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Selection Guide 2015

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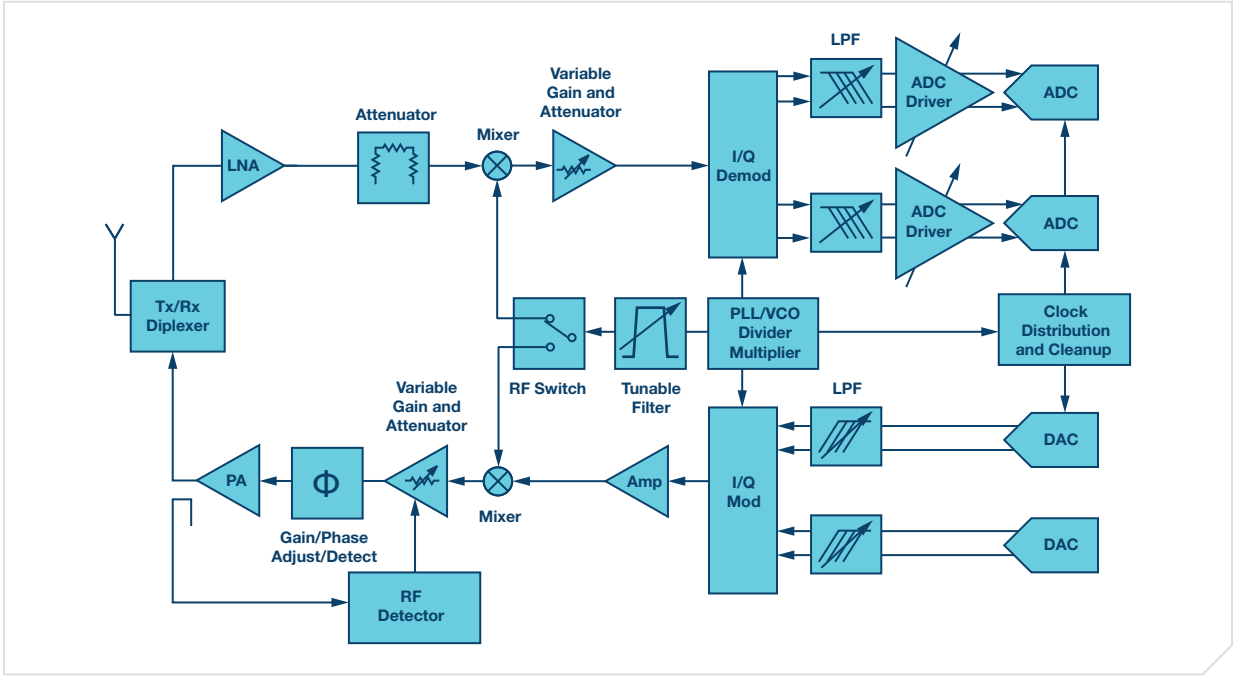

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RF Amplifiers

RF/IF Differential Amplifiers

Part Number	Description	Freq (MHz)	Gain Range (dB)	OIP3 (dBm)	2nd/3rd Harmonic (dBc)	NF @ Max Gain (dB)	Specs @ (MHz)	V_S (V)	I_{SY} (mA)	Package (mm)
AD8372	Dual diff DGA, 1 dB step	130	–9 to +32	35	–78/–85	7.9	65	5	212	5 × 5, 32-lead LFCSP
AD8375	Diff DGA, 1 dB step	630	–4 to +20	50	–85/–92	8.3	200	5	125	4 × 4, 24-lead LFCSP
ADL5201	Diff DGA with parallel and serial control, 0.5 dB step	700	–11.5 to +20	51	–89/–97	7.5	140	5	110	4 × 4, 24-lead LFCSP
ADL5202	Dual diff DGA with parallel and serial control, 0.5 dB step	700	–11.5 to +20	50	–86/–105	7.5	140	5	210	6 × 6, 40-lead LFCSP
AD8376	Dual diff DGA, 1 dB step	700	–4 to +20	50	–82/–91	8.7	200	5	250	5 × 5, 32-lead LFCSP
AD8370	Diff DGA, step <1 dB	750	–8 to +34	35	–65/–62	7.2	70	3/5	79	16-lead TSSOP
AD8350	Fixed-gain diff amp	900	15/20	28	–66/–65	6.8	50	14/11	28/30	8-lead SOIC, 8-lead MSOP
AD8351	Resistor programmed diff amp	2200	0 to 26	31	–79/–81	15.5	70	3/5	28	10-lead MSOP
AD8352	Resistor programmed diff amp	2200	3 to 25	41	–83/–82	15.5	140	3/5	37	3 × 3, 16-lead LFCSP
ADL5561	Pin strap, diff amp	2900	6, 12, 15.5	49	–95/–87	8	140	3.3	40	3 × 3, 16-lead LFCSP
ADA4961	Diff DGA with parallel and serial control, 1 dB step	3200	–3 to +18	50	–84/–100	5.6	1000	3/5	150	4 × 4, 24-lead LFCSP

RF/IF Differential Amplifiers

Part Number	Description	Freq (MHz)	Gain Range (dB)	OIP3 (dBm)	2nd/3rd Harmonic (dBc)	NF @ Max Gain (dB)	Specs @ (MHz)	V_S (V)	I_{SY} (mA)	Package (mm)
ADL5562	Pin strap, diff amp	3300	6, 12, 15.5	47	–104/–87	7.3	140	3.3	80	3 × 3, 16-lead LFCSP
ADL5566	Dual pin strap, diff amp	4500	0 to 16	50.9	–94.7/–100	6.58	100	3/5	140/160	4 × 4, 24-lead LFCSP
ADL5565	Pin strap, diff amp	7000	6, 12, 15.5	53	–108/–103	8.7	100	3/5	70/80	3 × 3, 16-lead LFCSP

Low Noise Amplifiers

Part Number	Description	Freq (GHz)	Gain (dB)	OP1dB (dBm)	OIP3 (dBm)	NF (dB)	V_S (V)	I_{SY} (mA)	Match	Package (mm)
HMC356	LNA	0.35 to 0.55	17	21	38	1	5	104	Ext	3 × 3, 16-lead LFCSP
HMC549	75 Ω diff/sing output LNA	0.04 to 0.96	5	12	27	3.5	5	120	Int	8-lead MSOP
HMC599	75 Ω LNA	0.05 to 1	14	19	39	2.2	5	120	Int	SOT-89
HMC372	LNA	0.7 to 1	15	21	34	1	5	100	Ext	3 × 3, 16-lead LFCSP
HMC376	LNA	0.7 to 1	15	21	36	0.7	5	73	Int	3 × 3, 16-lead LFCSP
HMC618A ***New***	LNA	1.2 to 2.2	19	20	36	0.75	5	117	Int	3 × 3, 16-lead LFCSP
HMC382	LNA	1.7 to 2.2	17	16	30	1	5	67	Int	3 × 3, 16-lead LFCSP
HMC375	LNA	1.7 to 2.2	17	18	34	0.9	5	136	Ext	3 × 3, 16-lead LFCSP

Low Noise Amplifiers

Part Number	Description	Freq (GHz)	Gain (dB)	OP1dB (dBm)	OIP3 (dBm)	NF (dB)	V_S (V)	I_{SY} (mA)	Match	Package (mm)
HMC451	LNA	0.3 to 3	15	22	37	1.5	5	90	Int	SOT-26, SC70
HMC639	High IP3 LNA	0.2 to 4	13	22	38	2.3	5	110	Int	SOT-89
HMC636	High IP3 LNA	0.2 to 4	13	22	40	2.2	5	155	Int	SOT-89
ADL5523	LNA	0.4 to 4	21.5	21	34	0.8	3/5	30/60	Ext	8-lead LFCSP
ADL5521	LNA	0.4 to 4	20.8	21.8	37	0.9	3/5	30/60	Ext	8-lead LFCSP
HMC594	LNA	2 to 4	10	21	36	2.6	6	100	Int	Die, 3 × 3, 12-lead LFCSP
HMC609	LNA	2 to 4	20.5	21	36	3	6	170	Int	Die, 4 × 4, 2-lead LFCSP
HMC902	LNA	5 to 10	20	16	28	1.6	3.5	80	Int	Die, 3 × 3, 16-lead LFCSP
HMC753	LNA	1 to 11	17	18	30	1.5	5	55	Int	4 × 4, 24-lead LFCSP
HMC-ALH444	LNA	1 to 12	17	19	28	1.5	5	55	Int	Die
HMC772	LNA	2 to 12	15	13	25	1.8	4	45	Int	4 × 4, 24-lead LFCSP
HMC564	LNA	7 to 14	17	13	25	1.8	3	51	Int	Die, 4 × 4, 24-lead LFCSP
HMC903	LNA	6 to 17	19	15	27	1.6	3.5	80	Int	Die, 3 × 3, 16-lead LFCSP
HMC516	LNA	7 to 17	21	15	20	1.8	3	65	Int	Die, 5 × 5, 32-lead LFCSP
HMC490	Medium power LNA	12 to 17	27	26	35	2	5	200	Int	Die, 5 × 5, 32-lead LFCSP

Low Noise Amplifiers

Part Number	Description	Freq (GHz)	Gain (dB)	OP1dB (dBm)	OIP3 (dBm)	NF (dB)	V_S (V)	I_{SY} (mA)	Match	Package (mm)
HMC-ALH435	LNA	5 to 20	13	16	25	2.2	5	30	Int	Die
HMC565	LNA	6 to 20	22	10	20	2.3	3	53	Int	Die, 5 × 5, 32-lead LFCSP
HMC342	LNA	13 to 25	22	9	20	3.5	3	43	Int	Die
HMC517	LNA	17 to 26	20	11	23	2	3	67	Int	Die, 4 × 4, 24-lead LFCSP
HMC963	LNA	6 to 26.5	22	10	18	2.5	3.5	45	Int	4 × 4, 24-lead LFCSP
HMC962	LNA	7.5 to 26.5	13	13	23	2.5	3.5	70	Int	4 × 4, 24-lead LFCSP
HMC-ALH311	LNA	22 to 26.5	25	12	—	3	2.5	54	Int	Die
HMC-ALH216	LNA	14 to 27	18	14	—	2.5	4	90	Int	Die
HMC504	LNA	14 to 27	19.5	17	—	2.2	4	90	—	4 × 4, ceramic, 24-lead SMT
HMC-ALH476	LNA	14 to 27	20	14	—	2	4	90	Int	Die
HMC751	LNA	17 to 27	25	13	25	2.2	4	73	Int	4 × 4, 24-lead LFCSP
HMC752	LNA	24 to 28	25	13	26	2.5	3	70	Int	4 × 4, 24-lead LFCSP
HMC341	LNA	21 to 29	13	8	19	2.5	3	35	Int	Die, 3 × 3, 12-lead LFCSP
HMC519	LNA	18 to 32	15	14	23	2.8	3	65	Int	Die, 4 × 4, 24-lead LFCSP
HMC518	LNA	20 to 32	15	12	23	3	3	65	Int	Die
HMC-ALH364	LNA	24 to 32	21	7	—	2	5	68	Int	Die
HMC-ALH313	LNA	27 to 33	20	12	—	3	2.5	52	Int	Die
HMC263	LNA	24 to 36	22	8	17	2	3 to 5	58	Int	Die, 4 × 4, 24-lead LFCSP
HMC566	LNA	28 to 36	21	12	24	2.8	3	82	Int	Die, 4 × 4, 24-lead LFCSP

Low Noise Amplifiers

Part Number	Description	Freq (GHz)	Gain (dB)	OP1dB (dBm)	OIP3 (dBm)	NF (dB)	V_S (V)	I_{SY} (mA)	Match	Package (mm)
HMC-ALH445	LNA	18 to 40	10	12	—	3.9	5	45	Int	Die
HMC-ALH369	LNA	24 to 40	22	11	—	2	5	66	Int	Die
HMC-ALH244	LNA	24 to 40	12	13	—	3.5	4	45	Int	Die
HMC-ALH140	LNA	24 to 40	11.5	15	—	4	4	60	Int	Die
HMC-ALH310	LNA	37 to 42	22	12	—	3.5	2.5	52	Int	Die
HMC1040	LNA	24 to 43.5	22	12	22	2.7	2.5	70	Int	3 × 3, 16-lead LFCSP
HMC-ALH376	LNA	35 to 45	16	6	—	2	4	87	Int	Die
HMC-ALH382	LNA	57 to 65	21	12	—	4	2.5	64	Int	Die
HMC-ALH508	LNA	71 to 86	13	7	—	5	2.4	30	—	—
HMC-ALH509	LNA	71 to 86	14	7	—	5	2	50	Int	Die

Low Phase Noise Amplifiers

Part Number	Description	Freq (GHz)	Gain (dB)	OP1dB/ PSAT (dBm)	OIP3 (dBm)	NF (dB)	10 kHz SSB Phase Noise (dBc/Hz)	V_S (V)	I_{SY} (mA)	Package (mm)
HMC606	Low phase noise amp	2/18	14	15/18	27	4.5	–160	5	64	Die, 32-lead LFCSP

Gain Blocks

Part Number	Description	Freq (GHz)	Gain (dB)	OP1dB (dBm)	OIP3 (dBm)	NF (dB)	V_S (V)	I_{SY} (mA)	Match	Package (mm)
ADL5531	IF gain block	0.020 to 0.5	20.9	20.4	41	2.5	5	100	Int	8-lead LFCSP
ADL5534	Dual IF gain block	0.020 to 0.5	21	20.4	40.4	2.5	5	98	Int	16-lead LFCSP
HMC754	Dual 75 Ω HBT gain block	DC to 1	14.5	21	38	5.5	5	160	Int	SMT, 8-lead SOIC
ADL5530	IF gain block	DC to 1	16.8	21.8	37	3	3/5	107/110	Int	8-lead LFCSP
ADL5535	IF gain block	0.020 to 1	16.1	18.9	45.5	3.2	5	97	Int	SOT-89
ADL5536	IF gain block	0.020 to 1	19.8	19.6	45	2.6	5	105	Int	SOT-89
HMC770	50 Ω/75 Ω diff gain block	0.04 to 1	16	23.5	40	2.75	5	270	Ext	4 × 4, 20-lead LFCSP
AD8354	RF/IF gain block	0.001 to 2.7	19.5	4.6	19	4.2	3/5	23/25	Int	8-lead LFCSP
AD8353	RF/IF gain block	0.001 to 2.7	19.8	9.1	23.6	5.3	3/5	41/42	Int	8-lead LFCSP
HMC740	HBT gain block	0.05 to 3	15	18	40	3.5	5	88	Int	SOT-89
HMC741	HBT gain block	0.05 to 3	20	18.5	42	2.5	5	96	Int	SOT-89
HMC395	HBT gain block	DC to 4	15	15	28	4.5	5	54	Int	Die
HMC589A	HBT gain block	DC to 4	21	21	33	4	5	82	Int	SOT-89
ADL5601	RF/IF gain block	0.05 to 4	15.3	19	43	3.7	5	83	Int	SOT-89
ADL5602	RF/IF gain block	0.05 to 4	19.5	19.3	42	3.3	5	89	Int	SOT-89
HMC480	HBT gain block	DC to 5	19	20	34	2.9	8	82	Int	SOT-89
HMC313	HBT gain block	DC to 6	17	14	27	6.5	5	50	Int	SOT-26
HMC311	HBT gain block	DC to 6	16	15.5	31.5	4.5	5	54	Int	3 × 3, 16-lead LFCSP, SC70, SOT-89

Gain Blocks

Part Number	Description	Freq (GHz)	Gain (dB)	OP1dB (dBm)	OIP3 (dBm)	NF (dB)	V_S (V)	I_{SY} (mA)	Match	Package (mm)
ADL5544	RF/IF gain block	0.030 to 6	17.4	17.6	34.9	2.9	5	55	Int	SOT-89
ADL5545	RF/IF gain block	0.030 to 6	24.1	18.1	36.4	2.9	5	56	Int	SOT-89
ADL5610	RF/IF gain block	0.030 to 6	18.4	20.6	38.4	2.1	5	91	Int	SOT-89
ADL5611	RF/IF gain block	0.030 to 6	22.1	21	38.5	2.1	5	91	Int	SOT-89
ADL5541	RF/IF gain block	0.05 to 6	14.7	16.3	39.2	3.8	5	90	Int	8-lead LFCSP
ADL5542	RF/IF gain block	0.05 to 6	18.7	18.3	39	3.2	5	93	Int	8-lead LFCSP
HMC396	HBT gain block	DC to 8	12	14	30	6	5	56	Int	Die
HMC397	HBT gain block	DC to 10	15	13	24	4.5	5	56	Int	Die
HMC405	HBT gain block	DC to 10	16	13	25	4	5	50	Int	Die
HMC788A	pHEMT gain block	DC to 10	14	20	33	7	5	76	Int	2 × 2, 4-lead LFCSP
HMC3587	HBT gain block	4 to 10	14.5	11	25	3.5	5	44	Int	3 × 3, 12-lead LFCSP
HMC608	High/low gain amp	9.5 to 11.5	29/20	27	33	6	5	310	Int	4 × 4, 24-lead LFCSP
HMC3653	HBT gain block	7 to 15	15	15	28	4	5	44	Int	3 × 3, 12-lead LFCSP

