

RF Power Detectors

TruPwr rms Responding Detectors

Part Number	Description	Input Frequency (GHz)	Input Range (dBm)	Dynamic Range (dB)	V _s (V)	I _{sv} (mA)	Package (mm)	ECCN Code	Ordering Part Number
AD8361	Linear in V/V rms	LF to 2.5	-21 to +9	30	3 to 5	1.1	SOT-23	5A991.b	AD8361ARTZ-RL7
AD8361	Linear in V/V rms	LF to 2.5	-21 to +9	30	3 to 5	1.1	SOIC	5A991.b	AD8361ARMZ-REEL7
AD8364	Dual linear-in-dB	LF to 2.7	-58 to +2	60	5	70	5 × 5 LFCSP	5A991.b	AD8364ACPZ-WP
AD8362	Linear-in-dB	LF to 3.8	-55 to +12	65	5	20	TSSOP	5A991.b	AD8362ARUZ-REEL7
HMC1010	Linear-in-dB	0 to 3.9	-52 to +10	60	5	48	4 × 4 LFCSP	EAR99	HMC1010LP4E
HMC1020	Linear-in-dB	0 to 3.9	-64 to +7	71	5	55	4 × 4 LFCSP	EAR99	HMC1020LP4E
HMC1021	Linear-in-dB with envelope detector	0 to 3.9	-62 to +8	70	5	75	4 × 4 LFCSP	EAR99	HMC1021LP4E
HMC1030	Dual linear-in-dB with envelope detector	0 to 3.9	-61 to +10	70	5	143	5 × 5 LFCSP	EAR99	HMC1030LP5E
HMC1120	Linear-in-dB with envelope detector	0 to 3.9	-62 to +10	72	3	70	4 × 4 LFCSP	EAR99	HMC1120LP4E
HMC909	Linear-in-dB	0 to 5.8	-51 to -11	40	5	42	4 × 4 LFCSP	EAR99	HMC909LP4E
ADL5511	Linear in V/V rms with envelope detector	0 to 6	-30 to +17	47	5	21.5	4 × 4 LFCSP	EAR99	ADL5511ACPZ-R7
AD8363	Linear-in-dB	-0 to 6	-52 to +0	52	5	60	4 × 4 LFCSP	5A991.b	AD8363ACPZ-WP
LT5581	Linear-in-dB	0.01 to 6	-35 to +8	40	2.7 to 5	1.4	3 × 2 DFN	EAR99	LT5581IDDB#TRPBF
LTC5587	Linear-in-dB, integrated 12-bit ADC	0.01 to 6	-35 to +8	40	3.3	3	3 × 3 DFN	EAR99	LTC5587IDD#TRPBF
LTC5583	Dual-channel, linear-in-dB, VSWR, peak detect	0.04 to 6	-57 to +3	60	3.3	80.5	4 × 4 QFN	EAR99	LTC5583IUF#TRPBF
ADL5501	Linear in V/V rms	0.05 to 6	-19 to +11	30	3 to 5	1.1	2 × 2 SC70	5A991.b	ADL5501AKSZ-R2
ADL5500	Linear in V/V rms	0.1 to 6	-20 to +10	30	3 to 5	1	1 × 1 WLCSP	5A991.b	ADL5500ACBZ-P7
ADL5903	Linear-in-dB	0.2 to 6	-22 to +13	35	3 to 5	2.5	2 × 2 LFCSP	5A991.b	ADL5903ACPZN-R7
ADL5502	Linear in V/V rms with peak/envelope detector	0.45 to 6	-25 to +12	37	3	3	3 × 3 WLCSP	5A991.b	ADL5502ACBZ-P7
ADL5504	Linear in V/V rms excellent rms accuracy	0.45 to 6	-22 to +15	35	3	1.8	1.2 × 0.8 WLCSP	5A991.b	ADL5504ACBZ-P7
ADL5505	Linear in V/V rms	0.45 to 6	-22 to +14	35	3	1.8	0.8 × 0.8 WLCSP	5A991.b	ADL5505ACBZ-P7
ADL5904 <i>New</i>	Linear-in-dB rms with threshold detector	0 to 6	-30 to +15	45	3.3	3	3 × 3 LFCSP	EAR99	ADL5904ACPZN-R7
ADL5920 <i>Upcoming</i>	Directional bridge, dual rms detector	-0 to 7 GHz	-20 to +30	50	5	150	5 × 5 LFCSP	EAR99	ADL5920ACPZ-R2
ADL5902	Linear-in-dB	0.05 to 9	-62 to +3	65	5	73	4 × 4 LFCSP	5A991.b	ADL5902ACPZ-WP
ADL5906	Linear-in-dB	0.01 to 10	-60 to +5	65	5	70	4 × 4 LFCSP	5A991.b	ADL5906ACPZN-R2
LTC5582	Linear-in-dB	0.04 to 10	-56 to +1	57	3.3	41.6	3 × 3 DFN	EAR99	LTC5582IDD#TRPBF
LTC5596	Linear-in-dB	0.1 to 40	-32 to +3	35	3.3	30	2 × 2 DFN	EAR99	LTC5596IDC#TRPBF

