



IMS2022 International Microwave Symposium
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About SuperApex

SuperApex Corporation is a RF/Microwave/Millimeter-wave company located in the suburb of Chicago, USA. We provide the innovative GaAs MMIC products, RF/Microwave/Millimeter-wave modules and chip packaging solutions and services for our customers around the world. We have completely proprietary intellectual property rights for all the product which we design and manufacture. SuperApex works with our customers from feasibility concepts through to new product introductions and supply. The company prides itself on working closely with its clients and developing long-term partnerships which offers success to all parties.

- ◆ Expertise in the design & development of components and subsystems in RF, Microwave and Millimeter wave markets
- ◆ DC-65 GHz: RF, microwave & mm-wave
- ◆ Technology: GaAs and GaN
- ◆ MMICs, packaging, modules, and sub-systems

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Catalog

1 Low Noise Amplifier	3
1.1 Broadband Low Noise Amplifier	3
1.2 General Low Noise Amplifier (f<8GHz)	3
1.3 General Low Noise Amplifier (f≥8GHz)	4
1.4 Broadband Distributed Amplifier	5
2 Power Amplifier	5
3 Drive Amplifier	6
4 Switch	7
5 Phase Shifter	8
6 Attenuator	9
7 Mixer	9
8 Power Divider	10
9 Multifunction Chip	11
10 Amplitude Equalizer	11
11 Power Detector	12
12 Transistor	12
13 Spiral Inductor	12
14 Module	13

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1 Low Noise Amplifier

1.1 Broadband Low Noise Amplifier

Model Number/Index	Freq (GHz)	Gain (dB)	Gain Flatness (dB)	Noise Figure (dB)	Input VSWR(:1)	Output VSWR(:1)	Output P ₁ dB (dBm)	Power Supply (V/mA)	Die or QFN
^{NEW} SAC4003Q3	0.0005~3	26	±1	1.2	2	2	20	5/130	QFN3x3
SAC3074QP3	0.02~1	29	±0.75	0.4	2	2	20	5/65	QFN3x3
SAC3055	0.01~2	22	±1.5	0.8	1.4	1.4	20	5/100	Bare die
SAC3055QP3	0.01~2	22	±1.5	0.8	1.4	1.4	20	5/100	QFN3x3
SAC3074	0.02~1	29	±0.75	0.4	2	2	20	5/65	Bare die
SAC3074Q3	0.02~1	29	±0.75	0.4	2	2	20	5/65	QFN3x3
SAC3050	0.02~6	20	±1	0.9	1.5	1.5	19	5/68	Bare die
SAC3050Q3	0.02~6	20	±1	1	1.5	1.5	19	5/68	QFN3x3
SAC3050QP3	0.02~6	20	±1	1	1.5	1.5	19	5/68	QFN3x3
SAC3081QP3	0.02~8	24	±1	1.3	1.5	1.5	13	5/55	QFN3x3
SAC3085QP3	0.02~8	18	±1.5	1.3	1.5	1.5	17	5/80	QFN3x3
SAC3002A	0.03~0.3	31	±0.1	0.7	1.4	1.4	20	5/75	Bare die
SAC3087QP3	0.03~3	24	±1	0.9	1.5	1.5	19	5/80	QFN3x3
SAC3089QP3	0.03~3.5	20	±1.3	0.9	1.5	1.5	17	5/35	QFN3x3
SAC3077Q3	0.05~6	14	±4	1.5	1.5	1.5	14	5/50	QFN3x3
SAC3008B	0.4~6	18	±1	1.2	1.5	1.5	17.5	5/58	Bare die
SAC3070	0.7~18	15	±2	2	1.85	1.85	10	5/50	Bare die
SAC3042	1.0~12.0	20.5	±0.9	2.3	1.3	1.6	16	5/60	Bare die
SAC3091QP3	1.5~8.5	27	±1	0.7	1.5	1.5	9	4/20	QFN3x3
SAC3042Q4	1~12	20.5	±0.9	2.3	1.3	1.6	16	5/60	QFN4x4
SAC3062	1~12	18	±2	1.6	1.4	1.4	15	5/60	Bare die
SAC3062Q3	1~12	18	±2	1.6	1.4	1.4	15	5/60	QFN3x3
SAC3080Q3	1~7	12	±1	2.5	1.5	1.5	15	5/60	QFN3x3
SAC3037	1~7	11	±0.4	3	1.6	1.6	18.2	8/60	Bare die
SAC3038	1~7	10.5	±0.6	3.4	1.5	1.5	17.5	8/67	Bare die
SAC3058	1~9	19	±1.5	1.1	1.5	1.5	19	5/65	Bare die
SAC3084QP3	2~8	27	±1	0.65	1.5	1.5	13	5/40	QFN3x3