Driver Amplifiers

Part Number	Description	Freq (GHz)	Gain (dB)	OP1dB (dBm)	OIP3 (dBm)	NF (dB)	Specs @ (GHz)	V_S (V)	I_{SY} (mA)	Match	Package (mm)
ADL5605	2-stage 1 W driver	0.7 to 1	23	30.9	44.2	4.8	0.943	5	307	Ext	16-lead LFCSP
ADL5320	¼ W driver	0.4 to 2.7	13.2	25.7	42	4.4	2.14	3.3/5	47/104	Ext	SOT-89
ADL5604	1 W driver	0.7 to 2.7	12.2	29.1	42.2	4.6	2.63	5	318	Ext	16-lead LFCSP
ADL5606	2-stage 1 W driver	1.8 to 2.7	24.3	30.8	45.5	4.7	2.14	5	362	Ext	16-lead LFCSP
HMC789	HBT driver amp	0.7 to 2.8	18	25	42	3.8	0.9	5	125	Ext	SOT-89
ADL5324	½ W driver	0.4 to 4	14	28.9	44	3.5	2.14	3.3/5	60/135	Ext	SOT-89
ADL5321	¼ W driver	2.3 to 4	14	25.7	41	4	2.6	3.3/5	37/90	Ext	SOT-89
HMC326	HBT driver amp	3 to 4.5	21	23.5	36	5	3.5	5	130	Int	8-lead MSOP
HMC1131 ***New***	0.25 W driver amp	24 to 35	22	24	35	—	—	5	225	—	4 × 4, 24-lead LFCSP
HMC-AUH256	Driver amp	17.5 to 41	21	20	27	—	30	5	295	Int	Die

Wideband Distributed Amplifiers

Part Number	Description	Freq (GHz)	Gain (dB)	OP1dB (dBm)	OIP3 (dBm)	NF (dB)	V_S (V)	I_{SY} (mA)	Package (mm)
HMC637A	Wideband power amplifier	DC to 6	13	29	44	5	12	400	5 × 5, 32-lead LFCSP
HMC659	Wideband power amplifier	DC to 15	19	27.5	35	2.5	8	300	Die, 5 × 5, ceramic, 32-lead SMT
HMC633	Wideband driver	5 to 17	29	23	30	8	5	180	Die, 4 × 4, ceramic, 24-lead SMT
HMC459	Wideband power amp	DC to 18	17	25	32	3	8	290	Die

Wideband Distributed Amplifiers

Part Number	Description	Freq (GHz)	Gain (dB)	OP1dB (dBm)	OIP3 (dBm)	NF (dB)	V_S (V)	I_{SY} (mA)	Package (mm)
HMC463	Wideband LNA with AGC	2 to 20	14	18	28	2.5	5	60	Die, hermetic SMT, 5 × 5, 32-lead LFCSP
HMC-ALH102	Wideband LNA	2 to 20	10	10	—	2.5	2	55	Die
HMC462	Wideband LNA	2 to 20	15	15	26.5	2.5	5	63	Die, 5 × 5, 32-lead LFCSP
HMC1049	Wideband LNA	0.3 to 20	16	15	27	1.7	7	70	Die, 5 × 5, 32-lead LFCSP
HMC460	Wideband LNA	DC to 20	14	17	29.5	2.5	8	75	Die, 5 × 5, ceramic 32-lead SMT
HMC465	Wideband driver	DC to 20	17	22	30	2.5	8	160	Die, 5 × 5, 32-lead LFCSP
HMC634	Wideband driver	5 to 20	22	23	31	7.5	5	180	Die
HMC464	Wideband power amp	2 to 20	16	26	30	4	8	290	Die, 5 × 5, 32-lead LFCSP
HMC559	Wideband power amp	DC to 20	14	28	36	4	10	400	Die
HMC994A ***New***	Wideband power amp	DC to 30	14	28	36	4	10	250	5 × 5, 32-lead LFCSP
HMC562	Wideband driver	2 to 35	12.5	18	27	3	8	80	Die
HMC-AUH249	Fiber optic modulator driver	DC to 35	15	21	—	—	5	200	Die
HMC930A ***New***	Wideband power amp	DC to 40	13	22	33.5	5	10	175	Die
HMC5805A ***New***	0.25 W power amp	DC to 40	13.5	22	33	—	10	175	6 × 6, 16-lead SMT

Wideband Distributed Amplifiers

Part Number	Description	Freq (GHz)	Gain (dB)	OP1dB (dBm)	OIP3 (dBm)	NF (dB)	V_S (V)	I_{SY} (mA)	Package (mm)
HMC635	Wideband driver	18 to 40	19.5	23	29	6	5	280	Die, 4 × 4, 24-lead SMT
HMC-AUH232	Fiber optic modulator driver	DC to 43	14	16.5	—	4.2	5	180	Die
HMC1126 ***New***	Wideband power amp	2 to 50	11	17.5	28	—	5	65	Die
HMC1127 ***New***	High gain power amp	2 to 50	14.5	12.5	23	—	5	80	Die
HMC-AUH312	Fiber optic modulator driver	0.5 to 80	—	13	—	5	8	60	Die

Power Amplifiers

Part Number	Description	Freq (GHz)	Gain (dB)	OP1dB (dBm)	OIP3 (dBm)	NF (dB)	V_S (V)	I_{SY} (mA)	Match	Package (mm)
HMC450	Medium power amp	0.8 to 1	26	26	40	8	5	310	Ext	5 × 6, 16-lead QSOP
HMC452	1 W power amp	0.4 to 2.2	21	30	49	7.5	5	510	Ext	16-lead QSOP, SOT-89
HMC453	1.6 W power amp	0.4 to 2.2	20.5	32	49	6.5	5	725	Ext	16-lead QSOP, SOT-89
HMC413	Medium power amp	1.6 to 2.2	22	27	40	5.5	3.6	270	Ext	5 × 6, 16-lead QSOP
HMC461	1 W balanced power amp	1.7 to 2.2	12	29.5	45	6	5	300	Ext	3 × 3, 16-lead LFCSP
HMC457	1 W power amp	1.7 to 2.2	27	30.5	46	5	5	500	Ext	16-lead QSOP
HMC454	½ W power amp	0.4 to 2.5	12.5	27	42	6	5	150	Ext	SOT-89
HMC455	½ W power amp	1.7 to 2.5	13	27	42	6	5	150	Ext	3 × 3, 16-lead LFCSP

Power Amplifiers

Part Number	Description	Freq (GHz)	Gain (dB)	OP1dB (dBm)	OIP3 (dBm)	NF (dB)	V_S (V)	I_{SV} (mA)	Match	Package (mm)
HMC414	½ W power amp	2.2 to 2.8	20	27	39	7	5	300	Ext	3 × 5, 8-lead MS
HMC409	1 W power amp	3.3 to 3.8	31	30.5	45.5	5.8	5	615	Ext	4 × 4, 24-lead LFCSP
HMC327	½ W power amp	3 to 4	21	27	40	5	5	250	Ext	8-lead MSOP
HMC406	Medium power amp	5 to 6	18	26	38	6	5	300	Ext	3 × 5, 8-lead MS
HMC408	1 W power amp	5.1 to 5.9	20	30	43	6	5	750	Ext	3 × 3, 16-lead LFCSP
HMC415	Medium power amp	4.9 to 5.9	20	22	32	6	3	285	Ext	3 × 3, 16-lead LFCSP
HMC407	Medium power amp	5 to 7	15	25	40	5.5	5	230	Int	3 × 5, 8-lead MS
HMC7357	2 W power amp	5.5 to 8.5	29	34.5	41.5	—	8	1200	Int	5 × 5, 24-lead LFCSP
HMC1121 ***New***	4 W power amp/ power detector	5.5 to 8.5	28	36	44	—	7	2200	—	6 × 6, 40-lead LFCSP
HMC590	1 W power amp	6 to 10	25	31.5	41	—	7	820	Int	Die, 5 × 5, 32-lead LFCSP
HMC591	2 W power amp	6 to 10	23	33.5	43	—	7	1340	Int	Die, 5 × 5, 32-lead LFCSP
HMC487	2 W power amp	9 to 12	20	32	36	8	7	1300	Int	5 × 5, 32-lead LFCSP
HMC1082	Medium power amp/ power detector	5.5 to 18	22	24	35	—	5	220	Int	4 × 4, 24-lead LFCSP
HMC441	Medium power amp	6 to 18	17	20	32	4.5	5	95	Int	Die, ceramic SMT, hermetic SMT, 3 × 3, 16-lead LFCSP
HMC451	Medium power amp	5 to 20	22	20	30	6.5	5	127	Int	Die, 3 × 3, 16-lead LFCSP, 3 × 3, 16-lead LFCSP
HMC6981	2 W power amp	15 to 20	26	33.5	43.5	—	6	1100	Int	6 × 6, ceramic, 16-lead SMT
HMC-APH478	1 W power amp	18 to 20	17.5	30	38.5	—	5	900	Int	Die

Power Amplifiers

Part Number	Description	Freq (GHz)	Gain (dB)	OP1dB (dBm)	OIP3 (dBm)	NF (dB)	V_S (V)	I_{SY} (mA)	Match	Package (mm)
HMC498	Medium power amp	17 to 24	24	25	34	4	5	250	Int	Die, 4 × 4, 24-lead LFCSP
HMC-APH518	1 W power amp	21 to 24	17	30.5	39	—	5	950	Int	Die
HMC442	Medium power amp	17.5 to 25.5	15	22	28	5.5	5	85	Int	Die, 3 × 3, 12-lead LFCSP, 5 × 5, 8-lead LCC
HMC-APH608	1 W power amp	22.5 to 26.5	17	30	38	—	5	950	Int	Die
HMC-APH462	1 W power amp	15 to 27	17	29	37	—	5	1440	Int	Die
HMC863A ***New***	½ W power amp	24 to 29.5	27	26.5	39	—	6	375	Int	Die, 4 × 4, 24-lead LFCSP
HMC7441	2 W power amp	27.5 to 31	23	34	38	—	6	1000	Int	Die
HMC-APH460	½ W power amp	27 to 31.5	14	28	37	—	5	900	Int	Die
HMC499	Medium power amp	21 to 32	16	24	33	5	5	200	Int	Die, 4 × 4, 24-lead LFCSP
HMC1132 ***New***	1 W power amp	27 to 32	22	30	35	—	6	600	—	5 × 5, 32-lead LFCSP
HMC906A ***New***	2 W power amp/ power detector	27.3 to 33	24	32	41.5	—	6	1200	—	Die
HMC-APH596	Medium power amp	16 to 33	17	24	33	—	5	400	Int	Die
HMC-APH510	Medium power amp	37 to 40	20	26	35	—	5	640	Int	Die
HMC-APH473	1 W power amp	37 to 40	15	28	37	—	5	1080	Int	Die
HMC7229	1 W power amp/ power detector	37 to 40	24	31.5	40	—	6	1200	Int	6 × 6, ceramic, 16-lead SMT
HMC-ABH264	Medium power amp	34 to 42	18.5	18	29	6.5	5	120	Int	Die
HMC969	1 W power amp	40 to 43.5	22	29	38	—	6	900	Int	Die
HMC-APH403	Medium power amp	37 to 45	21	23	32	—	5	475	Int	Die
HMC-ABH209	Medium power amp	55 to 65	13	16	25	—	5	80	Int	Die
HMC-ABH241	Medium power amp	50 to 66	24	17	25	—	5	220	Int	Die

Power Amplifiers

Part Number	Description	Freq (GHz)	Gain (dB)	OP1dB (dBm)	OIP3 (dBm)	NF (dB)	V_S (V)	I_{SY} (mA)	Match	Package (mm)
HMC-AUH318	Medium power amp	71 to 76	24	17.5	—	—	4	130	Int	Die
HMC-APH633	Medium power amp	71 to 76	13	20	—	—	4	240	Int	Die
HMC-AUH320	Medium power amp	71 to 86	15	15	—	—	4	130	Int	Die
HMC-AUH317	Medium power amp	81 to 86	22	17.5	—	—	4	160	Int	Die
HMC-APH634	Medium power amp	81 to 86	12	19	—	—	4	240	Int	Die

GaN Power Amplifiers

Part Number	Description	Freq (GHz)	Gain (dB)	PSAT (dBm)	OIP3 (dBm)	PSAT Power Gain (dB)	NF	V_S (V)	I_{SY}	Package (mm)
HMC1099	10 W GaN power	0.01 to 1.1	18.5	40.5	40	18.5	—	28	100	5 × 5, 32-lead LFSCP
HMC1086	25 W GaN MMIC	2 to 6	22	44.5	48	14	—	28	1100	Die, flange mount
HMC1087	8 W GaN MMIC	2 to 20	11	39	45	5.5	—	28	850	Die, flange mount
HMC7149	10 W GaN power	6 to 18	20	39.5	39.5	10	—	28	680	Die

Variable Gain Amplifiers

Analog Controlled VGAs

Part Number	Description	BW (GHz)	Gain Range (dB)	OIP3 (dBm)	NF (dB)	Specs @ (GHz)	V_S (V)	I_{SY} (mA)	Package (mm)
AD8367	Single-ended IF VGA with AGC	0.5	–2.5 to +42.5	36.5	6.2	0.07	3 to 5	26	14-lead TSSOP
AD8368	Single-ended IF VGA with AGC	0.8	–12 to +22	33	9.5	0.14	5	60	4 × 4, 24-lead LFCSP
ADL5336	Dual (cascaded) diff VGA	1	–25.4 to +34.7	28	7.1	0.14	5	80	5 × 5, 32-lead LFCSP
ADL5331	Differential Tx VGA	1.2	—	47	9	0.1	5	240	4 × 4, 24-lead LFCSP
ADL5391	Analog multiplier	2	N/A	26.5	40	0.05	5	135	3 × 3, 16-lead LFCSP
ADL5246	Variable gain LNA/driver amp	0.6 to 3	–12 to +31.5	37	1.8	2.2	5/3.3	270/141	5 × 5, 32-lead LFCSP
ADL5330	Differential Tx VGA	3	–32 to +21	31.5	9	0.9	5	215	4 × 4, 24-lead LFCSP
HMC996	Analog variable gain amplifier	5 to 12	–3.5 to +18.5	34	2	16	5	120	4 × 4, 24-lead LFCSP
HMC694	Analog variable gain amplifier	6 to 17	1 to 24	30	5	10	5	170	Die, 4 × 4, 24-lead LFCSP
HMC997	Analog variable gain amplifier	17 to 27	5.5 to 20.5	30	3.5	21	5	170	4 × 4, 24-lead LFCSP
HMC6187	Analog variable gain amplifier	27 to 31.5	6 to 19	31	4.5	29	5	230	4 × 4, 24-lead LFCSP

Digitally Controlled VGAs

Part Number	Description	Freq (GHz)	Gain Range (dB)	Step (dB)	OIP3 (dBm)	NF (dB)	Specs @ (GHz)	V_S (V)	I_{SY} (mA)	Package (mm)
AD8372	Dual diff DGA	0.13	–9 to +32	1	35	7.9	0.065	5	2 × 106	5 × 5, 32-lead LFCSP
HMC960	6.3-bit DGA serial/ parallel control	DC to 0.1	0 to 40	0.5	30	6	0.02	5	70	4 × 4, 24-lead LFCSP
HMC680	5-bit diff DGA	0.03 to 0.4	–4 to +19	1	40	5	0.3	5	250	4 × 4, 24-lead LFCSP
AD8366	Dual BB DGA	0.6	4.5 to 20.25	0.25	38 dBV	11.4	0.01	5	2 × 90	5 × 5, 32-lead LFCSP
AD8369	Diff DGA	0.6	–5 to +40	3	19.5	7	0.07	3 to 5	37	16-lead TSSOP
AD8375	Diff DGA	0.63	–4 to +20	1	50	8.3	0.2	5	125	4 × 4, 24-lead LFCSP
AD8376	Dual diff DGA	0.7	–4 to +20	1	50	8.7	0.2	5	2 × 125	5 × 5, 32-lead LFCSP
ADL5201	Diff DGA parallel/ serial control	0.7	–11.5 to +20	0.5	50	7.5	0.2	5	110	4 × 4, 24-lead LFCSP
ADL5202	Dual diff DGA parallel/serial control	0.7	–11.5 to +20	0.5	50	7.5	0.2	5	2 × 110	6 × 6, 40-lead LFCSP
AD8370	Diff DGA	0.75	–8 to +34	Variable	35	7.2	0.07	3 to 5	79	16-lead TSSOP
HMC628	5-bit DGA	0.05 to 0.8	–8 to +15	1	35	5	0.25	5	65	4 × 4, 24-lead LFCSP
HMC681A	6-bit DGA serial control	DC to 1	13.5 to 45	0.5	36	2.7	0.35	5	176	5 × 5, 32-lead LFCSP
ADL5240	Gain block/DGA parallel/serial control	4	–13.1 to +18	0.5	37.5	4.9	2.14	5	93	5 × 5, 32-lead LFCSP
ADL5243	Gain block/DGA/ driver amp parallel/ serial control	4	–1.2 to +31.3	0.5	40	3.1	2.14	5	175.5	5 × 5, 32-lead LFCSP
HMC742A	6-bit DGA serial/ parallel control	0.5 to 4.0	–19.5 to +12	0.5	39	4	1	5	150	5 × 5, 32-lead LFCSP