Log Detectors/Amplifiers

Part Number	Description	Input Frequency (GHz)	Input Range (dBm)	Dynamic Range (dB)	Rise/Fall Time (ns)	V _s (V)	I _{sv} (mA)	Package (mm)	ECCN Code	Ordering Part Number
AD8306	Log/limiting amplifier	0.005 to 0.4	-91 to +9	100	73/73	3 to 5	16	Die	EAR99	AD8306ACHIPS
AD8306	Log/limiting amplifier	0.005 to 0.4	-91 to +9	100	73/73	3 to 5	16	SOP	EAR99	AD8306ARZ-RL7
AD8310	Log detector	0 to 0.44	-90 to +5	95	15/30	3 to 5	8	Die	EAR99	AD8310ACHIPS
AD8310	Log detector	0 to 0.44	-90 to +5	95	15/30	3 to 5	8	MSOP	EAR99	AD8310ARMZ-REEL7
AD8307	Log detector	0 to 0.5	-75 to +17	92	400/400	3 to 5	8	SOIC	EAR99	AD8307ARZ-RL7
AD8307	Log detector	0 to 0.5	-75 to +17	92	400/400	3 to 5	8	PDIP	EAR99	AD8307ANZ
AD8309	Log/limiter amplifier	0.005 to 0.5	-76 to +20	100	400/400	3 to 5	16	TSSOP	EAR99	AD8309ARUZ-REEL7
LT5537	Log detector	<0.01 to 1	-71 to +12	83	110/115	2.7 to 5	13.5	3 × 2 DFN	EAR99	LT5537EDDB#TRPBF
AD8313	Log detector/controller	0.1 to 2.5	-72 to 0	70	60/60	3 to 5	13.7	MSOP	EAR99	AD8313ARMZ-REEL7
AD8314	Log detector/controller	0.1 to 2.7	-65 to -14	45	100/140	3 to 5	4.5	MSOP	EAR99	AD8314ARMZ-REEL7
AD8314	Log detector/controller	0.1 to 2.7	-65 to -14	45	100/140	3 to 5	4.5	2 × 3 LFCSP	EAR99	AD8314ACPZ-RL7
AD8302	Gain and phase detector	0 to 2.7	-60 to 0	60	50/60	3 to 5	19	TSSOP	EAR99	AD8302ARUZ-RL7
LT5504	Log detector	0.8 to 2.7	-67 to 3	75	200/150	2.7 to 5	14.7	MSOP	EAR99	LT5504EMS8#TRPBF
LT5534	Log detector	0.05 to 3	-55 to -3	60	40/70	2.7 to 5	7	2 × 2 SC70	EAR99	LT5534ESC6#TRPBF
HMC612	Log detector/controller	0 to 3	-65 to 5	70	19/100	3 to 5	29	4 × 4 LFCSP	EAR99	HMC612LP4E
AD8312	Log detector	0.05 to 3.5	-50 to 2	45	85/120	3 to 5	4.2	1 × 1.5 WLCSP	5A991.g	AD8312ACBZ-P2
LT5538	Log detector	0.04 to 3.8	-65 to 1	70	100/180	3 to 5	29	3 × 3 DFN	EAR99	LT5538IDD#TRPBF
HMC600	Log detector/controller	0.05 to 4	-61 to 0	70	90/90	3 to 5	29	4 × 4 LFCSP	EAR99	HMC600LP4E
HMC601	Log detector/controller	0.01 to 4	-64 to 2	75	15/15	3 to 5	30	4 × 4 LFCSP	EAR99	HMC601LP4E
ADL5513	Log detector/controller	0.001 to 4	-64 to 6	80	20/21	3 to 5	31	3 × 3 WLCSP	EAR99	ADL5513ACPZ-WP
ADL5506	Log detector	0.03 to 4.5	-44 to 2	45	65/145	3 to 5	3.75	0.8 × 1.2 WLCSP	5A991.b	ADL5506ACBZ-R7
HMC713	Log detector/controller	0.05 to 8	-55 to 0	54	24/36	3 to 5	17	3 × 3 LFCSP	EAR99	HMC713LP3E
HMC713	Log detector/controller	0.05 to 8	-55 to 0	54	24/70	3 to 5	17	MSOP	EAR99	HMC713MS8E
AD8318	Log detector/controller	0.001 to 8	-60 to -3	60	10/12	5	68	4 × 4 LFCSP	EAR99	AD8318ACPZ-WP