1.2 General Low Noise Amplifier (f<8GHz)

Model Number/Index	Freq (GHz)	Gain (dB)	Gain Flatness (dB)	Noise Figure (dB)	Input VSWR(:1)	Output VSWR(:1)	Output P ₁ dB (dBm)	Power Supply (V/mA)	Die or QFN
SAC3003Q3	0.2~0.6	38	±0.3	0.8	1.6	1.6	17	5/75	QFN3x3
SAC3003	0.2~0.6	38	±0.15	0.8	1.6	1.6	17	5/75	Bare die
SAC3005Q3	0.4~0.6	35.5	±0.4	0.6	1.6	1.6	18	5/75	QFN3x3
SAC3005	0.4~0.6	35.5	±0.4	0.6	1.6	1.6	18	5/75	Bare die
SAC3059	0.4~0.6	35.5	±0.5	0.5	1.4	1.3	15	5/80	Bare die
SAC3053	0.4~1.5	21	±1.0	1.6	1.6	1.6	21	5/115	Bare die

Model Number/Index	Freq (GHz)	Gain (dB)	Gain Flatness (dB)	Noise Figure (dB)	Input VSWR(:1)	Output VSWR(:1)	Output P ₁ dB (dBm)	Power Supply (V/mA)	Die or QFN
SAC3054B	0.4~2.1	27	1	1.2	1.3	1.3	14	5/50	Bare die
SAC3054BQP3	0.4~2.1	27	±1	1.2	1.3	1.3	14	5/50	QFN3x3
SAC3057	0.4~3.6	28	±0.5	1	1.3	1.4	14	5/72	Bare die
NEW SAC4002Q3	0.5~4	20	±1	1	1.5	1.7	14@3V	3~5/35~80	QFN3x3
SAC3073	0.7~2.6	21	±1.5	1	1.8	1.5	18	5/75	Bare die
NEW SAC4000Q3	0.7~3.5	22	±1	0.5	1.8	1.5	15@3V	3~5/45~75	QFN3x3
SAC3063Q3	0.8~1.6	30	±1.5	0.4	1.6	1.6	12	5/50	QFN3x3
SAC3063QP3	0.8~1.6	30	±1.5	0.4	1.6	1.6	12	5/50	QFN3x3
NEW SAC3099Q3	0.8~2.5	36	±1	0.6	1.5	1.5	16	5/70	QFN3x3
SAC3013Q3	0.9~1.5	17	±1.1	0.7	1.5	1.5	12	5/40	QFN3x3
SAC3013	0.9~1.5	17	±1.1	0.7	1.5	1.5	12	5/40	Bare die
NEW SAC4001Q3	0.9~3	33	±1	0.4	1.5	1.5	16	5/55	QFN3x3
NEW SAC3098Q3	1~2	28	±1	0.5	1.8	1.5	5	5/13	QFN3x3
SAC3056	2~4	29	±0.5	0.5	1.4	1.4	9	5/30	Bare die
SAC3056B	2~4	30	±0.75	0.5	1.5	1.5	13	5/30	Bare die
SAC3056QP3	2~4	29	±1	0.5	1.6	1.6	12	5/30	QFN3x3
SAC3078QP3	2~6	26	±1	0.8	1.5	1.5	14	5/60	QFN3x3
SAC3076Q3	4.5~6	24	±1	0.8	1.5	1.5	11	5/60	QFN3x3