Baseband Programmable VGA Filters

Part Number	Description	BW (MHz)	Gain Range (dB)	OIP3 (dBm)	NF (dB)	Specs @ (MHz)	V_S (V)	I_{SY} (mA)	Package (mm)
AD8366	Dual, baseband DGA	600	4.5 to 20.25	38 dBV	11.4	10	5	180	5 × 5, 32-lead LFCSP
HMC900	Dual, baseband, programmable low-pass filter	3.5 to 50	0/10	30	12	20	5	130	5 × 5, 32-lead LFCSP
ADRF6518	Dual, diff VGA with variable low-pass filter	1 to 1100	–36 to +66	36 dBV	–105 dBV/Hz	30	3.3	360	5 × 5, 32-lead LFCSP
HMC1023	Dual, baseband, programmable low-pass filter	5 to 72	0/10	30	10	20	5	240	5 × 5, 32-lead LFCSP
ADRF6516	Dual, diff VGA with variable low-pass filter	1 to 31	–5 to +45	40 dBV	–130 dBV/Hz	15	3.3	360	5 × 5, 32-lead LFCSP
ADRF6510	Dual, diff VGA with variable low-pass filter	1 to 31	–5 to +45	27 dBV	–130 dBV/Hz	15	5	258	5 × 5, 32-lead LFCSP

Attenuators

Digital Step Attenuators

Part Number	Description	Freq (GHz)	Atten Range (dB)	Step (dB)	IIP3 (dBm)	P0.1dB (dBm)	Specs @ (GHz)	Control (V)	Package (mm)
HMC759	7-bit serial DSA	0.01 to 0.3	3.3 to 35	0.25	40	—	0.15	TTL/CMOS	3 × 3, 16-lead LFCSP
HMC1095	6-bit, 75 Ω DSA	DC to 3	1.3 to 32.8	0.5	57	30	1.2	0/5	4 × 4, 24-lead LFCSP
HMC472A	6-bit DSA	DC to 3.8	1.4 to 32.9	0.5	54	30	1.5	TTL/CMOS	4 × 4, 24-lead LFCSP
HMC306A	5-bit DSA	0.7 to 3.8	1.3 to 16.8	0.5	52	25	1.4	3 to 5	10-lead MSOP
HMC539A ***New***	5-bit DSA	DC to 4	0.7 to 8.45	0.25	50	28	1.5	TTL/CMOS	3 × 3, 16-lead LFCSP
HMC542B	6-bit serial DSA	DC to 4	1.4 to 32.9	0.5	50	30	1.5	Serial/CMOS	4 × 4, 24-lead LFCSP
HMC1119	7-bit serial/parallel DSA	0.1 to 4	1.6 to 31.75	0.25	55	27	3	Serial/CMOS	4 × 4, 24-lead LFCSP
HMC291S	2-bit DSA	0.7 to 4.0	0.7 to 12.7	4	54	26	1	3 to 5	SOT-26
HMC792A	6-bit serial DSA	DC to 6	1.8 to 17.5	0.25	53	31	3	TTL/CMOS	4 × 4, 24-lead LFCSP
HMC624A	6-bit serial/parallel DSA	DC to 6	1.5 to 33	0.5	55	30	3	0/5	4 × 4, 24-lead LFCSP
HMC468A	3-bit DSA	DC to 6	0.7 to 7.7	1	55	26	4.5	TTL/CMOS	3 × 3, 16-lead LFCSP
HMC802A ***New***	1-bit DSA	DC to 10	1.5 to 20	20	55	30	4	3 to 5	3 × 3, 16-lead LFCSP
HMC424A	6-bit DSA	DC to 13	2.8 to 34.3	0.5	42	23	4	0/–5	3 × 3, 16-lead LFCSP
HMC540S ***New***	4-bit parallel DSA	0.1 to 1	0.7 to 15.7	1	54	31	3	TTL/CMOS	3 × 3, 16-lead LFCSP
HMC350S ***New***	5-bit, glitch free DSA	0.4 to 7.0	1.2 to 16.7	0.5	61	28	3	TTL/CMOS	4 × 4, 24-lead LFCSP
HMC393A	5-bit DSA	0.1 to 33	1 to 31	1	43	26	20	3 to 5	4 × 4, 24-lead LFCSP

Voltage Variable Attenuators

Part Number	Description	Freq (GHz)	Atten Range (dB)	P1dB (dBm)	IIP3 (dBm)	CNTL (V_{DC})	Specs @ (GHz)	Package (mm)
HMC-VVD102	Analog VVA	17 to 27	1.5 to 19.5	—	17	–4 V to +4 V	25	Die
HMC-VVD106	Analog VVA	36 to 50	1.5 to 23.5	—	17	0 to +4	42	Die
HMC-VVD104	Analog VVA	70 to 86	2 to 16	—	—	–5 V to +5 V	74	Die

Fixed Attenuators

Part Number	Description	Frequency Range (GHz)	Nominal Attenuation @ 10 (dB)	Attenuation Accuracy	Max Input Power (dBm)	Die Size	Package (mm)
HMC650	Through line	DC to 50	0.15	±0.2	—	17 × 18	Die
HMC651	Through line	DC to 50	0.15	±0.2	—	23 × 18	Die
HMC652	Fixed attenuator	DC to 50	2	±0.2	27	17 × 18	Die, 2 × 2, 6-lead LFCSP
HMC653	Fixed attenuator	DC to 50	3	±0.2	26	17 × 18	Die, 2 × 2, 6-lead LFCSP
HMC654	Fixed attenuator	DC to 50	4	±0.2	25	17 × 18	Die, 2 × 2, 6-lead LFCSP
HMC655	Fixed attenuator	DC to 50	6	±0.2	26	17 × 18	Die, 2 × 2, 6-lead LFCSP
HMC656	Fixed attenuator	DC to 50	10	±0.1	25	17 × 18	Die, 2 × 2, 6-lead LFCSP
HMC657	Fixed attenuator	DC to 50	15	±0.4	25	17 × 18	Die, 2 × 2, 6-lead LFCSP
HMC658	Fixed attenuator	DC to 50	20	±0.5	25	23 × 18	Die, 2 × 2, 6-lead LFCSP

RF Mixers

Single, Double, and Triple Balanced Mixers

Part Number	Description	RF Freq (GHz)	IF Freq (GHz)	LO Freq	Conversion Gain (dB)	IIP3 (dBm)	NF (dB)	LO (dBm)	Specs @ (GHz)	I_{SY} (mA)	V_S (V)	Package (mm)
AD8343	Active mixer	DC to 2.5	DC to 2.5	DC to 2.5	7	16.5	14	0	1.9	50	5	14-lead TSSOP
AD8342	Active mixer	LF to 3	LF to 2.4	LF to 3	3.7	22.2	12.2	0	0.238	97	5	16-lead LFCSP
ADL5801	Active mixer	0.01 to 6	LF to 0.6	0.01 to 6	1.8	28.5	9.75	0	0.9	95/130	5	24-lead LFCSP
ADL5802	Dual active mixer	0.1 to 6	LF to 600	0.1 to 6	1.5	26	10	0	0.9	150 to 220	5	24-lead LFCSP
ADL5350	Single-ended passive mixer	VHF to 4	VHF to 4	VHF to 4	–6.7	25	6.4	0	0.85	19	3.3	8-lead LFCSP
ADL5357	Passive mixer and IF amp	0.5 to 1.7	0.3 to 0.45	0.73 to 1.67	8.6	26.6	9.1	0	0.9	150/190	3.3/5	20-lead LFCSP
ADL5367	Passive mixer	0.5 to 1.7	DC to 0.45	0.73 to 1.67	–7.7	34	8.3	0	0.9	56/97	3.3/5	20-lead LFCSP
ADL5358	Dual passive mixer and IF amp (Rx only)	0.5 to 1.7	30 to 450	0.53 to 1.67	8.3	25.2	9.9	0	0.9	300/350	3.3/5	36-lead LFCSP
HMC683	High IP3 dual (Rx Only) downconverter	0.7 to 1	0.06 to 0.4	0.57 to 0.9	7.5	23	11	0	0.8	420	5	6 × 6, 40-lead LFCSP
ADRF6658	Dual active mixer and DVGA (Rx only)	0.69 to 3.8	55 to 500	0.69 to 4	27	29	12	0	1.9	85/440	3.3	48-lead LFCSP
ADL5811	Wideband passive mixer	0.7 to 2.8	0.30 to 0.45	0.25 to 2.8	7.5	27.5	10.7	0	1.9	120/185	3.6/5	32-lead LFCSP
ADL5812	Dual passive mixer (Rx only)	0.7 to 2.8	30 to 450	0.25 to 2.8	6.7	27.2	11.6	0	1.9	260/412	3.6/5	40-lead LFCSP
ADL5365	Passive mixer	1.2 to 2.5	DC to 0.45	1.23 to 2.47	–7.3	36	8.3	0	1.9	56/95	3.3/5	20-lead LFCSP
ADL5355	Passive mixer and IF amp	1.2 to 2.5	0.3 to 0.45	1.23 to 2.47	8.4	27	9.2	0	1.95	150/190	3.3/5	20-lead LFCSP

Single, Double, and Triple Balanced Mixers

Part Number	Description	RF Freq (GHz)	IF Freq (GHz)	LO Freq	Conversion Gain (dB)	IIP3 (dBm)	NF (dB)	LO (dBm)	Specs @ (GHz)	I_{SY} (mA)	V_S (V)	Package (mm)
ADL5356	Dual passive mixer and IF amp (Rx only)	1.2 to 2.5	30 to 450	1.23 to 2.47	8.2	31	9.9	0	1.9	300/350	3.3/5	36-lead LFCSP
ADL5353	Passive mixer and IF amp	2.2 to 2.7	0.30 to 0.45	2.23 to 3.15	8.7	24.5	9.8	0	2.535	150/190	3.3/5	20-lead LFCSP
ADL5354	Dual passive mixer and IF amp (Rx only)	2.2 to 2.7	30 to 450	1.75 to 2.76	8.6	26.1	10.6	0	2.6	300/350	3.3/5	36-lead LFCSP
ADL5363	Passive mixer	2.3 to 2.9	DC to 0.45	2.33 to 3.35	–7.7	31	7.6	0	2.535	60/100	3.3/5	20-lead LFCSP
HMC682	High IP3 dual downconverter (Rx only)	1.7 to 2.2	0.06 to 0.4	1.4 to 2.0	6	25	12	0	2	450	5	6 × 6, 40-lead LFCSP
HMC684	Double bal with LO amp	0.7 to 1.0	DC to 0.45	0.6 to 1.0	–7	32	7	0	0.1	85	5	4 × 4, 24-lead LFCSP
HMC686	Double bal with LO amp	0.7 to 1.5	DC to 0.5	0.85 to 1.5	–7.5	34	7.5	0	0.15	105/120	5	4 × 4, 24-lead LFCSP
HMC685	Double bal with LO amp	1.7 to 2.2	DC to 0.5	1.5 to 2.2	–8	35	8	0	0.2	120/ 90/70	5	4 × 4, 24-lead LFCSP
HMC687	Double bal with LO amp	1.7 to 2.2	DC to 0.5	1.7 to 2.4	–8	35	8	0	0.2	120/ 100/70	5	4 × 4, 24-lead LFCSP
HMC688	Double bal with LO amp	2.0 to 2.7	DC to 0.7	1.7 to 2.4	–8	34	7.5	0	0.3	140	5	4 × 4, 24-lead LFCSP
HMC689	Double bal with LO amp	2.0 to 2.7	DC to 0.8	2.0 to 3.0	–7.5	32	7.5	0	0.3	152	5	4 × 4, 24-lead LFCSP
HMC666	Double bal with LO amp	3.1 to 3.9	DC to 0.6	2.8 to 3.6	–9	31	9	0	0.3	162	5	4 × 4, 24-lead LFCSP
HMC557A ***New***	Double bal (wideband)	2.5 to 7	DC to 3	2.5 to 7	–7	22	7	15	0.1	—	—	Die, 4 × 4, 24-lead LFCSP
HMC218B ***New***	Double bal	3.5 to 8	DC to 1.6	3.5 to 8	–7	17	8	13	0.1	—	—	8-lead MSOP
HMC773A ***New***	Double bal (wideband)	6 to 26	DC to 10 dc to 8	6 to 26	–9	22	9	13	0.5	—	—	Die, 3 × 3, 12-lead LFCSP

Single, Double, and Triple Balanced Mixers

Part Number	Description	RF Freq (GHz)	IF Freq (GHz)	LO Freq	Conversion Gain (dB)	IIP3 (dBm)	NF (dB)	LO (dBm)	Specs @ (GHz)	I_{SY} (mA)	V_S (V)	Package (mm)
HMC412B ***New***	Double bal	9 to 15	DC to 2.5	9 to 15	–9	19	8	13	1.45	—	—	8-lead MSOP
HMC1106 ***New***	Double bal (wideband)	15 to 36	DC to 24	20 to 50	–9	16	9	15	36.1	—	—	Die
HMC1081 ***New***	Double bal (wideband)	50 to 75	DC to 26	40 to 85	–7.5	16	7.5	12	50	—	—	Die
HMC-MDB169	Double bal	54 to 64	DC to 5	54 to 64	–8	13	8	13	2	—	—	Die
HMC-MDB277	Double bal	70 to 90	DC to 18	70 to 90	–12	—	—	14	10	—	—	Die

I/Q Mixer and Image Reject Mixers

Part Number	Description	Freq (MHz)	IF Freq (GHz)	Conv Gain (dB)	Image Rejection (dB)	IIP3 (dB)	LO/RF Isolation (dB)	LO/IF Isolation (dB)	LO Power (dBm)	Specs @ (MHz)	Package (mm)
HMC520A	I/Q mixer/IRM	6 to 10	DC to 3.5	–7	30	22	47	21	15	0.1	4 × 4, 24-lead LFCSP
HMC8191 ***New***	I/Q mixer/IRM (wideband)	6 to 26.5	DC to 5	–9	25	20	42	41	18	—	4 × 4, 24-lead LFCSP
HMC1056	I/Q mixer/IRM	8 to 12	DC to 4	–8	16	18	40	37	10	0.1	4 × 4, 20-lead LFCSP
HMC8192 ***New***	I/Q mixer/IRM (wideband)	15 to 45	DC to 5	–8.5	25	22	45	40	18	—	4 × 4, 24-lead LFCSP
HMC-MDB172	I/Q mixer/IRM	19 to 33	DC to 5	–8	25	17	35	23	16	3	Die
HMC524A ***New***	I/Q mixer/IRM	22 to 32	DC to 3.5	–10.5	23	20	40	18	17	0.1	Die, 3 × 3, 12-lead LFCSP
HMC1063	I/Q mixer/IRM	24 to 28	DC to 3	–9.5	21	17	38	40	10	1	3 × 3, 16-lead LFCSP
HMC-MDB171 ***New***	I/Q mixer/IRM	35 to 45	DC to 5	–12.5	25	17	35	25	16	3	Die
HMC-MDB218	I/Q mixer/IRM	54 to 64	DC to 3	–12.5	30	7	30	30	10	1	Die