■ = Simulation models available in ADI's ADIsimRF and/or ADIsimPLL simulation tools.

Log Detectors/Amplifiers (Continued)

Part Number	Description	Input Frequency (GHz)	Input Range (dBm)	Dynamic Range (dB)	Rise/Fall Time (ns)	V _s (V)	I _{sv} (mA)	Package (mm)	ECCN Code	Ordering Part Number
HMC602	Log detector/controller	0.001 to 8	-55 to +8	70	9.5/10	5	113	4 × 4 LFCSP	EAR99	HMC602LP4E
AD8319	Log detector/controller	0.001 to 10	-54 to -4	45	10/6	3.3 to 5	22	2 × 3 LFCSP	EAR99	AD8319ACPZ-WP
AD8317	Log detector/controller	0.001 to 10	-59 to -4	55	10/6.1	3.3 to 5	22	2 × 2 LFCSP	EAR99	AD8317ACPZ-WP
AD8317	Log detector/controller	0.001 to 10	-59 to -4	55	10/6.1	3.3 to 5	22	Die	EAR99	AD8317ACHIPS
HMC611	Log detector/controller	0.001 to 10	-57 to +6	63	10/10	5	106	Die	EAR99	HMC611
HMC611	Log detector/controller	0.001 to 10	-57 to +6	69	10/10	5	106	4 × 4 LFCSP	EAR99	HMC611LP4E
ADL5519	Dual log detector/controller	0.001 to 10	-60 to -5	62	8/6	3.3 to 5	60	5 × 5 LFCSP	EAR99	ADL5519ACPZ-WP
HMC1094	Millimeter wave log detector	1 to 23	-47 to 0	50	12/65	3.3	85	3 × 3 LFCSP	EAR99	HMC1094LP3E
HMC948	Millimeter wave log detector	1 to 23	-40 to +10	54	5/7	3.3	91	3 × 3 LFCSP	EAR99	HMC948LP3E
HMC662	Millimeter wave log detector	8 to 30	-42 to +10	54	5/10	3.3	88	3 × 3 LFCSP	EAR99	HMC662LP3E
HMC7447	E-band detector	71 to 86	-0.5 to +23.5	24	—	—	—	Die	EAR99	HMC7447

