed response PIN detector and low noise amplifier, fiber or free space coupling, SMA connector output, with high gain, high sensitivity, flat gain, etc., providing multiple frequency ranges from 200KHz to 2GHz, mainly used for analog optical signals Receiving and optical fiber sensing systems and other fields.

Features:

- Spectral range: 320-1000, 850-1650nm
- 3dB bandwidth: DC~2GHz optional
- Low noise and high gain
- Optical fiber, space coupling input optional

Application:

- Weak light signal detection
- Heterodyne detection

Product number:

Parameter	KT-PR-200K	KT-PR-10M	KT-PR-200M	KT-PR-500M	KT-PR-1G	KT-PR-2G
-3dB bandwidth	DC-200KHz	DC-10MHz	DC-200MHz	DC-500MHz	100K-1GHz	100K-2GHz
Rise Time	1.5 us	30 ns	1.5 ns	0.6 ns	0.3 ns	0.15 ns

Ordering Information:

KT	PR	XX	X	XX	XX
	Light detection module Photoreceiver	-3dB bandwidth: 200K---200KHz 10M---10MHz 200M---200MHz 500M---500MHz 1G---1GHz 2G---2GHz	Wavelength A---850~1650nm B---320~1000nm	Input type FC --- Fiber Coupling FS ---Free space	Coupling type： 0---DC AC---AC

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Performance parameters:

Parameters	KT-PR-200K-A		KT-PR-200K-B	
Spectral range	850~1650nm		320~1000nm	
Material type	InGaAs		Si	
Light input	Optical fiber	Free space	Optical fiber	Free space
Ø of photosensitive area	-	75um	-	200um
-3dB bandwidth	200KHz		200KHz	
Rise Time	30ns		30ns	
Responsivity	0.9A/W@1550nm		0.5A/W@700nm	
Gain	1×10^7V/W		0.5×10^7V/W	
NEP	0.9pw/√Hz		1.8pw/√Hz	
Saturation optical power	0.4μW		0.8μW	
Parameters	KT-PR-10M-A		KT-PR-10M-B	
Spectral range	850~1650nm		320~1000nm	
Material type	InGaAs		Si	
Light input	Optical fiber	Free space	Optical fiber	Free space
Ø of photosensitive area	-	75um	-	200um
-3dB bandwidth	10MHz		10MHz	
Rise Time	30ns		30ns	
Responsivity	0.9A/W@1550nm		0.5A/W@700nm	
Gain	2×10^5V/W		1×10^5V/W	
Minimum optical power	-44dBm		-41dBm	
NEP	1.5pw/√Hz		5pw/√Hz	
Saturation optical power	3.5μW		7μW	
Parameters	KT-PR-200M-A		KT-PR-200M-B	
Spectral range	850~1650nm		320~1000nm	
Material type	InGaAs		Si	
Light input	Optical fiber	Free space	Optical fiber	Free space
Ø of photosensitive area	-	75um	-	200um
-3dB bandwidth	200MHz		200MHz	
Rise Time	1.5ns		1.5ns	
Responsivity	0.9A/W@1550nm		0.5A/W@700nm	
Gain	1.4×10^4V/W		0.7×10^4V/W	
Minimum optical power	-39dBm		-36dBm	
NEP	10pw/√Hz		20pw/√Hz	
Saturation optical power	320μW		640μW	

Parameters		KT-PR-500M-A		KT-PR-500M-B	
Spectral range		850~1650nm		320~1000nm	
Material type		InGaAs		Si	
Light input		Optical fiber	Free space	Optical fiber	Free space
Ø of photosensitive area		-	75um	-	200um
-3dB bandwidth		500MHz		500MHz	
Rise Time		0.6ns		0.6ns	
Responsivity		0.9A/W@1550nm		0.5A/W@700nm	
Gain		5×10^3V/W		2.5×10^3V/W	
NEP		18pw/√Hz		36pw/√Hz	
Saturation optical power		800μW		1.6mW	
Parameters		KT-PR-1G-A		KT-PR-1G-B	
Spectral range		850~1650nm		320~1000nm	
Material type		InGaAs		Si	
Light input		Optical fiber	Free space	Optical fiber	Free space
Ø of photosensitive area		-	75um	-	200um
-3dB bandwidth	AC	100K~1GHz		100K~1GHz	
	DC	DC-100KHz		DC-100KHz	
Rise Time		0.35ns		0.35ns	
Responsivity		0.9A/W@1550nm		0.5A/W@700nm	
Gain		1.6×10^3V/W		0.8×10^3V/W	
Minimum optical power		-29dBm		-26dBm	
NEP		25pw/√Hz		50pw/√Hz	
Saturation optical power		1.2mW		2.4mW	
Parameters		KT-PR-2G-A		KT-PR-2G-B	
Spectral range		850~1650nm		320~1000nm	
Material type		InGaAs		Si	
Light input		Optical fiber	Free space	Optical fiber	Free space
Ø of photosensitive area		-	75um	-	200um
-3dB bandwidth	AC	100K~2GHz		100K~2GHz	
	DC	DC-100KHz		DC-100KHz	
Rise Time		0.18ns		0.18ns	
Responsivity		0.9A/W@1550nm		0.5A/W@700nm	
Gain		0.8×10^3V/W		0.4×10^3V/W	
Minimum optical power		-25dBm		-23dBm	
NEP		32pw/√Hz		65pw/√Hz	
Saturation optical power		1.2mW		2.4mW	