Subharmonic Mixers

Part Number	Description	RF Freq (GHz)	IF Freq (GHz)	LO Freq (GHz)	Conv Gain (dB)	IIP3 (dBm)	NF (dB)	Typical LO Power (dBm)	Specs @ GHz	I_{SY} (mA)	V_S (V)	Package (mm)
HMC337	Subharmonic with LO amp	17 to 25	DC to 3	8.5 to 12.5	–9	10	9	–5	1	25 28	3 4	Die
HMC264	Subharmonic with LO amp	20 to 32	DC to 6	10 to 16	–10	13	10	–4	1	25 28	3 4	Die, 3 × 3, 12-lead SM3
HMC265	Subharmonic with LO and IF amp (Rx Only)	20 to 32	0.7 to 3.0	10 to 16	3	10	13	–4	1	50	4	Die, 5 × 5, 6-lead SM3
HMC338	Subharmonic with LO amp	26 to 33	DC to 2.5	13 to 16.5	–9	11	9	–5	1	25 28	3 4	Die, 3 × 3, 12-lead LFCSP
HMC404	I/Q mixer/IRM	26 to 33	DC to 3	13 to 16.5	–11	16	11	2	1	28	4	Die
HMC339	Subharmonic with LO amp	33 to 42	DC to 3	16.5 to 21	–10	10	10	2	1	28	4	Die
HMC1093 ***New***	Subharmonic with LO amp	37 to 46.5	DC to 7.5	8.5 to 11	–11	26	11	–1	7.5	160	3	Die
HMC1057 ***New***	Subharmonic, I/Q mixer	71 to 86	DC to 12	29 to 43	–12	13	12	13	4	—	—	Die
HMC1058 ***New***	Subharmonic	71 to 86	DC to 12	29 to 43	–11	6	11	9	4	—	—	Die

I/Q Downconverters/Receivers

Part Number	Description	RF Freq (GHz)	IF Freq (GHz)	Conversion Gain (dB)	NF (dB)	Image Rejection (dBc)	IIP3 (dBm)	V_S (V)	I_{SY} (mA)	Package (mm)
HMC951A ***New***	I/Q downconverter/receiver	5.5 to 8.6	DC to 3	13	2	25	3	5	55, 175	4 × 4, 24-lead LFCSP
HMC1113 ***New***	I/Q downconverter/receiver	10 to 16	DC to 3.5	12	1.8	23	1	3, 4	60, 100	5 × 5, 32-lead LFCSP
HMC966	I/Q downconverter/receiver	17 to 20	DC to 3.5	14	2.5	40	0	3.5	160	4 × 4, 24-lead LFCSP
HMC570	I/Q downconverter/receiver	17 to 21	DC to 3.5	10	3	19	0.5	3.5	125	Die, 5 × 5, 32-lead LFCSP

I/Q Downconverters/Receivers

Part Number	Description	RF Freq (GHz)	IF Freq (GHz)	Conversion Gain (dB)	NF (dB)	Image Rejection (dBc)	IIP3 (dBm)	V_S (V)	I_{SY} (mA)	Package (mm)
HMC904	I/Q downconverter/receiver	17 to 24	DC to 3.5	12	3	33	0	3.5	160	5 × 5, 32-lead LFCSP
HMC967	I/Q downconverter/receiver	21 to 24	DC to 3.5	15	2.5	25	1	3.5	170	4 × 4, 24-lead LFCSP
HMC977	I/Q downconverter/receiver	20 to 28	DC to 3.5	14	2.5	21	2	4.5	170	4 × 4, 24-lead LFCSP
HMC571	I/Q downconverter/receiver	21 to 25	DC to 3.5	11	3	24	5	3.5	125	Die, 5 × 5, 32-lead LFCSP
HMC572	I/Q downconverter/receiver	24 to 28	DC to 3.5	9	3.5	20	7	3.5	125	Die, 5 × 5 32-lead LFCSP
HMC1065 ***New***	I/Q downconverter/receiver	27 to 34	DC to 4	12	3	17	–2	3	90 150	4 × 4, 24-lead LFCSP
HMC6789B ***New***	I/Q downconverter/receiver	37 to 44	DC to 4	14	3.5	25	–1	3	75 150	5 × 5, 16-lead LFCSP
HMC6147A ***New***	I/Q downconverter/receiver	37 to 44	DC to 4	13	3.5	25	2	3	75 150	5 × 5, 16-lead LFCSP

I/Q Upconverters/Transmitters

Part Number	Description	RF Freq (GHz)	IF Freq (GHz)	Conversion Gain (dB)	Sideband Rejection (dBc)	OIP3 (dBm)	Output P1dB (dBm)	V_S (V)	I_{SY} (mA)	Package (mm)
HMC6505A ***New***	I/Q upconverter/ transmitter with VGA	5.5 to 8.6	DC to 3	15	22	35	22	5	125, 120	5 × 5, 32-lead LFCSP
HMC9059 ***New***	I/Q upconverter/ transmitter with VGA	9.5 to 13.5	DC to 3.5	13	18	32	—	3.3, 5	120, 250	5 × 5, 32-lead LFCSP
HMC9060 ***New***	I/Q upconverter/ transmitter	12.5 to 16.5	DC to 3.5	14	25	32	—	2.4, 5	110, 240	5 × 5, 32-lead LFCSP
HMC7911 ***New***	I/Q upconverter/ transmitter	17.7 to 19.7	DC to 3.5	14	25	31	—	5	120, 225	5 × 5, 32-lead LFCSP
HMC7912 ***New***	I/Q upconverter/ transmitter	21 to 24	DC to 3.5	14	25	31	—	5	120, 225	5 × 5, 32-lead LFCSP

I/Q Upconverters/Transmitters

Part Number	Description	RF Freq (GHz)	IF Freq (GHz)	Conversion Gain (dB)	Sideband Rejection (dBc)	OIP3 (dBm)	Output P1dB (dBm)	V_S (V)	I_{SY} (mA)	Package (mm)
HMC815B	I/Q upconverter/ transmitter	21 to 27	DC to 3.75	12	20	27	20	4.5	95, 270	5 × 5, 32-lead LFCSP
HMC6787A ***New***	I/Q upconverter/ transmitter	37 to 40	DC to 4	10	17	26	14	3	150, 200	5 × 5, 16-lead LFCSP
HMC6146B ***New***	I/Q upconverter/ transmitter	40 to 44	DC to 4	11	21	28	16	3	150, 200	5 × 5, 16-lead LFCSP

Mixers with Integrated LO

Part Number	Description	RF Freq (GHz)	IF Freq (MHz)	LO Freq (GHz)	Power Gain (dB)	PLL Phase Noise @ 10 kHz Offset (dBc/Hz)	VCO Phase Noise @ 1 MHz Offset (dBc/Hz)	IIP3 (dBm)	NF (dB)	Nom LO Power (dBm)	Specs @ (GHz)	I_{SY} (mA)	V_S (V)	Package (mm)
ADRF6655	Active mixer with PLL and VCO	0.1 to 2.5	LF to 2200	1.05 to 2.3	6	–83 @ 1840 MHz	–136 @ 1840 MHz	29	12	0	0.9	260 to 285	5	40-lead LFCSP
ADRF6601	Active mixer with PLL and VCO	0.3 to 2.5	DC to 500	0.75 to 1.16	6.7	–99 @ 750 MHz	–135 @ 750 MHz	30.9	13.5	0	0.91	253 to 281	5	40-lead LFCSP
ADRF6620	Active mixer and IF amp and PLL and VCO	0.7 to 2.7	LF to 450	0.35 to 2.85	11	–101 @ 5.5 GHz	–128 @ 5.5 GHz	32	18.5	0	1.9	340	5	48-lead LFCSP
ADRF6612	Dual active mixer and tunable balun and PLL and VCO (Rx only)	0.7 to 3	40 to 500	0.2 to 2.7	9.3	–80 @ 5 GHz	–137.7 @ 5 GHz	28	11.3	0	1.9	253/ 258	5/3.6	48-lead LFCSP
ADRF6602	Active mixer with PLL and VCO	1 to 3.1	DC to 500	1.55 to 2.15	6.5	–92 @ 2150 MHz	–128 @ 2150 MHz	29.5	12	0	1.9	235 to 263	5	40-lead LFCSP
ADRF6603	Active mixer with PLL and VCO	1.1 to 3.2	DC to 500	2.1 to 2.6	6.7	–88 @ 2600 MHz	–128 @ 2600 MHz	29.3	15.6	0	2.1	235 to 261	5	40-lead LFCSP
ADRF6604	Active mixer with PLL and VCO	1.2 to 3.6	DC to 500	2.5 to 2.9	6.8	–87 @ 2900 MHz	–126 @ 2900 MHz	27	15.5	0	2.7	135 to 276	5	40-lead LFCSP

I/Q Modulators and Demodulators

I/Q Modulators

Part Number	Freq (GHz)	Description	LO Supr (dBm)	Sideband Supr (dBc)	Noise (dBm/Hz)	OP1dB (dBm)	OIP3 (dBm)	BB BW (3 dB) (MHz)	Specs @ (GHz)	V_S (V)	I_{SY} (mA)	Package (mm)
ADL5385	0.03 to 2.2	2× LO broadband I/Q mod	–46	–50	–159	11	26	500	0.35	5	215	4 × 4, 24-lead LFCSP
ADL5386	0.05 to 2.2	2× LO I/Q mod and VVA and AGC	–38	–46	–160	11.1	25	700	0.35	5	230	6 × 6, 40-lead LFCSP
HMC1097	0.1 to 6	Direct quadrature	–40	–40	–162	11	29	700	0.9	5	170	4 × 4, 24-lead LFCSP
AD8345	0.14 to 1	Low power I/Q mod	–42	–42	–155	2.5	25	80	0.8	3 to 5	58/62	16-lead TSSOP
ADL5370	0.3 to 1	Narrow-band I/Q mod	–50	–41	–160	11	24	500	0.45	5	205	4 × 4, 24-lead LFCSP
ADL5375	0.4 to 6	Broadband I/Q mod	–46.2	–52.1	–160	9.4	26.8	750	0.9	5	200	4 × 4, 24-lead LFCSP
ADL5371	0.5 to 1.5	Narrow-band I/Q mod	–50	–55	–158.6	14.4	27	500	0.9	5	175	4 × 4, 24-lead LFCSP
AD8349	0.7 to 2.7	Low power I/Q mod	–45	–35	–155	7.6	21	160	0.9	5	135	16-lead TSSOP
AD8346	0.8 to 2.5	Low power I/Q mod	–42	–36	–147	–3	20	70	1.9	3 to 5	43/45	16-lead TSSOP
ADL5372	1.5 to 2.5	Narrow-band I/Q mod	–45	–45	–158	14.2	27	500	1.9	5	165	4 × 4, 24-lead LFCSP
ADL5373	2.3 to 3	Narrow-band I/Q mod	–32	–57	–157.1	13.8	26	500	2.5	5	174	4 × 4, 24-lead LFCSP
ADL5374	3 to 4	Narrow-band I/Q mod	–32.8	–50	–159.6	12	22.8	500	3.5	5	173	4 × 4, 24-lead LFCSP

I/Q Modulators with Integrated LO

Part Number	Freq (GHz)	Description	PLL Phase Noise @ 10 kHz Offset (dBc/Hz)	VCO Phase Noise @ 1 MHz Offset (dBc/Hz)	LO Supr (dBm)	Sideband Supr (dBc)	Noise (dBm/Hz)	OP1dB (dBm)	OIP3 (dBm)	BB BW (3 dB) (MHz)	Specs @ (GHz)	V_S (V)	I_{SY} (mA)	Package (mm)
HMC1197	0.1 to 4	Wideband modulator and PLL and VCO	–110 @ 4 GHz	–134.5 @ 4 GHz	–40	–45	–160	11	30	600	0.9	5 3.3	320 48	7 × 7, 48-lead LFCSP
ADRF6755	0.3 to 2.31	I/Q mod and DSA and PLL and VCO	–93 @ 1200 MHz	–133 @ 1200 MHz	–45	–45	–162	8	21	600	2.31	5	350	8 × 8, 56-lead LFCSP
ADRF6701	0.4 to 1.25	I/Q mod and PLL and VCO	–113 @ 1100 MHz	–135 @ 1100 MHz	–45	–40	–159.7	11.2	31.7	750	0.95	5	240	6 × 6, 40-lead LFCSP
ADRF6720	0.7 to 3	Broadband I/Q mod and frac-N PLL and VCO	–91.5 @ 2600 MHz	–136.8 @ 2600 MHz	–40	–38	–157	12.7	35.7	1000	2.1	3.3	420	6 × 6, 40-lead LFCSP
ADRF6720-27	0.4 to 3	Broadband I/Q mod and frac-N PLL and VCO	–92.4 @ 2600 MHz	–136.8 @ 2600 MHz	–44	–40.8	–159.5	10.8	31.1	1000	2.1	3.3	425	6 × 6, 40-lead LFCSP
ADRF6750	0.95 to 1.575	I/Q mod and DSA and PLL and VCO	–93 @ 1200 MHz	–133 @ 1575 MHz	–45	–45	–162	8.5	23	600	1.575	5	310	8 × 8, 56-lead LFCSP
ADRF6702	1.2 to 2.4	I/Q mod and PLL and VCO	–110.8 @ 1850 kHz	–124.6 @ 1850 MHz	–40	–53.9	–159.6	13.6	30.1	750	1.96	5	240	6 × 6, 40-lead LFCSP
ADRF6703	1.55 to 2.65	I/Q mod and PLL and VCO	–98.8 @ 2600 MHz	–129.2 @ 2600 MHz	–40	–44	–159.7	13.5	32.7	750	2.3	5	240	6 × 6, 40-lead LFCSP
ADRF6704	2.05 to 3	I/Q mod and PLL and VCO	–92.3 @ 2900 MHz	–125.2 @ 2900 MHz	–41	–37.7	–158.3	12.1	27.2	750	2.7	5	226	6 × 6, 40-lead LFCSP

I/Q Demodulators

Part Number	Freq (GHz)	Description	BB BW (3 dB) (MHz)	Gain/Phase Error (dB/°)	IP1dB (dBm)	IIP3 (dB)	NF (dB)	Specs @ (MHz)	V_S (V)	I_{SY} (mA)	Package (mm)
AD8348	0.05 to 1	Broadband, 2× LO, I/Q demod and VGA	125	0.25/0.5	13	28	10.75	380	3 to 5	47/51	28-lead TSSOP
ADL5387	0.05 to 2	Broadband, 2× LO, I/Q demod	240	0.05/0.2	13	31	12	140	5	180	24-lead LFCSP
ADL5380	0.4 to 6	Broadband I/Q demod	390	0.07/0.2	11.6	27.8	11.7	1900	5	245	24-lead LFCSP
ADL5382	0.7 to 2.7	Broadband I/Q demod	370	0.05/0.2	14.4	30.5	15.6	1900	5	220	24-lead LFCSP
AD8347	0.8 to 2.7	I/Q demod and VGA	65	0.3/1	–2	11.5	11	1900	3 to 5	64/68	28-lead TSSOP

I/Q Demodulators with Integrated LO

Part Number	Freq (GHz)	Description	BB BW (3 dB) (MHz)	PLL Phase Noise @ 10 kHz Offset (dBc/Hz)	VCO Phase Noise @ 1 MHz Offset (dBc/Hz)	Gain/ Phase Error (dB/°)	IP1dB (dBm)	IIP3 (dB)	NF (dB)	Specs @ (MHz)	V_S (V)	I_{SY} (mA)	Package (mm)
ADRF6806	0.05 to 0.525	I/Q demod and frac-N PLL and VCO	170	—	—	0.1/0.5	12.2	28.5	12.2	140	3 to 5	86/270	40-lead LFCSP
ADRF6850	0.1 to 1	I/Q demod and frac-N PLL and VCO and 60 dB DSA	300	–98 @ 1 GHz	–136 @ 1 GHz	0.1/0.5	12	22.5	11	1000	3	350	56-lead LFCSP
ADRF6820	0.695 to 2.7	Broadband I/Q demod and frac-N PLL and VCO	1400	–94.7 @ 1800 MHz	–141.5 @ 1800 MHz	0.1/0.5	14.5	37	20	1900	3.3 to 5	83/310	40-lead LFCSP
ADRF6807	0.7 to 1.05	I/Q demod and frac-N PLL and VCO	170	–107 @ 900 MHz	–137 @ 900 MHz	0.1/0.5	12.8	26.7	13.1	900	3 to 5	86/227	40-lead LFCSP
ADRF6801	0.75 to 1.15	I/Q demod and frac-N PLL and VCO	275	–88.3 @ 900 MHz	–138.6 @ 900 MHz	0.05/0.3	12.5	25	14.3	900	5	262	40-lead LFCSP