1.3 General Low Noise Amplifier ($f \geq 8\text{GHz}$)

Model Number/Index	Freq (GHz)	Gain (dB)	Gain Flatness (dB)	Noise Figure (dB)	Input VSWR (:1)	Output VSWR (:1)	Output P ₁ dB (dBm)	Power Supply (V/mA)	Die or QFN
NEW SAC3095QP3	2~8	23~28	±1	0.6	1.5	1.5	10@3V	3~5/25~45	QFN3x3
SAC3086QP3	10~13	18	±1	1.1	1.7	1.7	5	3/8; 4/11	QFN3x3
SAC3086IQP3 (Two LNAs)	10~13	18	±1	1.1	1.7	1.7	5	3/8; 4/11 (Every way)	QFN3x3
NEW SAC4004	11~26	18	±0.5	1.8	1.5	1.8	5.5	5/18	Bare die
SAC3088Q3	12~20	18	±1	1.3	1.5	1.5	7	5/15	QFN3x3
SAC3088I	14~18	18	±1	1.1	1.5	1.5	0	4/11	Bare die
SAC3088QP3	14~18	18	±1	1.3	1.5	1.5	0	4/8	QFN3x3
SAC3088IQP3 (Two LNAs)	14~18	18	±1	1.3	1.6	1.6	0	4/8 (Every way)	QFN3x3
NEW SAC3092	18~40	18	±1	2.5	1.7	2	12	5/100	Bare die
NEW SAC3093	18~40	18	±1	2.8	1.7	2	12	5/100	Bare die
NEW SAC3096QP3	2~8	30	±1	0.6	1.5	1.5	17	5/60	QFN3x3
NEW SAC4005	28~55	17	±1	4.5	2.5	1.7	13	5/115	Bare die
NEW SAC4006	28~55	15	±1	4.5	2.5	1.8	16	5/140	Bare die
SAC3043	6~18	22	±0.6	1.5	1.3	1.4	14	5/55	Bare die
SAC3043Q4	6~18	23.5	±1.5	1.5	1.3	1.3	15	5/55	QFN4x4
SAC3066	7~11	23	±1	1.1	1.5	1.5	18.5	5/29	Bare die
SAC3066Q3	7~11	21.5	±1.5	1.2	1.7	1.7	16	5/42	QFN3x3
NEW SAC3094QP3	7~13	22	±1	0.8	1.5	1.5	8@3V	3~5/20~40	QFN3x3

Model Number/Index	Freq (GHz)	Gain (dB)	Gain Flatness (dB)	Noise Figure (dB)	Input VSWR (:1)	Output VSWR (:1)	Output P _{1dB} (dBm)	Power Supply (V/mA)	Die or QFN
SAC3039	7~13	20	±0.8	1.35	1.4	1.4	14	5/35	Bare die
SAC3039Q3	7~13	20	±1.5	1.3	1.3	1.4	14	5/30	QFN3x3
SAC3083QP3	7~13	20	±1.5	1	1.5	1.5	11	5/25	QFN3x3
^{NEW} SAC3097	7~9	26	±1	0.6	1.5	1.5	17	5/60	Bare die
SAC3052	8~12	22	N/A	1.3	1.2	1.2	14	5/32	Bare die

1.4 Broadband Distributed Amplifier

Model Number/Index	Freq (GHz)	Gain (dB)	Gain Flatness (dB)	Noise Figure (dB)	Input VSWR (:1)	Output VSWR (:1)	Output P _{1dB} (dBm)	Power Supply (V/mA)	Die or QFN
SAC3045Q5	2~20	15.5	±1.0	3	1.25	1.4	14	5/60	QFN5x5
SAC3036	3.0~6.5	20	±1	2.8	1.4	1.3	15	5/60	Bare die
SAC3940	0.01~50	8	±1.5	6	1.6	1.5	13	8/100/-VG	Bare die
SAC3946	0.01~55	10	±1.5	6	1.6	1.5	15	8/115/-VG	Bare die
SAC3045	2~20	16	±1	3	1.3	1.3	14	5/60	Bare die
SAC3051	DC~22	16	±1	3	1.3	1.3	14	8/60/-VG	Bare die
SAC3051Q5	DC~22	16	±1	3	1.5	1.5	14	8/60/-VG	QFN5x5
SAC3064	DC~30	13	±2	4	1.5	1.3	23	8/220/-VG	Bare die
SAC3064Q5	DC~30	13	±2	4	1.6	1.4	23	8/220/-VG	QFN5x5