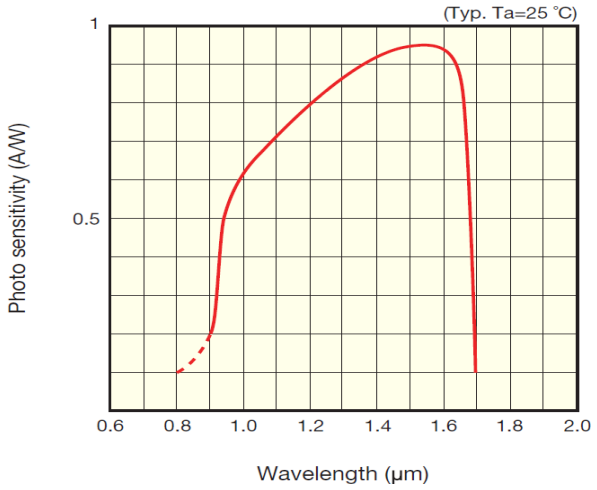
General parameters:

Parameter	Value
Operating Voltage	DC ±15V
Working current	80mA
Input connector	FC/Free Space
Output connector	SMA(f)
Output impedance	50Ω
Output Coupling Outside	DC (KG-PR-1G, KG-PR-2G: AC coupling)
Shape size (mm)	76.0 × 72.6 × 44.0

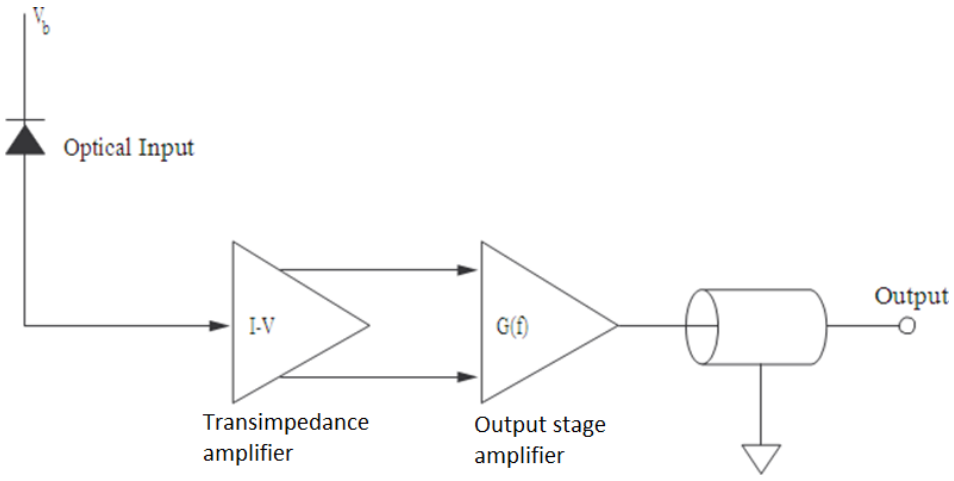
Absolute parameters:

Parameters	Symbol	Unit	Min. value	Typ. value	Max. value
Input optical power	P_{in}	mW			10
Operating Voltage	V_{op}	V	±13.5	±15	±16.5
Operating temperature	T_{op}	℃	-10		60
Storage temperature	T_{st}	℃	-40		85
Humidity	RH	%	5		90

Spectral characteristics:



Schematic diagram:



Package size (mm):