I/Q Demodulators with Integrated LO

Part Number	Freq (GHz)	Description	BB BW (3 dB) (MHz)	PLL Phase Noise @ 10 kHz Offset (dBc/Hz)	VCO Phase Noise @ 1 MHz Offset (dBc/Hz)	Gain/ Phase Error (dB/°)	IP1dB (dBm)	IIP3 (dB)	NF (dB)	Specs @ (MHz)	V_S (V)	I_{SY} (mA)	Package (mm)
ADRF6806	0.05 to 0.525	I/Q demod and frac-N PLL and VCO	170	—	—	0.1/0.5	12.2	28.5	12.2	140	3 to 5	86/270	40-lead LFCSP
ADRF6850	0.1 to 1	I/Q demod and frac-N PLL and VCO and 60 dB DSA	300	–98 @ 1 GHz	–136 @ 1 GHz	0.1/0.5	12	22.5	11	1000	3	350	56-lead LFCSP
ADRF6820	0.695 to 2.7	Broadband I/Q demod and frac-N PLL and VCO	1400	–94.7 @ 1800 MHz	–141.5 @ 1800 MHz	0.1/0.5	14.5	37	20	1900	3.3 to 5	83/310	40-lead LFCSP
ADRF6807	0.7 to 1.05	I/Q demod and frac-N PLL and VCO	170	–107 @ 900 MHz	–137 @ 900 MHz	0.1/0.5	12.8	26.7	13.1	900	3 to 5	86/227	40-lead LFCSP
ADRF6801	0.75 to 1.15	I/Q demod and frac-N PLL and VCO	275	–88.3 @ 900 MHz	–138.6 @ 900 MHz	0.05/0.3	12.5	25	14.3	900	5	262	40-lead LFCSP

Integrated Transceivers, Transmitters, and Receivers

Microwave and Millimeter Wave Transmitters/Receivers

Transmitter/Receiver Millimeter Wave ICs

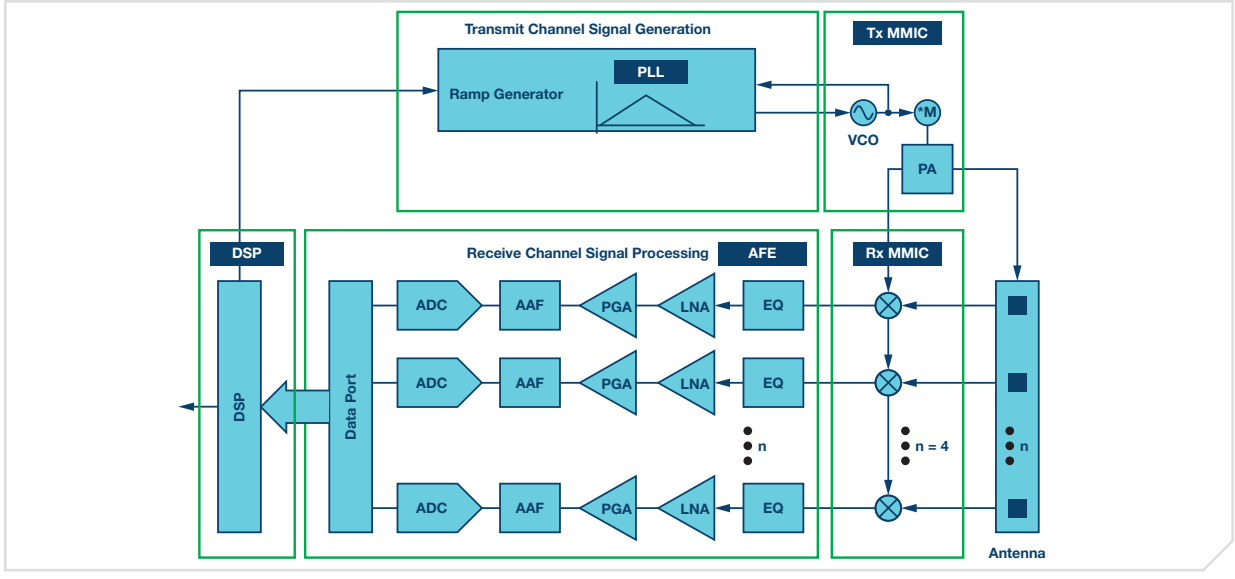
Part Number	Function	RF Freq (GHz)	P1dB (dBm)	Noise Figure (dB)	Gain Range (dB)	Max Gain (dB)	Phase Noise @ 1 MHz Offset (dBc/Hz)	Modulation bandwidth (GHz)	Synthesizer Step (MHz)	Power Dissipation (W)	Package (mm)
HMC6000	60 GHz integrated transmitter	57 to 64	12	—	17	38	–86	1.8	500/540	0.8	Die
HMC6001	60 GHz integrated receiver	57 to 64	—	6	65	67	–86	1.8	500/540	0.61	Die

Transmitter/Receiver Millimeter Wave ICs (with Antenna-in-Package)

Part Number	Description	RF Freq (GHz)	P1dB (dBm)	NF (dBm)	Gain Range (dB)	Max Gain (dB)	Phase Noise @ 1 MHz Offset (dBc/Hz)	Modulation bandwidth (GHz)	Antenna Gain (dBi)	Synthesizer Step (MHz)	Power Dissipation (W)	Package (mm)
HMC6000LP711E	60 GHz Rx with integrated antennae	57 to 64	11	—	17	38	–86	1.8	7.5	500/540	0.8	7 × 11, 60-lead LFCSP
HMC6001LP711E	60 GHz Tx with integrated antennae	57 to 64	—	7	67	38	–86	1.8	7.5	500/540	0.61	7 × 11, 60-lead LFCSP

24 GHz ADAS Radar Chipset

Part Number	Function	Description
ADF4159	Ramp generator	13 GHz, frac-N FMCW ramping PLL
ADF4158	Ramp generator	6 GHz, frac-N FMCW ramping PLL
ADF5901 ***New***	Tx MMIC	24 GHz, ISM band 2-channel FMCW transmitter
ADF5904 ***New***	Rx MMIC	24 GHz, 4-channel receiver downconverter
AD8283	AFE	Radar receive path AFE: 6-channel LNA/PGA/AAF with ADC
AD8284	AFE	Radar receive path AFE: 4-channel mux with LNA, PGA, AAF, and ADC
ADAR7251	AFE	4-channel, 16-bit, continuous time data acquisition ADC data sheet
ADSP-BF70X	DSP	Low power ADSP-BF70x series of Blackfin+ embedded DSP processors with 512 kB L2 SRAM and DDR2/LPDDR interface
ADSP-2147X	DSP	ADSP-2147X SHARC® DSP processor



PLL/Synth

Integer-N PLLs

Part Number	F_{MAX} (GHz)	PFD_{MAX} (MHz)	FOM (dBc/Hz)	Comments	V_S (V)	I_{SY} (mA)	Package (mm)
ADF4002	0.4	104	–222	Clocking applications	3	5	16-lead TSSOP, 4 × 4, 20-lead LFCSP
HMC1031	0.5	140	–208	Divide ratios of 1/5/10 for jitter clean up	3	2	16-lead QSOP
ADF4116	0.55	55	–211	6 dB improvement vs. LMX2306	3 to 5	4.5	16-lead TSSOP
ADF4117	1.2	55	–213	6 dB improvement vs. LMX2316	3 to 5	4.5	16-lead TSSOP
HMC440	2.8	1300	–233	Very low phase noise and highest PFD	5	250	16-lead TSSOP
HMC4069 ***New***	2.9	1300		Very low phase noise and highest PFD	5	250	4 × 4, 24-lead LFCSP
ADF4118	3	55	–216	6 dB improvement vs. LMX2326	3 to 5	6.5	16-lead TSSOP
ADF4113HV	3.7	5	–212	15 V charge pump	3 to 5	11	16-lead TSSOP, 4 × 4, 20-lead LFCSP
ADF4106	6	104	–223	Best integer-N phase noise	3	13	16-lead TSSOP, 4 × 4, 20-lead LFCSP
ADF4107	7	104	–223	Best integer-N phase noise	3	17	16-lead TSSOP, 4 × 4, 20-lead LFCSP
HMC699	7	1300	–233	Very low phase noise and highest PFD	5	310	5 × 5, 32-lead LFCSP
HMC698	7	1300	–233	Widest bandwidth, low phase noise, and high PFD	5	310	5 × 5, 32-lead LFCSP
ADF4007	7.5	120	–219	Hardwired/no need to program	3	15	20-lead LFCSP
ADF4108	8	104	–223	Best integer-N phase noise	3	15	20-lead LFCSP
ADF41020	18	100	–221	Microwave PLL	3	30	4 × 4, 20-lead LFCSP

Integer-N PLLs

Part Number	F_{MAX} (GHz)	PFD_{MAX} (MHz)	FOM (dBc/Hz)	Comments	V_S (V)	I_{SY} (mA)	Package (mm)
ADF4212L	2.4	75	–215	Dual-channel PLL	3 to 5	7.5	20-lead TSSOP, 4 × 4, 20-lead LFCSP
ADF4150HV	3.5	26	–213	Driving VCOs with 1 V to 29 V tuning range, int-N and frac-N	3.3, 6 to 30	50	5 × 5, 32-lead LFCSP

Fractional-N/Integer-N PLLs

Part Number	F_{MAX} (GHz)	PFD_{MAX} (MHz)	FOM (dBc/Hz)	Comments	V_S (V)	I_{SY} (mA)	Package (mm)
HMC702	14	75	–221	Fractional-N with sweeper, integer-N and fractional-N	3.3 5	136, 37	6 × 6, 40-lead LFCSP
ADF4159	13	110	–224	Swept frequency generation for radar, integer-N and fractional-N	3	33	4 × 4, 24-lead LFCSP
ADF4155	8	125	–223	Int-N and frac-N	3.3	38	4 × 4, 24-lead LFCSP
HMC704	8	100	–233	16-bit fractional-N PLL, integer-N and fractional-N	3.3, 5	52, 6	4 × 4, 24-lead LFCSP
HMC703	8	100	–233	Fractional-N PLL with sweeper, integer-N and fractional-N	3.3, 5	52, 6	4 × 4, 24-lead LFCSP
HMC701	8	75	–227	16-bit fractional-N PLL with sweeper, integer-N and fractional-N	3.3, 5	90, 37	6 × 6, 40-lead LFCSP
HMC700	8	105	–226	16-bit fractional-N PLL, integer-N and fractional-N	3.3, 5	90, 5.5	4 × 4, 24-lead LFCSP
ADF4156	6.2	32	–220	6 GHz fractional-N operation	3	26	16-lead TSSOP, 4 × 4, 20-lead LFCSP
ADF4158	6.1	32	–216	Swept frequency generation for radar, integer-N and fractional-N	3	23	4 × 4, 24-lead LFCSP
ADF4157	6	32	–211	Sub-1 Hz resolution	3	23	16-lead TSSOP, 4 × 4, 20-lead LFCSP
ADF4196	6	25	–216	Ultrafast settling PLL	3	68	5 × 5, 32-lead LFCSP
ADF4150	5	32	–223	Integer-N and fractional-N	3.3	50	4 × 4, 24-lead LFCSP
ADF4153A	4	32	–223	Pin-compatible with ADF4153	3	20	16-lead TSSOP, 4 × 4, 20-lead LFCSP
ADF4153	4	32	–220	Pin-compatible with ADF4106	3	20	16-lead TSSOP, 4 × 4, 20-lead LFCSP
ADF4154	4	32	–220	ADF4153 with speed up circuit	3	20	16-lead TSSOP, 4 × 4, 20-lead LFCSP
ADF4151	3.5	32	–221	Integer-N and fractional-N	3.3	42	5 × 5, 32-lead LFCSP
ADF4150HV	3.5	26	–213	Driving VCOs with 1 V to 29 V tuning range, integer-N and fractional-N	3.3, 6 to 30	50	5 × 5, 32-lead LFCSP

Fractional-N/Integer-N PLLs

Part Number	F_{MAX} (GHz)	PFD_{MAX} (MHz)	FOM (dBc/Hz)	Comments	V_S (V)	I_{SY} (mA)	Package (mm)
ADF4193	3.5	30	–216	Ultrafast settling PLL	3	68	5 × 5, 32-lead LFCSP
ADF4252	3	RF_PFD 30, IF_PFD 55	–214	Dual-channel PLL	3	13	4 × 4, 24-lead LFCSP

Integer-N PLLs with Integrated VCO

Part Number	Freq (MHz)	VCO P/N @ 100 kHz (dBc/Hz)	@ F_{OUT} (GHz)	FOM (dBc/Hz)	PFD_{MAX} (MHz)	Output Divider	VCO Tuning Inductor	V_S (V)	I_{SY} (mA)	Package (mm)
ADF4360-0	2400 to 2725	–110	2.6	–216	8	/1, /2	Internal	3.3	25 to 50	4 × 4, 24-lead LFCSP
ADF4360-1	2050 to 2450	–110	2.25	–216	8	/1, /2	Internal	3.3	25 to 50	4 × 4, 24-lead LFCSP
ADF4360-2	1850 to 2170	–110	2	–216	8	/1, /2	Internal	3.3	25 to 50	4 × 4, 24-lead LFCSP
ADF4360-3	1600 to 1950	–110	1.8	–216	8	/1, /2	Internal	3.3	25 to 50	4 × 4, 24-lead LFCSP
ADF4360-4	1450 to 1750	–110	1.6	–216	8	/1, /2	Internal	3.3	25 to 50	4 × 4, 24-lead LFCSP
ADF4360-5	1200 to 1400	–110	1.3	–216	8	/1, /2	Internal	3.3	25 to 45	4 × 4, 24-lead LFCSP
ADF4360-6	1050 to 1250	–110	1.15	–216	8	/1, /2	Internal	3.3	25 to 45	4 × 4, 24-lead LFCSP
ADF4360-7	350 to 1800	–116	0.5	–216	8	/1, /2	Ext L sets frequency range	3.3	25 to 45	4 × 4, 24-lead LFCSP
ADF4360-8	65 to 400	–120	0.16	–216	8	No	Ext L sets frequency range	3.3	20 to 40	4 × 4, 24-lead LFCSP
ADF4360-9	2 to 200	–120	0.16	–218	8	/2 to /62	Ext L sets frequency range	3.3	20 to 40	4 × 4, 24-lead LFCSP

Narrow-Band RF Fractional-N/Integer-N PLLs with VCO

Part Number	Freq (MHz)	VCO P/N @ 100 kHz (dBc/Hz)	VCO P/N @ 1 MHz (dBc/Hz)	P_{OUT} (dBm)	PFD_{MAX} (Frac-N Mode) (MHz)	FOM (dBc/Hz)	V_S (V)	I_{SY} (mA)	Notes	Package (mm)
HMC828	1285 to 1415	–118	–143	10	$f_{VCO}/20$	–227	3.3 and 5	51 and 97	Fractional-N PLL	6 × 6, 40-lead LFCSP
HMC822	665 to 825, 1330 to 1650, 2660 to 3300	–124, –118, –112	–148, –142, 136	+11, +6.5, 4	$f_{VCO}/20$	–227	3.3 and 5	51 and 97	Fractional-N PLL, triband VCO	6 × 6, 40-lead LFCSP
HMC838	795 to 945, 1590 to 1890, 3180 to 3780	–123, –118, –112	–148, –118, –112	+10, +7.5, –4	$f_{VCO}/20$	–230	3.3 and 5	51 and 93	Fractional-N PLL, triband VCO	6 × 6, 40-lead LFCSP
HMC824	780 to 870	–123	–148	14	$f_{VCO}/20$	–227	3.3 and 5	51 and 93	Fractional-N PLL	6 × 6, 40-lead LFCSP
HMC836	3365 to 3705	–111	–136	0	$f_{VCO}/20$	–227	3.3 and 5	51 and 93	Fractional-N PLL	6 × 6, 40-lead LFCSP
HMC821	860 to 1040, 1720 to 2080, 3440 to 4160	–122, –116, –110	–147, –141, –135	+10, +6.5, –4	$f_{VCO}/20$	–227	3.3 and 5	51 and 93	Fractional-N PLL, triband VCO	6 × 6, 40-lead LFCSP
HMC826	990 to 1105	–121	–146	11	$f_{VCO}/20$	–227	3.3 and 5	51 and 93	Fractional-N PLL	6 × 6, 40-lead LFCSP
HMC831	1815 to 2010	–118	–143	7.5	$f_{VCO}/20$	–227	3.3 and 5	51 and 93	Fractional-N PLL	6 × 6, 40-lead LFCSP
HMC837	1025 to 1150, 2050 to 2300, 4100 to 4600	–120, –114, –108	–147, –141, –135	+12, +10.5, –0.5	$f_{VCO}/20$	–230	3.3 and 5	51 and 93	Fractional-N PLL, triband VCO	6 × 6, 40-lead LFCSP
HMC839	1050 to 1205, 2100 to 2410, 4200 to 4820	–121, –116, –109	–146, –140, –135	+10, +7.5, –4	$f_{VCO}/20$	–230	3.3 and 5	51 and 94	Fractional-N PLL, triband VCO	6 × 6, 40-lead LFCSP
HMC820	1095 to 1275, 2190 to 2550, 4380 to 5100	–122, –116, –110	–147, –141, –135	+10, +6.5, –4	$f_{VCO}/20$	–227	3.3 and 5	51 and 94	Fractional-N PLL, triband VCO	6 × 6, 40-lead LFCSP
HMC840	1310 to 1415, 2620 to 2830	–117, –111	–145, –139	10, 9	$f_{VCO}/20$	–230	3.3 and 5	51 and 94	Fractional-N PLL triband VCO	6 × 6, 40-lead LFCSP