2 Power Amplifier

Model Number /Index	Freq (GHz)	Gain (dB)	Output P _{1dB} (dBm)	PAE(%)	Third-Order Intermodulation (dBc)	Power Supply (V/mA)	Die or QFN
^{NEW} SAC3133B	14~18	21	38	32	-25/(30dBm/Tone) @16GHz	8/3	Bare die
^{NEW} SAC3140A	27.5~31	24	39	24		6/5	Bare die
^{NEW} SAC3124A	33~37	24	35	24		6/2.5	Bare die
^{NEW} SAC3149	8.5~11	25	37.5	30	-25/(29dBm/Tone) @8.5GHz	8/2	Bare die
SAC3113	8.5~11	25	40.5	40		8/3	Bare die
SAC3116A	13.5~14.5	30	38	32		7/1.4~3	Bare die
SAC3127Q6	28~31	23	35.5	22		6/3	QFN6
SAC3143	8~10	21	24	32		7/3.5	Bare die
SAC3144	4.5~6	22	37	30		5/3.4	Bare die
SAC3145	2~6	21	30	29		8/0.45	Bare die
SAC3146	2~6	19	33	27		8/0.96	Bare die
SAC3142Q10	13.75~14.5	27	40.5	30		7/4	QFN10x10
SAC3142CR4	13.75~14.5	27	40.5	30		8/4	Carrier
SAC3147	6~8	20	39	30		8/3.5	Bare die
SAC3148	22~25	22	34	N/A		6/2	Bare die
SAC3125Q6	0.1~2	15	38	45		28/-VG	QFN6x6

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Model Number /Index	Freq (GHz)	Gain (dB)	Output P _{1dB} (dBm)	PAE(%)	Third-Order Intermodulation (dBc)	Power Supply (V/mA)	Die or QFN
SAC3122	0.001~3	25.5	30	40		12/-VG	Bare die
SAC3122QP4	0.001~3	25	30	40		12/-VG	QFN4x4
SAC3109Q6	5~6	34	35	40		8/-VG	QFN6x6
SAC3119	5.5~6	23	36	40		5/-VG	Bare die
SAC3113A	9~11	25	40.5	32	-24/(33dBm/Tone)	8/-VG	Bare die
SAC3116AQP6	13.75~14.75	30	38	32	-25/(30dBm/Tone)	7/-VG	QFN6x6
SAC3117AQP5	13.75~14.75	29	33	40	-24/(25dBm/Tone)	7/-VG	QFN5x5
SAC3138	14~18	18	31	30	-27/(26dBm/Tone) @16GHz	5/-VG	Bare die
SAC3126	18~26.5	23	32	22		6/-VG	Bare die
SAC3136	18~29	16	32	20		6/-VG	Bare die
SAC3127A	27.5~31	27	36	25	-25/(27dBm/Tone)	6/-VG	Bare die
SAC3127AQ6	27.5~31	27	35.5	22	-25/(27dBm/Tone)	6/-VG	QFN6x6
SAC3124	33.5~36.5	25	35	20		6/2.5	Bare die
SAC3129A	37~40	20	30	20		6/-VG	Bare die