Envelope and Peak Detectors

Part Number	Description	Frequency (GHz)	Envelope Bandwidth (MHz)	Input Range (dBm)	Dynamic Range (dB)	Rise Time (ns)	V _s (V)	I _{sv} (mA)	Package (mm)	ECCN Code	Ordering Part Number
LTC5507	Schottky peak detector with gain compression	0.0001 to 1	1	-18 to +14	32	—	2.7 to 6	0.55	TSOT-23	EAR99	LTC5507ES6#TRPBF
LTC5509	Schottky peak detector with no gain compression	0.3 to 3	1.5	-18 to +7	25	—	2.7 to 6	0.58	SC70	EAR99	LTC5509ESC6#TRPBF
LTC5505-1	Schottky peak detector with gain compression	0.3 to 3	4	-20 to +18	38	—	2.7 to 6	0.5	SOT-23	EAR99	LTC5505-1ES5#TRPBF
LTC5505-2	Schottky peak detector with gain compression	0.3 to 3.5	4	-20 to +12	32	—	2.7 to 6	0.5	SOT-23	EAR99	LTC5505-2ES5#TRPBF
HMC1030	Dual rms linear-in-dB with envelope detector	0 to 3.9	150	-61 to +10	70	50	5	143	5 × 5 LFCSP	EAR99	HMC1030LP5E
HMC1120	Linear-in-dB with envelope detector	0.1 to 3.9	150	-60 to +10	70	200	3	70	4 × 4 LFCSP	EAR99	HMC1120LP4E
HMC1021	RMS detector with envelope tracker	0 to 3.9	150	-62 to +8	70	50	5	75	4 × 4 LFCSP	EAR99	HMC1021LP4E
ADL5502	RMS crest factor detector	0.45 to 6	10	-25 to +12	37	3000	3	3	3 × 3 WLCSP	5A991.b	ADL5502ACBZ-P7
ADL5910 <i>New</i>	Threshold detector	0 to 6	100	-30 to +15	45	12	3.3	3.5	3 × 3 LFCSP	EAR99	ADL5910ACPZN-R7
ADL5511	RMS linear-in-V/V with envelope detector	0 to 6	130	-30 to +17	47	4	5	21.5	4 × 4 LFCSP	EAR99	ADL5511ACPZ-R7
LTC5530	Schottky peak detector with gain adjust	0.3 to 7	2	-24 to +7	30	—	2.7 to 5.5	0.5	TSOT-23	EAR99	LTC5530ES6#TRPBF
LTC5531	Schottky peak detector with offset adjust	0.3 to 7	2	-24 to +7	30	—	2.7 to 5.5	0.5	TSOT-23	EAR99	LTC5531ES6#TRPBF
LTC5532	Schottky peak detector with gain and offset adjust	0.3 to 7	2	-24 to +7	30	—	2.7 to 5.5	0.5	TSOT-23	EAR99	LTC5532ES6#TRPBF
LTC5508	Schottky peak detector with gain compression	0.3 to 7	2	-24 to +12	36	—	2.7 to 6	0.55	SC70	EAR99	LTC5508ESC6#TRPBF
LTC5536	Schottky peak detector and 20 ns comparator	0.6 to 7	—	-20 to +12	32	20	2.7 to 5.5	2.1	TSOT-23	EAR99	LTC5536ES6#TRPBF
LTC5535	Schottky peak detector	0.6 to 7	12	-20 to +9	30	40	2.7 to 5.5	2	TSOT-23	EAR99	LTC5535ES6#TRPBF
LTC5533	Dual Schottky peak detector	0.3 to 11	2	-20 to +7	30	—	2.7 to 6	0.9	4 × 3 DFN	EAR99	LTC5533EDE#TRPBF
LTC5564	Ultrafast Schottky peak detector with 9 ns comparator	0.6 to 15	75	-10 to +16	26	7	3 to 5.5	44	3 × 3 QFN	EAR99	LTC5564IUD#TRPBF
ADL6010	Envelope detector	0.5 to 43.5	40	-30 to +15	45	4	5	3	2 × 2 LFCSP	5A991.b	ADL6010ACPZN-R7
ADL6012 <i>Upcoming</i>	Envelope detector	2.0 to 43.5	500	-10 to +15	25	2	5	26	3 × 2 LFCSP	5A991.b, EAR99	ADL6012ACPZN-R7