Narrow-Band Microwave Fractional-N/Integer PLLs with Integrated VCO

Part Number	Freq (GHz)	VCO P/N @ 1 MHz (dBc/Hz)	P_{OUT} (dBm)	PFD_{MAX} (Frac-N Mode) (MHz)	FOM	V_S (V)	I_{SY} (mA)	Notes	Package (mm)
HMC764	7.3 to 8.2	–140	15	105	–226	3.3 and 5	90 and 245	Frac-N/int-N PLL	6 × 6, 40-lead LFCSP
HMC765	7.8 to 8.8	–140	13	105	–226	3.3 and 5	90 and 245	Frac-N/int-N PLL	6 × 6, 40-lead LFCSP
HMC767	8.45 to 9.55	–138	12	100	–230	3.3 and 5	54 and 257	Frac-N/int-N PLL	6 × 6, 40-lead LFCSP
HMC769	9.05 to 10.15	–140	12	100	–230	3.3 and 5	54 and 272	Frac-N/int-N PLL	6 × 6, 40-lead LFCSP
HMC778	9.6 to 10.8	–140	9	100	–230	3.3 and 5	54 and 272	Frac-N/int-N PLL	6 × 6, 40-lead LFCSP
HMC783	11.5 to 12.5	–134	10	105	–226	3.3 and 5	90 and 145	Frac-N/int-N PLL	6 × 6, 40-lead LFCSP
HMC807	12.4 to 13.4	–132	8	105	–226	3.3 and 5	90 and 205	Frac-N/int-N PLL	6 × 6, 40-lead LFCSP

Wideband Fractional-N/Integer-N PLLs with Integrated VCO

Part Number	Freq (GHz)	VCO P/N @ 100 kHz (dBc/Hz)	VCO P/N @ 1 MHz (dBc/Hz)	@ F_{OUT} (GHz)	PFD_{MAX} (Frac-N Mode) (MHz)	FOM (dBc/Hz)	V_S (V)	I_{SY} (mA)	Package (mm)
ADF5355 ***New***	0.054 to 13.6	–107	–129	10	125	–221	3.3 and 5	110 and 80	5 × 5, 32-lead LFCSP
HMC834	0.045 to 1.05, 1.4 to 2.1, 2.8 to 4.2	–108	–134	4	100	–227	3.3 and 5	52 and 203	6 × 6, 40-lead LFCSP
ADF4355 ***New***	0.055 to 6.8	–120	–142	2.2	125	–222	3.3 and 5	110 and 80	5 × 5, 32-lead LFCSP
ADF4355-3 ***New***	0.0055 to 6.8	–118	–140	2.2	125	–222	3.3	146	5 × 5, 32-lead LFCSP
HMC833	0.025 to 6	–116	–141	2	100	–227	3.3 and 5	52 and 203	6 × 6, 40-lead LFCSP
ADF4355-2 ***New***	0.055 to 4.4	–120	–142	2.2	125	–222	3.3 and 5	110 and 80	5 × 5, 32-lead LFCSP
ADF4351	0.035 to 4.4	–114	–134	2.2	32	–221	3.3	112 to 148	5 × 5, 32-lead LFCSP
ADF4350	0.1375 to 4.4	–114	–134	2.2	32	–220	3.3	112 to 136	5 × 5, 32-lead LFCSP
HMC829	0.045 to 1.05, 1.4 to 2.1, 2.8 to 4.2, 5.6 to 8.4	–108	–134	4	100	–227	3.3 and 5	52 and 203	6 × 6, 40-lead LFCSP
HMC835	0.033 to 4.1	–108	–134	4	100	–230	3.3 and 5	48 and 174	6 × 6, 40-lead LFCSP
HMC830	0.025 to 3	–116	–141	2	100	–230	3.3 and 5	52 and 203	6 × 6, 40-lead LFCSP
HMC832	0.025 to 3	–116	–139	2	100	–226	3.3	230	6 × 6, 40-lead LFCSP

VCOs

Low Current VCOs

Part Number	Description	Freq (GHz)	VCO P/N @ 10 kHz (dBc/Hz)	VCO P/N @ 100 kHz (dBc/Hz)	P_{OUT} (dBm)	V_{TUNE} (V)	V_{CC} (V)	I_{CC} (mA)	Package (mm)
HMC384	VCO with buffer	2.05 to 2.25	–89	–112	3.5	0 to 10	3	35	4 × 4, 24-lead LFCSP
HMC385	VCO with buffer	2.25 to 2.5	–89	–115	4.5	0 to 10	3	35	4 × 4, 24-lead LFCSP
HMC386	VCO with buffer	2.6 to 2.8	–88	–115	5	0 to 10	3	35	4 × 4, 24-lead LFCSP
HMC416	VCO with buffer	2.75 to 3.0	–89	–114	4.5	0 to 10	3	37	4 × 4, 24-lead LFCSP
HMC388	VCO with buffer	3.15 to 3.4	–88	–113	4.9	0 to 10	3	39	4 × 4, 24-lead LFCSP
HMC389	VCO with buffer	3.35 to 3.55	–89	–112	4.7	0 to 10	3	41	4 × 4, 24-lead LFCSP
HMC390	VCO with buffer	3.55 to 3.9	–87	–112	4.7	0 to 10	3	42	4 × 4, 24-lead LFCSP
HMC391	VCO with buffer	3.9 to 4.45	–81	–106	5	0 to 10	3	30	4 × 4, 24-lead LFCSP
HMC429	VCO with buffer	4.45 to 5	–79	–105	4	0 to 10	3	30	4 × 4, 24-lead LFCSP
HMC430	VCO with buffer	5.0 to 5.5	–80	–103	2	0 to 10	3	27	4 × 4, 24-lead LFCSP
HMC431	VCO with buffer	5.5 to 6.1	–80	–102	2	0 to 10	3	27	4 × 4, 24-lead LFCSP
HMC358	VCO with buffer	5.8 to 6.8	–82	–110	11	0 to 10	3	100	8-lead MSOP
HMC466	VCO with buffer	6.1 to 6.72	–73	–101	4.5	0 to 10	3	13	4 × 4, 24-lead LFCSP
HMC505	VCO with buffer	6.8 to 7.4	–80	–106	11	1 to 11	3	80	4 × 4, 24-lead LFCSP
HMC532	VCO with buffer	7.1 to 7.9	–80	–101	14	1 to 13	3	85	4 × 4, 24-lead LFCSP
HMC506	VCO with buffer	7.8 to 8.7	–80	–103	14	1 to 11	3	77	4 × 4, 24-lead LFCSP

High Performance VCOs

Part Number	Description	Freq (GHz)	Primary Divide Output (GHz)	VCO P/N @ 10 kHz (dBc/Hz)	VCO P/N @ 100 kHz (dBc/Hz)	P_{OUT} (dBm)	V_{TUNE} (V)	V_{CC} (V)	I_{CC} (mA)	Package (mm)
HMC507	VCO with $F_0/2$	6.65 to 7.65	3.325 to 3.825	–90	–115	13	2 to 13	5	230	5 × 5, 32-lead LFCSP
HMC508	VCO with $F_0/2$	7.3 to 8.2	3.65 to 4.1	–90	–116	15	2 to 13	5	240	5 × 5, 32-lead LFCSP
HMC509	VCO with $F_0/2$	7.8 to 8.8	3.9 to 4.4	–90	–115	13	2 to 13	5	250	5 × 5, 32-lead LFCSP
HMC1160 ***New***	VCO with $F_0/2$	8.45 to 9.3	4.225 to 4.65	–90	–116	12	2 to 13	5	260	5 × 5, 32-lead LFCSP
HMC510	VCO with $F_0/2$ and divide by 4	8.45 to 9.55	4.225 to 4.775	–92	–116	13	2 to 13	5	315	5 × 5, 32-lead LFCSP
HMC1161	VCO with $F_0/2$	8.7 to 9.55	4.35 to 4.775	–88	–115	12	2 to 13	5	250	5 × 5, 32-lead LFCSP
HMC511	VCO with $F_0/2$	9.05 to 10.15	4.525 to 5.075	–88	–115	13	2 to 13	5	265	5 × 5, 32-lead LFCSP
HMC1162 ***New***	VCO with $F_0/2$	9.25 to 10.1	4.625 to 5.05	–86	–115	12	2 to 13	5	230	5 × 5, 32-lead LFCSP
HMC530	VCO with $F_0/2$ and divide by 4	9.5 to 10.8	4.75 to 5.4	–85	–110	11	2 to 13	5	350	5 × 5, 32-lead LFCSP
HMC512	VCO with $F_0/2$ and divide by 4	9.6 to 10.8	4.8 to 5.4	–85	–111	9	2 to 13	5	330	5 × 5, 32-lead LFCSP
HMC1163 ***New***	VCO with $F_0/2$	9.65 to 10.41	4.625 to 5.05	–88	–115	12	2 to 13	5	230	5 × 5, 32-lead LFCSP
HMC1164 ***New***	VCO with $F_0/2$	10.38 to 11.2	5.19 to 5.60	–85	–113	8	2 to 13	5	220	5 × 5, 32-lead LFCSP
HMC513	VCO with $F_0/2$ and divide by 4	10.43 to 11.46	5.215 to 5.73	–85	–110	7	2 to 13	5	275	5 × 5, 32-lead LFCSP
HMC534	VCO with $F_0/2$ and divide by 4	10.6 to 11.8	5.3 to 5.9	–82	–110	11	2 to 12	5	350	5 × 5, 32-lead LFCSP
HMC1165 ***New***	VCO with $F_0/2$	11.07 to 11.62	5.535 to 5.81	–86	–112	8	2 to 13	5	210	5 × 5, 32-lead LFCSP

High Performance VCOs

Part Number	Description	Freq (GHz)	Primary Divide Output (GHz)	VCO P/N @ 10 kHz (dBc/Hz)	VCO P/N @ 100 kHz (dBc/Hz)	P_{OUT} (dBm)	V_{TUNE} (V)	V_{CC} (V)	I_{CC} (mA)	Package (mm)
HMC582	VCO with $F_0/2$ and divide by 4	11.1 to 12.4	5.55 to 6.2	–83	–110	9	2 to 12	5	350	5 × 5, 32-lead LFCSP
HMC514	VCO with $F_0/2$ and divide by 4	11.17 to 12.02	5.585 to 6.01	–87	–110	7	2 to 13	3	275	5 × 5, 32-lead LFCSP
HMC1166 ***New***	VCO with $F_0/2$	11.4 to 12.6	5.7 to 6.3	–88	–115	11	2 to 13	5	245	5 × 5, 32-lead LFCSP
HMC515	VCO with $F_0/2$ and divide by 4	11.5 to 12.5	5.75 to 6.25	–83	–110	10	2 to 13	5	200	5 × 5, 32-lead LFCSP
HMC583	VCO with $F_0/2$ and divide by 4	11.5 to 12.8	5.75 to 6.4	–80	–110	11	2 to 12	5	350	5 × 5, 32-lead LFCSP
HMC1167 ***New***	VCO with $F_0/2$	12.2 to 13.3	6.1 to 6.65	–90	–116	10	2 to 13	5	215	5 × 5, 32-lead LFCSP
HMC529	VCO with $F_0/2$ and divide by 4	12.4 to 13.4	6.2 to 6.7	–83	–110	8	2 to 13	5	260	5 × 5, 32-lead LFCSP
HMC1168 ***New***	VCO with $F_0/2$	12.48 to 13.7	6.24 to 6.85	–88	–115	11	2 to 13	5	245	5 × 5, 32-lead LFCSP
HMC584	VCO with $F_0/2$ and divide by 4	12.5 to 13.9	6.25 to 6.95	–81	–110	10	2 to 12	5	330	5 × 5, 32-lead LFCSP
HMC1169 ***New***	VCO with $F_0/2$	12.92 to 14.0	6.46 to 7.0	–88	–115	11	2 to 13	5	245	5 × 5, 32-lead LFCSP
HMC531	VCO with $F_0/2$ and divide by 4	13. to 14.9	6.8 to 7.45	–81	–110	10	2 to 12	5	330	5 × 5, 32-lead LFCSP
HMC632	VCO with $F_0/2$ and divide by 4	14.25 to 15.65	7.125 to 7.825	–80	–107	9	2 to 13	5	350	5 × 5, 32-lead LFCSP

Higher Power and Frequency VCOs

Part Number	Description	Freq (GHz)	Primary Divide Output (GHz)	VCO P/N @ 10 kHz (dBc/Hz)	VCO P/N @ 100 kHz (dBc/Hz)	P_{OUT} (dBm)	V_{TUNE} (V)	V_{CC} (V)	I_{CC} (mA)	Package (mm)
HMC734	VCO with divide by 4	8.6 to 10.2	2.15 to 2.55	–70	–100	18	1 to 13	5	218	5 × 5, 32-lead LFCSP
HMC735	VCO with divide by 4	10.5 to 12.2	2.625 to 3.05	–75	–100	17	1 to 13	5	217	5 × 5, 32-lead LFCSP
HMC398	VCO with divide by 8	14 to 15	1.75 to 1.875	–75	–110	6	1 to 13	5	325	16-lead TSSOP
HMC736	VCO with $F_0/2$	14.5 to 15.0	7.25 to 7.5	–80	–105	9	1 to 13	4.2	150	4 × 4, 24-lead LFCSP
HMC737	VCO with $F_0/2$	14.9 to 15.5	7.45 to 7.75	–80	–105	9	1 to 13	4.2	150	4 × 4, 24-lead LFCSP
HMC738	VCO with $F_0/2$ and divide by 16	20.9 to 23.9	10.45 to 11.95	–65	–95	9	1 to 13	5	200	4 × 4, 24-lead LFCSP
HMC533	VCO with divide by 16	23.8 to 24.8	1.488 to 1.675	–70	–95	12	1 to 13	5	220	4 × 4, 24-lead LFCSP
HMC739	VCO with $F_0/2$ and divide by 16	23.8 to 26.8	11.9 to 13.4	–64	–93	8	1 to 13	5	200	4 × 4, 24-lead LFCSP

Ultra Wideband VCOs

Part Number	Description	Freq (GHz)	VCO P/N @ 10 kHz (dBc/Hz)	VCO P/N @ 100 kHz (dBc/Hz)	P_{OUT} (dBm)	V_{TUNE} (V)	V_{CC} (V)	I_{CC} (mA)	Package (mm)
HMC586	Wideband VCO	4 to 8	–75	–100	5	0 to 18	5	55	4 × 4, 24-lead LFCSP
HMC587	Wideband VCO	5 to 10	–65	–95	5	0 to 18	5	55	4 × 4, 24-lead LFCSP
HMC732	Wideband VCO	6 to 12	–65	–95	1	0 to 23	5	57	4 × 4, 24-lead LFCSP
HMC588	Wideband VCO	8 to 12.5	–65	–93	5	0 to 13	5	55	4 × 4, 24-lead LFCSP
HMC6380 ***New***	Wideband VCO	8 to 16.0	–64	–94	5	0 to 23	5	70	4 × 4, 24-lead LFCSP
HMC733	Wideband VCO	10 to 20	–60	–90	2	–0.25 to +23	5	70	4 × 4, 24-lead LFCSP

Frequency Dividers, Multipliers, and Detectors

Frequency Dividers (Prescalers) and Counters

Part Number	Description	Input Freq (GHz)	Input Power (dBm)	Output Power (dBm)	Phase Noise @ 100 kHz Offset (dBc/Hz)	Specs @ (GHz)	V_{CC} (V)	I_{CC} (mA)	Package (mm)
HMC794	Programmable divide by (N = 1 to 4)	0.2 to 2.0	–2 to +10	10	–160	2	5	135	3 × 3, 16-lead LFCSP
HMC394	5-bit counter, divide by 2 to 32	0.1 to 2.2	–15 to +10	4	–153	1	5	194	4 × 4, 24-lead LFCSP
HMC905	Programmable divide by (N = 1 to 4)	0.4 to 6.0	0 to 10	3	–158	6	3.3	100	3 × 3, 16-lead LFCSP
HMC705	Programmable divide by (N = 1 to 17)	0.1 to 6.5	–15 to +10	0	–153	6	5	190	4 × 4, 24-lead LFCSP
HMC437	Fixed divide by 3	DC to 7	–12 to +12	–1	–153	6	5	69	8-lead MSOP
HMC438	Fixed divide by 5	DC to 7	–15 to +10	–1	–153	6	5	80	8-lead MSOP
HMC983	48-bit SD programmable fractional divider with sweeper	DC to 7	–15 to –30	2 V p-p into 100 Ω	–160	7	5, 3.3	1, 244	5 × 5, 32-lead LFCSP
HMC432	Fixed divide by 2	DC to 8	–12 to +12	–3	–148	4	3	42	SOT-26
HMC433	Fixed divide by 4	DC to 8	–12 to +12	–2	–150	4	3	53	SOT-26
HMC434	Fixed divide by 8	DC to 8	–10 to +12	–2	–150	3	3	62	SOT-26
HMC361	Fixed divide by 2	DC to 10	–15 to +10	3	–148	6	5	83	Die, hermetic SMT, 8-lead SOIC
HMC362	Fixed divide by 4	DC to 12	–15 to +10	–6	–149	6	5	68	8-lead SOIC, die
HMC363	Fixed divide by 8	DC to 12	–15 to +10	4	–153	6	5	90	Die, hermetic SMT, 8-lead SOIC