3 Drive Amplifier

Model Number/Index	Freq (GHz)	Gain (dB)	Gain Flatness (dB)	Noise Figure (dB)	Input VSWR (:1)	Output VSWR (:1)	Output P _{1dB} (dBm)	Power Supply (V/mA)	Die or QFN
SAC3908Q3	0.1~4	15	±1	4	1.5	1.5	26.5@1GHz	5~8/100/-VG	QFN3x3
SAC3936QP3	0.1~6	16	±1	4.5	1.5	1.5	27(P _{3dB})	12/240	QFN3x3
SAC3903	0.9~1.3	36	±0.5	3.2	1.8	1.8	25.5	8/162	Bare die
SAC3908	0.1~4	14	±1	4	1.5	1.5	26	8/150	Bare die
SAC3937AQP4	0.03~3	16	±0.5	-	1.5	-	30	12/360	QFN4x4
SAC3906	3~10	18	±1	N/A	1.3	1.4	13	5/63	Bare die
SAC3913BQ4	7.9~9	24	±1	N/A	1.3	1.8	28	8/230	QFN4x4
SAC3916	12~18	22	±1.25	N/A	1.5	1.5	31	6/1000	Bare die
SAC3945A	18~45	15	±1.5	8	1.35	1.35	25	5/450	Bare die
^{NEW} SAC3952	26~45	15	±1.5	8	1.35	1.35	27	5/800	Bare die
SAC3947QP3	0.03~2	17	±0.75	1.7	1.6	1.6	27	8/270	QFN3x3
SAC3939Q4	0.03~6	16	1	N/A	N/A	N/A	27	12/160	QFN4x4
SAC3904Q3	7~12	24	1.5	5.5	N/A	N/A	17.5	5/68	QFN3x3
SAC3907	26~38	16	±1	N/A	1.7	1.4	26	6/450	Bare die
SAC3930Q3	0.05~1	12	±1	2.5	1.5	1.5	18	5/80	QFN3x3
SAC3928Q3	0.05~1.5	10	±1	3.5	1.5	1.5	17	5/80	QFN3x3
SAC3938QP3	0.05~6	10	±1	5.5	1.5	1.5	20	5~8/100	QFN3x3
SAC3901AQP3	0.9~1.3	20	±0.5	4	1.5	2.2	26	5/180	QFN3x3
SAC3934Q3	0.05~3	13	±0.75	3	1.75	1.75	28	8~12/200	QFN3x3
SAC3932QP3	0.05~6	15	±1.5	3	1.75	1.75	28	8~12/150	QFN3x3
SAC3933Q3	0.5~6	12	±1.5	2	1.75	1.75	18	5/80	QFN3x3

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Model Number/Index	Freq (GHz)	Gain (dB)	Gain Flatness (dB)	Noise Figure (dB)	Input VSWR (:1)	Output VSWR (:1)	Output P _{1dB} (dBm)	Power Supply (V/mA)	Die or QFN
SAC3918	2~10	18	N/A	5.5	1.4	1.2	19	5/80	Bare die
SAC3918Q3	2~10	18	±1.5	N/A	1.7	1.3	19	5/80	QFN3x3
SAC3913	8~13	19	±2	N/A	1.4	1.4	32.5	5~6/650	Bare die
SAC3913Q5	8~13	19	±2	N/A	2	1.7	32	5~6/650	QFN5x5
SAC3923	1~20	11	±1.2	3	1.6	1.3	28.5	10/330	Bare die
SAC3915	6~18	17	±0.75	5	1.5	1.5	20	6/80	Bare die
SAC3915Q3	6~18	18	±1	N/A	1.6	1.5	18	6/80	QFN3x3
SAC3917	6~18	16	±0.5	3.5	1.4	1.4	16	5/52	Bare die
SAC3916Q5	12~18	22	±1.2.5	N/A	1.5	N/A	31	6/1000	QFN5x5
SAC3914	14~18	19	±2	N/A	2	N/A	31	5~6/500	Bare die
SAC3914Q5	14~18	19	±2	N/A	2	N/A	31	5~6/500	QFN5x5
SAC3912	20~38	8	±0.75	5	1.3	1.3	18	4~6/100	Bare die
SAC3910	22~38	15	±0.75	6.5	1.6	1.6	24	5/250	Bare die
SAC3945A	18~45	15	±1.5	10	1.35	1.35	25	5/450	Bare die
SAC3911	24~40	12	±1	5	1.4	1.4	15	4/60	Bare die
SAC3925	26~38	16	±1	N/A	1.7	1.4	26	6/300	Bare die
SAC3935	42~47	18	±2	9	1.6	1.6	20	5/200	Bare die
^{NEW} SAC3953	54~58	18	±2	9	1.6	1.6	20	5/350	Bare die

