

Recommended Operating Conditions

(Ta=25°C)

Parameter	Symbol	MIN.	TYP.	MAX.	Unit
Operating supply voltage	Vcc	4.75	5.0	5.25	V
Operating supply voltage 1	Vs	2.0	2.1	2.2	V
Operating supply voltage 2	Vs	2.4	2.5	2.6	V

Electrical Characteristics 1

(Ta=25°C, Vcc=5V, Vs=2.1V, RL=10kΩ [V_{RF} terminal : RL=0 Ω] CL= 10 pF)

Parameter	Symbol	Conditions	MIN.	TYP.	MAX.	Unit	Applications
Supply current	Icc	–	8.8	14.8	20	mA	Vcc
Output off-set voltage 1	Vod1	Specified by voltage difference from Vs	-25	0	+25	mV	VA to VD
Output off-set voltage 2	Vod2	Specified by voltage difference from Vs	-15	0	+15	mV	VE, VF
Output off-set voltage 3	Vod3	Referred to GND	1.25	1.4	1.55	V	VRF
Extremes of off-set voltage	ΔVod	A - B	-20	0	+20	mV	VA, VB
		C - D	-20	0	+20		VC, VD
		(A+C) - (B+D)	-20	0	+20		VA to VD
		E - F	-15	0	+15		VE, VF
		A+B+C+D	-40	+5	+50		VA to VD

(Ta=25°C, Vcc=5V, Vs=2.5V, RL=10kΩ [V_{RF} terminal : RL=0 Ω] CL= 10 pF)

Parameter	Symbol	Conditions	MIN.	TYP.	MAX.	Unit	Applications
Output off-set voltage 4	Vod1	Specified by voltage difference from Vs	-25	+2	+28	mV	VA to VD
Output off-set voltage 5	Vod2	Specified by voltage difference from Vs	-16	0	+16	mV	VE, VF
Output off-set voltage 6	Vod3	Referred to GND	1.25	1.4	1.55	V	VRF
Extremes of off-set voltage	ΔVod	(A+C) - (B+D)	-22	0	+22	mV	VA to VD
		E - F	-15	0	+15		VE, VF
		A+B+C+D	-40	+13	+62		VA to VD

Electrical Characteristics 2

(Ta=25°C, Vcc=5V, Vs=2.1V, RL=10kΩ [V_{RF} terminal : RL=0 Ω] CL= 10 pF)

Parameter	Symbol	Conditions	MIN.	TYP.	MAX.	Unit	Applications
*3*4 Sensitivity 1	RP1	-	18.0	24.6	31.2	mV/μW	VA to VD
*3*4 Sensitivity 2	RP2	-	31.2	44.7	58.1	mV/μW	VE, VF
*3*4 Sensitivity 3	RP3	-	30.2	43.2	56.1	mV/μW	VRF
*5 Extreme of sensitivity	ΔRP	-	-	-	10	%	-
Sensitivity ratio 1	RP2/RP1	-	-	1.81	-	-	-
Sensitivity ratio 2	RP3/RP1	-	1.67	1.76	1.84	-	-
*4*6 Response frequency 1	fc1	-3dB	34	65	-	MHz	VA to VF
*4*6 Response frequency 2	fc2	-3dB	55	75	-	MHz	VRF
*4*6 Response frequency 3	fc3	-3dB	1	5	-	MHz	VE, VF
*4*6 Response frequency 4	fc4	Average of VA to VD	45	65	-	MHz	VA to VD
*4 High level output voltage 1	VOH1	-	3.8	-	-	V	VA to VD
*4 High level output voltage 2	VOH2	-	3.8	-	-	V	VRF
*4 Response sensitivity 1	ΔRp1	1 MHz to 23.1 MHz	-1.0	+1.0	+2.0	dB	VA to VF
*4 Response sensitivity 2	ΔRp2	1 MHz to 23.1 MHz	-1.0	+1.0	+2.0	dB	VRF
*4*7 Group delay deviation 1	tgdl	Average of f=1 to 23.1MHz, VA to VD	-	2.5	6	ns	VA to VD
*4*7 Group delay deviation 2	tgdl	f=1 to 23.1MHz	-	2.5	6	ns	VRF
Output noise level 1	Vn1	f=23.1MHz, BW=30kHz	-	-81	-76	dBm	VA to VD
Output noise level 2	Vn2	f=23.1MHz, BW=30kHz	-	-70	-65	dBm	VRF

*3 10μW, φ30μm of DC light is applied to the center of each photodiode.

Under that condition, sensitivity R is shown by following formula.

$$R = (V_p - V_{od}) / 5\mu W$$

*4 Light source : laser diode of λ=780nm

*5 Extreme of sensitivity is shown by following formula.

$$2 \times (R_{p1max} - R_{p1min}) / (R_{p1max} + R_{p1min}) \times 100$$

$$2 \times (R_{p2max} - R_{p2min}) / (R_{p2max} + R_{p2min}) \times 100$$

*6 Frequency sensitivity is -3dB. (reference sensitivity : value at f= 1 MHz)

*7 In addition to 10μW, φ30μm DC light, 4μWp-p AC light is applied to the center of each photodiode. BW=10kHz