Frequency Dividers (Prescalers) and Counters

Part Number	Description	Input Freq (GHz)	Input Power (dBm)	Output Power (dBm)	Phase Noise @ 100 kHz Offset (dBc/Hz)	Specs @ (GHz)	V_{CC} (V)	I_{CC} (mA)	Package (mm)
HMC365	Fixed divide by 4	DC to 13	–15 to +10	7	–151	6	5	120	Die, hermetic SMT, 8-lead SOIC
HMC492	Fixed divide by 2	DC to 18	–20 to +10	–4	–150	8	5	78	3 × 3, 16-lead LFCSP
HMC493	Fixed divide by 4	DC to 18	–20 to +10	–4	–150	6	5	96	3 × 3, 16-lead LFCSP
HMC494	Fixed divide by 8	DC to 18	–20 to +10	–4	–150	6	5	103	3 × 3, 16-lead LFCSP
ADF5000	Fixed divide by 2	4 to 18	–10 to +10	–5	–147	12	3.3	30	3 × 3, 16-lead LFCSP
ADF5001	Fixed divide by 4	4 to 18	–10 to +10	–5	–150	12	3.3	30	3 × 3, 16-lead LFCSP
ADF5002	Fixed divide by 8	4 to 18	–10 to +10	–5	–153	12	3.3	30	3 × 3, 16-lead LFCSP
HMC447	Fixed divide by 4	10 to 26	–15 to +10	–4	–150	22	5	96	3 × 3, 16-lead LFCSP

Frequency Multipliers—Active

Part Number	Description	Input Freq (GHz)	Output Freq (GHz)	Input Power (dBm)	Output Power (dBm)	100 kHz Phase Noise (dBc/Hz)	V_{CC} (V)	I_{CC} (mA)	Package (mm)
HMC575	×2 active	3 to 4.5	6 to 9	3	17	–140	5	90	4 × 4, 24-lead LFCSP
HMC561	×2 active	4 to 10.5	8 to 21	5	17	–139	5	98	Die, 3 × 3, 16-lead LFCSP
HMC573	×2 active	4 to 11	8 to 22	5	12	–134	5	92	3 × 3, 12-lead LFCSP
HMC368	×2 active	4.5 to 8.0	9 to 16	2	13	–140	5	75	4 × 4, 24-lead LFCSP
HMC369	×2 active	4.95 to 6.35	9.9 to 12.7	0	4	–142	5	46	3 × 3, 16-lead LFCSP
HMC814	×2 active	6.5 to 12.3	13 to 24.6	4	17	–136	5	88	Die, 3 × 3, 16-lead LFCSP
HMC576	×2 active	9 to 14.5	18 to 29	3	17	–132	5	82	Die, 3 × 3, 16-lead LFCSP
HMC448	×2 active	9.5 to 12.5	19 to 25	0	11	–135	5	48	Die
HMC598	×2 active	11 to 23	22 to 46	5	15	—	5	175	Die
HMC578	×2 active	12 to 16.5	24 to 33	3	17	132	5	81	Die, 3 × 3, 12-lead LFCSP
HMC942	×2 active	12.5 to 15.5	25 to 31	4	17	—	4.5	214	4 × 4, 24-lead LFCSP
HMC577	×2 active	13.5 to 15.5	27 to 31	5	20	–128	5	213	4 × 4, 24-lead LFCSP
HMC579	×2 active	16 to 23	32 to 46	3	9	–127	5	70	Die
HMC1096	×2 active	1.9 to 28	3.8 to 5.6	0	12	–142	5	100	3 × 3, 16-lead LFCSP

Frequency Multipliers—Active

Part Number	Description	Input Freq (GHz)	Output Freq (GHz)	Input Power (dBm)	Output Power (dBm)	100 kHz Phase Noise (dBc/Hz)	V_{cc} (V)	I_{cc} (mA)	Package (mm)
HMC443	×4 active	2.45 to 2.8	9.8 to 11.2	–15	4	–142	5	52	4 × 4, 24-lead LFCSP
HMC695	×4 active	2.85 to 3.3	11.4 to 13.2	–15	7	–140	5	60	4 × 4, 24-lead LFCSP
HMC370	×4 active	3.6 to 4.1	14.4 to 16.4	–15	0	–140	5	55	4 × 4, 24-lead LFCSP
HMC444	×8 active	1.2375 to 1.4	9.9 to 11.2	–15	6	–136	5	68	4 × 4, 24-lead LFCSP
HMC445	×16 active	0.61875 to 0.6875	9.9 to 11	–15	7	–130	5	78	4 × 4, 24-lead LFCSP
HMC1110	×6 active	11.83 to 14.33	3.8 to 5.6	0 to 6	13	—	4	255	Die

Frequency Multipliers—Passive

Part Number	Description	Input Freq (GHz)	Output Freq (GHz)	Input Drive (dBm)	Conversion Loss (dB)	1 F_0 Isolation (dB)	4 F_0 Isolation (dB)	Package (mm)
HMC-XDB112	×2 passive	10 to 15	20 to 30	10 to 15	13	30	—	Die
HMC1105	×2 passive	20 to 40	40 to 80	11 to 15	11	41	46	Die
HMC-XTB110	×3 passive	24 to 30	72 to 90	10 to 15	19	—	—	Die

Phase Frequency Detectors

Part Number	Description	Input Freq (GHz)	Input Power (dBm)	10 kHz Phase Noise (dBc/Hz)	Output Level	V_{cc} (V)	I_{cc} (mA)	Package (mm)
HMC984	Frequency detector and charge pump	DC to 0.35	3 to 12	—	0.02 mA to 2.5 mA	5, 3	97 27	4 × 4, 24-lead LFCSP
HMC439	High frequency phase frequency detector	0.01 to 1.3	–10 to +10	–153	2 V p-p	5	96	16-lead QSOP
HMC3716 ***New***	High frequency phase frequency detector	0.01 to 1.3	–10 to +5	–153	2 V p-p	5	115	4 × 4, 24-lead LFCSP

Tunable Harmonic Low-Pass Filters

Tunable Harmonic Low-Pass Filters

Part Number	Description	Freq Range (GHz)	Control	Cutoff Freq Range (GHz)	Stop Band Freq (Rej > 20 dB)	Tuning Response (ns)	Return Loss (dB)	Package (mm)
HMC1044	Programmable, harmonic low-pass filter	DC to 3.025	Digital 16 bits	1 to 3	—	10	10	3 × 3, 16-lead LFCSP

RF Power Detectors

TruPwr RMS Responding Detectors

Part Number	Description	RF Freq (MHz)	Input Range (dB)	Temp Drift (dB)	@ Pin (dBm)	Specs @ (MHz)	V_S (V)	I_{SY} (mA)	Package (mm)
AD8361	Linear in V/V rms	2500	30	±0.25	5	900	3 to 5	1.1	SOT-23, 8-lead SOIC
AD8364	Dual linear-in-dB	LF to 2700	60	±0.5	–10	900	5	70	5 × 5, 32-lead LFCSP
AD8362	Linear-in-dB	LF to 3800	65	±1.0	0	900	5	20	16-lead TSSOP
HMC1010	Linear-in-dB	DC to 3900	60	±0.5	0	900	5	48	4 × 4, 24-lead LFCSP
HMC1020	Linear-in-dB	DC to 3900	72	±0.75	–10	900	5	55	4 × 4, 24-lead LFCSP
HMC1021	Linear-in-dB with envelope detector	DC to 3900	70	±0.5	–10	900	5	75	4 × 4, 24-lead LFCSP
HMC1030	Dual linear-in-dB with envelope detector	DC to 3900	70	±0.5	–10	900	5	143	5 × 5, 32-lead LFCSP
HMC1120	Linear-in-dB with envelope detector	100 to 4000	72	±0.5		1900	3	70	4 × 4, 24-lead LFCSP
HMC909	Linear-in-dB	DC to 5800	40	±0.5	–15	900	5	42	4 × 4, 24-lead LFCSP
ADL5511	Linear in V/V rms with envelope detector	DC to 6000	47	±0.1	10	900	5	21.5	4 × 4, 16-lead LFCSP
AD8363	Linear-in-dB	0.05 to 6000	60	±0.5	–10	900	5	60	4 × 4, 16-lead LFCSP
AD45101	Linear in V/V rms	50 to 6000	40	±0.1	5	900	3 to 5	1.1	2 × 2.1, 6-lead SC70
ADL5501	Linear in V/V rms	50 to 6000	30	±0.1	5	900	3 to 5	1.1	2 × 2.1, 6-lead SC70
ADL5500	Linear in V/V rms	100 to 6000	30	±0.25	2.5	900	3 to 5	1	1 × 1, 4-ball WLCSP
ADL5903	Linear-in-dB	200 to 6000	35	±0.2	–10	900	3 to 5	2.5	2 × 2, 8-lead LFCSP
ADL5502	Linear in V/V rms with peak/env detector	450 to 6000	35	±0.1	10	900	3	3	3 × 3, 8-ball WLCSP
ADL5504	Linear in V/V rms excellent rms accuracy	450 to 6000	30	±0.1	10	900	3	1.8	1.2 × 0.8, 6-ball WLCSP
ADL5505	Linear in V/V rms excellent rms accuracy	450 to 6000	30	±0.1	10	900	3	1.8	0.8 × 0.8, 4-ball WLCSP
ADL5902	Linear-in-dB	50 to 9000	65	±0.5	–10	900	5	73	4 × 4, 16-lead LFCSP
ADL5906	Linear-in-dB	10 to 10000	60	±1	–10	900	5	70	4 × 4, 16-lead LFCSP

Non-RMS Responding RF Detectors

Part Number	Description	RF Freq (MHz)	Input Range (dB)	Temp Drift (dB)	@ Pin (dBm)	Response Time (ns)	Specs @ (MHz)	V_S (V)	I_{SY} (mA)	Package (mm)
AD8306	Log/limiting amp	5 to 400	100	±1	0	73	10	3 to 5	16	16-lead SOP, die
AD8310	Log amp	DC to 440	95	±1	0	15	100	3 to 5	8	8-lead MSOP, die
AD8307	Log amp	DC to 500	92	±1	0	400	100	3 to 5	8	8-lead SOIC, 8-lead PDIP
AD8309	Log/limiter amp	5 to 500	100	±1	0	67	100	3 to 5	16	16-lead TSSOP
AD8313	Log amp	100 to 2500	70	±1.25	–10	40	900	3 to 5	13.7	8-lead MSOP
AD8302	Gain and phase detector	DC to 2700	60	±1	–30	60	900	3 to 5	19	14-lead TSSOP
HMC713	Log detector/ controller	45 to 2700	54	±1	–10	100	900	3 to 5	17	8-lead MSOP
AD8314	Log amp	100 to 2700	45	±1	–10	70	900	3 to 5	4,5	8-lead MSOP, 2 × 3, 8-lead LFCSP
HMC612	Log detector/ controller	0 to 3000	74	±0.75	–10	400	900	3 to 5	29	4 × 4, 24-lead LFCSP
AD8312	Log amp	50 to 3500	45	±0.5	–10	85	900	3 to 5	4.2	1 × 1.5, 6-ball WLCSP
ADL5513	Log detector/ controller	1 to 4000	80	±0.5	–10	20	900	3 to 5	31	3 × 3, 16-lead LFCSP
HMC601	Log detector/ controller	10 to 4000	75	±0.5	–15	34	900	3 to 5	30	4 × 4, 24-lead LFCSP
HMC600	Log detector/ controller	50 to 4000	70	±0.5	–15	—	900	3 to 5	29	4 × 4, 24-lead LFCSP
ADL5506	Log amp	30 to 4500	45	±1	–10	100	900	3 to 5	3.75	0.8 × 1.2, 6-ball WLCSP

Non-RMS Responding RF Detectors

Part Number	Description	RF Freq (GHz)	Input Range (dB)	Temp Drift (dB)	@ Pin (dBm)	Response Time (ns)	Specs @ (MHz)	V_S (V)	I_{SY} (mA)	Package (mm)
AD8318	Log detector/ controller	0.001 to 8	70	±0.5	–10	10	0.9	5	68	4 × 4, 16-lead LFCSP
HMC713	Log detector/ controller	0.05 to 8	54	±0.5	–10	50	0.9	3.3/5	17	3 × 3, 16-lead LFCSP, 8-lead MSOP
HMC602	Log detector/ controller	0.001 to 8	72	±1	–10	—	0.9	5	113	4 × 4, 24-lead LFCSP
AD8319	Log detector/ controller	0.001 to 10	45	±0.5	–10	6	0.9	3.3/5	22	2 × 3, 8-lead LFCSP
AD8317	Log detector/ controller	0.001 to 10	55	±0.5	–10	6	0.9	3.3/5	22	2 × 2, 8-lead LFCSP, die
HMC611	Log detector/ controller	0.001 to 10	69	±1	–10	—	0.9	5	106	Die, 4 × 4, 24-lead LFCSP
ADL5519	Dual log amp	1 to 10	62	±0.5	–10	6	0.9	3.3/5	60	5 × 5, 32-lead LFCSP
HMC1094	Millimeter wave log detector	1 to 23	50	±0.5	–10	115	10	3.3	85	3 × 3, 16-lead LFCSP
HMC948	Millimeter wave log detector	1 to 23	54	±0.5	–10	7	10	3.3	91	3 × 3, 16-lead LFCSP
HMC662	Millimeter wave log detector	8 to 30	54	±0.5	–10	10	10	3.3	88	3 × 3, 16-lead LFCSP
ADL6010	Linear-in-V/V	0.5 to 43.5	45	±0.3	–10	10	10	5	3	2 × 2, 6-lead LFCSP
HMC7447	E band detector linear-in-V/V	71 to 86	24	±0.5	18	—	81	—	—	Die

Envelope and Peak Detectors

Part Number	Description	RF Freq (MHz)	Env BW (MHz)	Input Range (dB)	Temp Drift (dB)	@ Pin (dBm)	Specs @ (MHz)	V_S (V)	I_{SY} (mA)	Package (mm)
HMC1120	Linear-in-dB with envelope detector	100 to 4000	150	72	±0.5	—	1900	3	70	4 × 4, 24-lead LFCSP
HMC1030	Dual RMS linear-in-dB with envelope detector	DC to 3900	150	70	±0.5	–10	900	5	143	5 × 5, 32-lead LFCSP
HMC1021	RMS linear-in-dB with envelope detector	DC to 3900	150	70	±0.5	–10	900	5	75	4 × 4, 24-lead LFCSP
ADL6010	Linear-in-V/V	0.5 to 43.5	45	45	±0.3	–10	10000	5	3	2 × 2, 6-lead LFCSP
ADL5511	RMS linear-in-V/V with envelope detector	DC to 6000	130	47	±0.1	10	900	5	21.5	4 × 4, 16-lead LFCSP
ADL5502	RMS linear-in-V/V with peak/envelope detector	450 to 6000	10	35	±0.1	10	900	3	3	3 × 3, 8-ball WLCSP

SDLVAs

Part Number	Description	RF Freq (GHz)	Rise/Fall Time (nS)	Input Range (dB)	RF Threshold (dBm)	Temp Drift (dB)	@ Pin (dBm)	Specs @ (GHz)	V_S (V)	I_{SY} (mA)	Package (mm)
HMC813	SDLVA with limited output	1 to 26	5 to 10	55	–53	±0.5	–10	10	3.3	150	Die, 4 × 4, 24-lead LFCSP
HMC913	SDLVA	0.6 to 20	5 to 10	59	–54	±0.5	–10	10	3.3	80	Die, 4 × 4, 24-lead LFCSP
HMC613	SDLVA	0.1 to 20	4 to 18	59	–54	±0.5	–10	10	3.3	83	4 × 4, 24-lead LFCSP
HMC1013	High range SDLVA	0.5 to 18.5	5 to 15	67	–62	±0.5	0	10	3.3	183	4 × 4, 24-lead LFCSP