4 Switch

Model Number/Index	Freq (GHz)	Switch Configuration	Insertion Loss (dB)	Isolation (dB)	Return Loss (dB)(ON)	Return Loss (dB)(OFF)	Input P _{1dB} (dBm)	Input IP ₃ (dBm)	Control Voltage(V)	Die or QFN
SAC3204S	DC~4	SPDT Non-Reflection	0.8	70	20	20	29	N/A	0/+3~+5	Bare die
SAC3208A	DC~12	SPST Reflection	0.8	50	15	N/A	N/A	N/A	0/+3.3~+5	Bare die
SAC3208AQ3	DC~12	SPST Reflection	0.9	60	18	18	N/A	N/A	0/+3.3~+5	QFN3x3
SAC3201AQ3	DC~20	SPDT Non-Reflection	1.8	50	20	N/A	30	48	0/-5	QFN3x3
SAC3209AQ3	DC~20	SPST Reflection	1	55	14	N/A	N/A	N/A	0/+3.3~+5	QFN3x3
SAC3229Q3	DC~12	SP3T Non-Reflection	1.5	50	-18	-20	20	N/A	0/+5	QFN3x3
SAC3218A	0.5~3	SPDT Non-Reflection	0.6	70	20	21	N/A	N/A	0/+5	Bare die
SAC3204SQ3	DC~4	SPDT Non-Reflection	-0.8	-70	N/A	N/A	29	49	0/+5	QFN3x3
SAC3204SQP3	DC~4	SPDT Non-Reflection	0.9	70	20	N/A	30	45	0/+3.3~+5	Plastic QFN3x3
SAC3204M	DC~4	SPDT Non-Reflection	0.8	70	20	20	29	N/A	0/+3.3~+5	Bare die
SAC3219A	1~4	SPDT Reflection	0.7	47	-15	N/A	N/A	N/A	0/+5	Bare die
SAC3214A	DC~8	SP3T Non-Reflection	1.5	50	18	N/A	20	N/A	0/+5	Bare die
SAC3215A	DC~8	SP3T Non-Reflection	1.5	50	18	N/A	20	N/A	0/+5	Bare die

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Model Number /Index	Freq (GHz)	Switch Configuration	Insertion Loss (dB)	Isolation (dB)	Return Loss (dB)(ON)	Return Loss (dB)(OFF)	Input P ₁ dB (dBm)	Input IP ₃ (dBm)	Control Voltage(V)	Die or QFN
SAC3202A	DC~12	SPDT Reflection	1.2	48	20	N/A	N/A	42	0/+3.3~+5	Bare die
SAC3202AQ3	DC~12	SPDT Reflection	1.2	48	-20	N/A	25	42	0/+3.3~+5	QFN3x3
SAC3203A	DC~12	SPDT Reflection	1.1	48	20	N/A	25	42	0/+3.3~+5	Bare die
SAC3203AQ3	DC~12	SPDT Reflection	1.2	48	-20	N/A	25	42	0/+3.3~+5	QFN3x3
SAC3216	DC~12	SPDT Non-Reflection	1.2	45	15	N/A	30	48	0/-5	Bare die
SAC3201A	DC~20	SPDT Non-Reflection	1.8	50	15	20	N/A	N/A	0/-5	Bare die
SAC3205	DC~20	SPDT Reflection	1.5	40	18	N/A	20	35	0/+5	Bare die
SAC3205Q3	DC~20	SPDT Reflection	1.5	40	16	N/A	20	35	0/+5	QFN3x3
SAC3205QP3	DC~20	SPDT Reflection	1.5	50	1.3	N/A	20	35	0/+5	Plastic QFN3x3
SAC3206	DC~20	SPDT Non-Reflection	2.3	45	15	N/A	30	48	0/+5	Bare die
SAC3206Q3	DC~20	SPDT Non-Reflection	2.3	45	20	N/A	30	48	0/+5	QFN3x3
SAC3209A	DC~20	SPST Reflection	1	55	15	N/A	N/A	N/A	0/+3.3~+5	Bare die
SAC3220	DC~20	SP4T Non-Reflection	2.5	50	15	N/A	N/A	N/A	0/+3.3~+5	Bare die
SAC3220Q3	DC~20	SP4T Non-Reflection	2.5	50	16	N/A	N/A	N/A	0/+3.3~+5	QFN3x3
SAC3227	0.01~4 0	SPDT Reflection	2.3	30 @40GHz	16	N/A	15 (P-0.2)	N/A	0/+3.3~+5	Bare die