SDLVAs

Part Number	Description	Frequency (GHz)	Rise/Fall Time (ns)	Input Range (dBm)	Dynamic Range (dB)	Prop Delay (ns)	Threshold (dBm)	V _s (V)	I _{sv} (mA)	Package (mm)	ECCN Code	Ordering Part Number
HMC1013	High range SDLVA	0.5 to 18.5	4/10	-57 to +10	67	10	-62	3.3	183	4 × 4 LFCSP	EAR99	HMC1013LP4E
HMC613	SDLVA	0.1 to 20	4/18	-54 to +5	59	14	-54	3.3	83	4 × 4 LFCSP	EAR99	HMC613LC4B
HMC913	SDLVA	0.6 to 20	5/10	-54 to +5	59	14	-54	3.3	80	Die	EAR99	HMC913
HMC913	SDLVA	0.6 to 20	5/10	-54 to +5	59	14	-54	3.3	80	4 × 4 LFCSP	EAR99	HMC913LC4B
HMC813	SDLVA with limited output	1 to 26	4/10	-48 to +5	55	15	-53	3.3	150	Die	EAR99	HMC813
HMC813	SDLVA with limited output	1 to 26	5/10	-41 to +10	55	15	-53	3.3	150	4 × 4 LFCSP	EAR99	HMC813LC4B

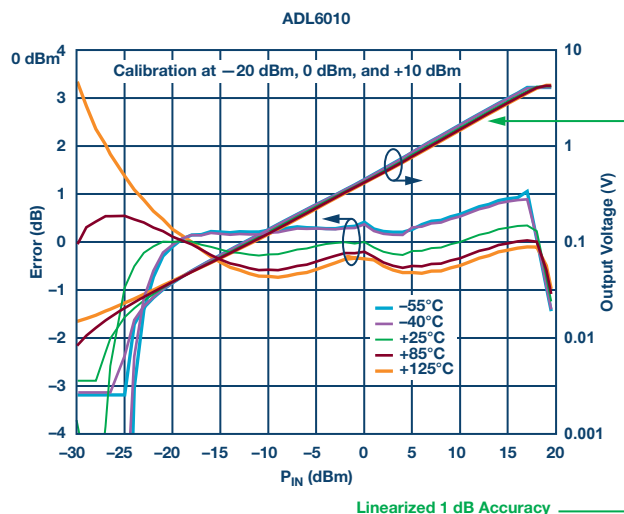
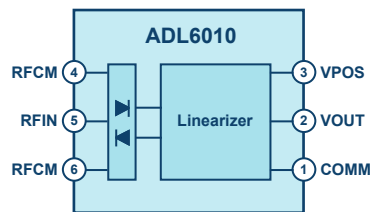
ADL6010: Widest Bandwidth, Fastest Response Peak/Envelope Detector

Features

- ▶ Linearized Schottky diode detector
- ▶ 50 Ω matched from 500 MHz to 43.5 GHz
- ▶ 45 dB dynamic range: -30 dBm to -15 dBm
- ▶ ±1 dB measurement accuracy over temperature
- ▶ 10 ns response time
- ▶ Log-linear in volts response
- ▶ 5 V/1.6 mA supply
- ▶ Small 2.05 mm × 2.05mm LFCSP package
- ▶ A-grade: -40°C to +85°C
- ▶ S-grade: -55°C to +125°C available

Applications

- ▶ Microwave backhaul
- ▶ Communications infrastructure
- ▶ Pulsed radar systems
- ▶ Test instrumentation
- ▶ Fast signal detect
- ▶ Optical communications



LTC5596: Widest Bandwidth, Highest Sensitivity rms Detector

Key Features

- ▶ 50 Ω matched from 100 MHz to 40 GHz
- ▶ 35 dB dynamic range: -37 dBm to -2 dBm
- ▶ ±1 dB measurement accuracy
- ▶ Log-linear in dB response
- ▶ 3.3 V/30 mA supply
- ▶ Small 2 mm × 2 mm, 8-lead DFN package
- ▶ I-grade: -40°C to +105°C case temperature
- ▶ H-grade: -40°C to +125°C case rated



Applications

- ▶ Microwave backhaul
- ▶ Communications infrastructure
- ▶ Radar systems
- ▶ Test instrumentation
- ▶ Telematics