RF Switches

SPST

Part Number	Function	RF Freq (GHz)	Insertion Loss (dB)	Isolation (dB)	IP1dB (dB)	IP0.1dB (dB)	IIP3	Specs @ (GHz)	Control Input (V_{DC})	Package (mm)
HMC550A	SPST, fail-safe	DC to 6	0.7	25	—	32	52	2	0/2.2 to 5	SOT-26
HMC1055	SPST, nonreflective	DC to 3.5	0.6	36	32	28	63	2	0/3	SOT-26

SPDT

Part Number	Function	RF Freq (GHz)	Insertion Loss (dB) (Tx/Rx)	Isolation (dB) (Tx/Rx)	IP1dB (dB) (Tx/Rx)	IP0.1dB (dB) (Tx/Rx)	IIP3 (Tx/Rx)	Specs @ (GHz)	Control Input (V_{DC})	Package (mm)
HMC199A	Dual SPDT switch	DC to 2.5	0.4	25	28	27	55	2	0/5	8-lead MSOP
HMC546	SPDT, 10 W, fail-safe	0.2 to 2.7	(0.4/0.3)	(22/27)	—	(41/21)	(64/45)	2	0/3 to 8	2 × 2, 6-lead DFN, 8-lead MSOP
HMC197B	SPDT, reflective	DC-3	0.4	28	30	28	45	1	0/3	SOT-26
HMC194A	SPDT, high isolation	DC to 3	0.5	55	30	28	53	1	0/5	8-lead MSOP
HMC221B	SPDT, reflective	DC to 3	0.4	29	30	27	55	1	0/3	SOT-26
HMC190B	SPDT, reflective	DC to 3	0.4	30	30	27	55	2	0/3	8-lead MSOP
HMC574A ***New***	SPDT, 5 W, Tx/Rx	DC to 3	0.25	30	38	36	63	1	0/3 to 8	8-lead MSOP
HMC595A ***New***	SPDT, 3 W, Tx/Rx	DC to 3	0.25	30	38	36	64	1	0/3 to 10	SOT-26
HMC284A	SPDT, nonreflective	DC to 3.5	0.5	45	29	27	50	2	0/5	8-lead MSOP
HMC349A	SPDT, high isolation	DC to 4	0.9	67	34	32	53	1	0/5	4 × 4, 16-lead LFCSP, 8-lead MSOP
HMC435A	SPDT, nonreflective	DC to 4	0.8	62	30	27	54	1	0/5	8-lead MSOP
HMC544	SPDT Tx/Rx	DC to 4	0.25	23	39	37	55	1	0/3 to 5	SOT-26
HMC336	SPDT, high isolation	DC to 6	1.2	47	26	24	42	2	0/5	8-lead MSOP
HMC849A	SPDT, nonreflective	DC to 6	0.9	60	34	32	52	2	0/3 to 5	4 × 4, 16-lead LFCSP
HMC536	SPDT Tx/Rx	DC to 6	0.5	27	—	34	52	3	0/3 to 5	8-lead MSOP, 2 × 2, 6-lead DFN

SPDT

Part Number	Function	RF Freq (GHz)	Insertion Loss (dB) (Tx/Rx)	Isolation (dB) (Tx/Rx)	IP1dB (dB) (Tx/Rx)	IP0.1dB (dB) (Tx/Rx)	IIP3 (Tx/Rx)	Specs @ (GHz)	Control Input (V_{DC})	Package (mm)
HMC1118 ***New***	SPDT, nonreflective	DC to 13	0.6	56	37	—	62	8	0/3.3	3 × 3, 16-lead LFCSP
HMC986A	SPDT, reflective	0.1 to 50	1.7	36	25	21	40	18	0/–3	Die
HMC-SDD112	SPDT, pin MMIC	55 to 86	2	30	—	—	—	80	–1	Die
HMC545A	SPDT	DC to 3	0.27	31	30	27	46	2	0/3.3 to 5	24-lead QSOP
HMC232A	SPDT high isolation	DC to 12	1.5	57	30	27	47	8	0 /–5	4 × 4, 24-lead LFCSP

SP3T, SP4T, SP6T, SP8T

Part Number	Function	RF Freq (GHz)	Insertion Loss (dB)	Isolation (dB)	IP1dB (dB)	IP0.1dB (dB)	IIP3	Specs @ (GHz)	Control Input (V_{DC})	Package (mm)
HMC252A ***New***	SP6T	DC to 3	0.8	41	24	—	46	2	0/3.3 to 5	24-lead QSOP
HMC241A	SP4T	DC to 4	0.7	43	30	26	47	2	TTL/CMOS	3 × 3, 16-lead LFCSP, 16-lead TSSOP
HMC244A	SP4T	DC to 4	0.7	40	26	22	47	2	TTL/CMOS	Hermetic SMT
HMC245A	SP3T	DC to 3.5	0.5	44	26	24	48	2	TTL/CMOS	16-lead TSSOP
HMC253A	SP8T	DC to 3.5	1.2	36	24	20	43	3	TTL/CMOS	4 × 4, 24-lead LFCSP, 24-lead QSOP
HMC344A ***New***	SP4T	DC to 8	1.8	40	21	19	40	6	0/–5	3 × 3, 16-lead LFCSP, die, hermetic SMT, 3 × 3, 16-lead LFCSP
HMC322A ***New***	SP8T	DC to 8	2.4	30	26	22	42	6	0/–5	4 × 4, 24-lead LFCSP
HMC345A	SP4T	DC to 8	2.2	32	21	19	45	6	0/+5	3 × 3, 16-lead LFCSP
HMC641A	SP4T	DC to 20	2.3	45	22	—	38	10	0/–5	Die, 4 × 4, 24-lead LFCSP
HMC1084	SP4T	23 to 30	2.8	26	—	—	47	25	0/–3	4 × 4, 24-lead LFCSP

Bypass, Diversity, Matrix, and Transfer

Part Number	Function	RF Freq (GHz)	Insertion Loss (dB)	Isolation (dB)	IP1dB (dB)	IP0.1dB (dB)	IIP3	Specs @ (GHz)	Control Input (V_{DC})	Package (mm)
HMC596	4 × 2 matrix	0.2 to 3.0	6.5	43	22	—	27	2	0/3 to 5	4 × 4, 24-lead LFCSP

Crosspoint

Part Number	Function	Data/Clock Rate (Gbps/GHz)	Rise/Fall Time (ps)	Differential Output Swing (V p-p)	DC Power Consumption per Channel (mW)	DC Power Supply (V_{DC})	Package (mm)
HMC857	2 × 2 crosspoint switch	14/14	21/21	0.5 to 1.2	150	–3.3	5 × 5, LFCSP

Phase Shifters and Vector Modulators

Analog Phase Shifters

Part Number	Function	Freq (GHz)	Loss (dB)	Phase Range @ Min Freq (°)	Phase Range @ Max Freq (°)	2nd Harmonic @ Pin = –10 dBm (dBc)	IIP3	Specs @ (GHz)	Control V Range (V_{DC})	Package (mm)
HMC247	Analog phase shifter	5 to 18	4	500	100	–80	32	10	0 to –10	Die
HMC877	Analog time delay/ phase shifter	8 to 23	—	504	485	–35	—	—	2.7 to 3.9	3 × 3, ceramic, +16-lead SMT

Digital Phase Shifters

Part Number	Function	Freq (GHz)	Loss (dB)	Phase Adjust Range (°)	Phase Adjust Resolution	RMS Phase Error (°)	IIP3 (dBm)	IP1dB (dBm)	Package
HMC642A ***New***	6-bit digital phase shifter	9 to 12.5	7	360	6-bit, 5.625°	4.5	35	30	5 × 5, ceramic, 32-lead SMT
HMC647A ***New***	6-bit digital phase shifter	2.5 to 3.1	4	360	6-bit, 5.625°	1.5	50	31	6 × 6, 28-lead LFCSP
HMC649A ***New***	6-bit digital phase shifter	3 to 6	8	360	6-bit, 5.625°	4	40	31	6 × 6, 28-lead LFCSP
HMC1133A ***New***	6-bit digital phase shifter	5 to 6	5	360	6-bit, 5.625°	2.8	46	30	5 × 5, 32-lead LFCSP

Vector Modulators

Part Number	Function	Freq (GHz)	I/Q BW (MHz)	Noise Floor (dBm/Hz)	Gain Range (dB)	Phase Range (°)	IP3	P1dB (dBm)	V_S (V)	I_{SV} (mA)
AD8340	Vector mod	0.7 to 1	230	–149	—	360	—	11	5	130
AD8341	Vector mod	1.5 to 2.4	230	–151	—	360	—	8.5	5	130
ADL5390	Vector mod (need ext 90°)	0.2 to 2.4	230	–150	—	360	—	13	5	130
HMC630	Vector mod	0.7 to 1	180	–162	40	360	34	17	8	92
HMC500	Vector mod	1.8 to 2.2	150	–162	40	360	33	16	8	90
HMC631	Vector mod	1.8 to 2.7	160	–160	40	360	35	21	8	93

Analog Multipliers

Part Number	RF Freq (MHz)	Dynamic Range (dB)	Accuracy (dB)	Response Time (ns)	V_S (V)	I_{SV} (mA)	Comments	Package (mm)
ADL5391	DC to 2000	60	±0.2	60	4.75 to 5.5	135	RF/IF multiplier	3 × 3, 32-lead LFCSP

Timing ICs and Clocks

Multioutput Clock Generators

Part Number	Supply Voltage (V)	Number of Reference Inputs	Number of Outputs	Number of Dividers	Number of Delay Lines	On-Chip VCO or DCO	Max Output Frequency (MHz)	Output Logic	Wideband Random Jitter (ps rms)	I/O Interface	Package (mm)
AD9510	3.3	1	8	8	2	No	1200	CMOS, LVDS, LVPECL	0.225	Serial	64-lead LFCSP
AD9511	3.3	1	5	5	1	No	1200	CMOS, LVDS, LVPECL	0.225	Serial	48-lead LFCSP
AD9516-0	3.3	2	14	5	4	Yes	2950	CMOS, LVDS, LVPECL	<0.4	Serial	64-lead LFCSP
AD9516-1	3.3	2	14	5	4	Yes	2650	CMOS, LVDS, LVPECL	<0.4	Serial	64-lead LFCSP
AD9516-2	3.3	2	14	5	4	Yes	2335	CMOS, LVDS, LVPECL	<0.4	Serial	64-lead LFCSP
AD9516-3	3.3	2	14	5	4	Yes	2250	CMOS, LVDS, LVPECL	<0.4	Serial	64-lead LFCSP
AD9516-4	3.3	2	14	5	4	Yes	1800	CMOS, LVDS, LVPECL	<0.4	Serial	64-lead LFCSP
AD9516-5	3.3	2	14	5	4	No	2400	CMOS, LVDS, LVPECL	<0.4	Serial	64-lead LFCSP
AD9525	3.3	3	9	2	0	No	3.6 GHz	LVPECL/CM	0.08	Serial	48-lead LFCSP
AD9517-0	3.3	2	12	4	4	Yes	2950	CMOS, LVDS, LVPECL	<0.4	Serial	48-lead LFCSP
AD9517-1	—	—	—	—	—	—	2650	—	—	—	—
AD9517-2	—	—	—	—	—	—	2335	—	—	—	—
AD9517-3	—	—	—	—	—	—	2250	—	—	—	—
AD9517-4	—	—	—	—	—	—	1800	—	—	—	—
AD9518-0	3.3	2	6	3	0	Yes	2950	LVPECL	<0.4	Serial	48-lead LFCSP
AD9518-1	—	—	—	—	—	—	2650	—	—	—	—
AD9518-2	—	—	—	—	—	—	2335	—	—	—	—
AD9518-3	—	—	—	—	—	—	2250	—	—	—	—
AD9518-4	—	—	—	—	—	—	1800	—	—	—	—

Multioutput Clock Generators

Part Number	Supply Voltage (V)	Number of Reference Inputs	Number of Outputs	Number of Dividers	Number of Delay Lines	On-Chip VCO or DCO	Max Output Frequency (MHz)	Output Logic	Wideband Random Jitter (ps rms)	I/O Interface	Package (mm)
AD9520-0	3.3	2	12/24	4	0	Yes	2950	LVPECL, CMOS	<0.4	Serial with EEPROM	64-lead LFCSP
AD9520-1	—	—	—	—	—	—	2650	—	—	—	—
AD9520-2	—	—	—	—	—	—	2335	—	—	—	—
AD9520-3	—	—	—	—	—	—	1800, 2250	—	—	—	—
AD9520-5	—	—	—	—	—	No	2400	—	—	—	—
AD9522-0	3.3	2	12/24	4	0	Yes	800	LVDS, CMOS	<0.4	Serial with EEPROM	64-lead LFCSP
AD9522-1	—	—	—	—	—	—	—	—	—	—	—
AD9522-2	—	—	—	—	—	—	—	—	—	—	—
AD9522-3	—	—	—	—	—	—	—	—	—	—	—
AD9522-4	—	—	—	—	—	—	—	—	—	—	—
AD9522-5	—	—	—	—	—	No	—	—	—	—	—
AD9523	3.3	2	14	14	0	Yes	1 GHz	CMOS, HSTL, LVDS, LVPECL	225 fs	Serial	72-lead LFCSP
AD9523-1	—	—	—	—	—	—	—	—	187 fs	—	—
AD9524	3.3	2	6	6	0	Yes	1 GHz	CMOS, HSTL, LVDS, LVPECL	225 fs	Serial	48-lead LFCSP

Clock Generators and Synchronizers

Part Number	Supply Voltage (V)	Number of Reference Inputs	Number of Outputs	Number of Dividers	Number of Delay Lines	On-Chip VCO or DCO	Max Output Frequency (MHz)	Output Logic	Wideband Random Jitter (ps rms)	I/O Interface	Package (mm)
AD9547	1.8, 3.3	2	2	2	1	Yes	450	LVDS, LVPE	0.7	Serial	64-lead LFCSP
AD9549	1.8, 3.3	2	2	1	0	Yes	750	CMOS, HSTL	0.6	Serial	64-lead LFCSP
AD9548	1.8, 3.3	8	8	4	1	Yes	450	LVDS, LVPECL, CMOS	0.7	Serial	88-lead LFCSP
AD9550	1.8, 3.3	1	2	2	0	Yes	810	LVPECL, LV	0.5	N/A	32-lead LFCSP
AD9552	1.8, 3.3	2	2	2	0	Yes	900	LVDS, LVPE	0.5	Serial	32-lead LFCSP
AD9553	1.8, 3.3	3	2	2	0	Yes	810	LVDS, LVPE	0.5	Serial	32-lead LFCSP
AD9557	1.8, 3.3	2	2	2	0	Yes	1250	HSTL, LVDS	0.5	Serial	40-lead LFCSP
AD9558	1.8, 3.3	4	6	4	0	Yes	1250	HSTL, LVDS	0.5	Serial	64-lead LFCSP
AD9559	1.8, 3.3	4	4	4	0	Yes	1250	HSTL, LVDS	0.5	Serial	72-lead LFCSP

Clock Buffers and Dividers

Part Number	Supply Voltage (V)	Number of Reference Inputs	Number of Outputs	Number of Dividers	Number of Delay Lines	On-Chip VCO or DCO	Max Output Frequency (MHz)	Output Logic	Wideband Random Jitter (ps rms)	I/O Interface	Package (mm)
AD9513	3.3	1	3	3	1	No	800	CMOS, LVDS	0.3	Pin select	32-lead LFCSP
AD9515	3.3	1	2	2	1	No	1600	CMOS, LVDS, LVPECL	0.225	Pin select	32-lead LFCSP
ADCLK905	2.5 to 3.3	1	1	—	—	No	6000	ECL, PECL, LVPECL	0.06	—	16-lead LFCSP
ADCLK907	2.5 to 3.3	2	2	—	—	No	6000	ECL, PECL, LVPECL	0.06	—	16-lead LFCSP
ADCLK925	2.5 to 3.3	1	2	—	—	No	6000	ECL, PECL, LVPECL	0.06	—	16-lead LFCSP
ADCLK914	3.3	1	1	0	0	No	7500	HVDS, CML	0.110	—	16-lead LFCSP
ADCLK954	3.3	2	12	0	0	No	4800	LVPECL	0.075	—	40-lead LFCSP
ADCLK946	3.3	1	6	0	0	No	4800	LVPECL	0.075	—	24-lead LFCSP
ADCLK854	1.8	2	12	0	0	No	1200	LVDS, CMOS	0.150	—	48-lead LFCSP
ADCLK846	1.8	1	6	0	0	No	1200	LVDS, CMOS	0.150	—	24-lead LFCSP

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