5 Phase Shifter

Model Number/Index	Freq (GHz)	Resolution (bits)	Insertion Loss(dB)	Input VSWR (:1)	Output VSWR (:1)	Phase Accuracy (°)	RMS (°)	Control Voltage (V)	Die or QFN
SAC3301B	0.9~1.3	6	5.5	1.3	1.3	2	1.5	5	Bare die
SAC3302Q6	1.2~1.6	6	-5	1.3	1.3	-2.2~3	1.4	0/-5	QFN6x6
SAC3301	0.9~1.3	6	-5	1.3	1.3	-0.5~2	1	0/+5	Bare die
SAC3301A	0.9~1.3	6	-5.5	1.3	1.3	±2	1.5	0/+5	Bare die
SAC3301Q6	0.9~1.3	6	-5	1.2	1.2	-3~3	2	0/+5	QFN6x6
SAC3310	1.2~1.4	6	-4.8	1.3	1.4	-1.5~1.5	1	0/+5	Bare die
SAC3310Q6	1.2~1.4	6	-4.8	1.2	1.2	-1.5~1.5	1	0/+5	QFN6x6
SAC3302	1.2~1.6	6	-5	1.3	1.3	-2.2~3	1.4	0/-5	Bare die
SAC3311	1.2~1.6	6	-5	1.3	1.4	-1.5~2.5	1.5	0/+5	Bare die
SAC3315	1~2	6	-8	1.2	1.2	N/A	N/A	0/-5	Bare die
SAC3315Q6	1~2	6	-8	2	2	-5~5	2	0/+5	QFN6x6
SAC3303	2.2~2.6	6	-4.5	1.3	1.3	-1~1	0.8	0/+5	Bare die
SAC3303Q5	2.2~2.6	6	-4.8	1.3	1.3	-1~1	1	0/+5	QFN5x5
SAC3312	2.0~3.2	6	-8	1.4	1.4	-3~5	2	0/+5	Bare die
SAC3312Q6	2.0~3.2	6	-8	1.08	1.12	-8~8	3.5	0/+5	QFN6x6

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Model Number/Index	Freq (GHz)	Resolution (bits)	Insertion Loss(dB)	Input VSWR (:1)	Output VSWR (:1)	Phase Accuracy (°)	RMS (°)	Control Voltage (V)	Die or QFN
SAC3304	2.7~3.5	6	-5.2	1.6	1.4	-2~4.5	2	0/+5	Bare die
SAC3304Q6	2.7~3.5	6	-5.5	1.2	1.2	-3~3	2	0/+5	QFN6x6
SAC3305	2.7~3.5	6	-4.8	1.5	1.4	-2~4	2	0/-5	Bare die
SAC3305Q6	2.7~3.5	6	-5.5	1.2	1.2	-3~3	2	0/+5	QFN6x6
SAC3309	3.4~4.2	6	-5.5	1.5	1.5	-5~2.5	1	0/+5	Bare die
SAC3309Q6	3.4~4.2	6	-5.8	1.3	1.3	-5~2.5	1	0/+5	QFN6x6
SAC3307	8~12	6	-8	1.9	1.8	-4~5	2	0/+5	Bare die
SAC3307AQ6	8~12	6	-8	1.2	1.3	-4~4	N/A	0/-5	QFN6x6
SAC3316	6~18	6	-14	1.5	1.5	N/A	N/A	0/-5	Bare die
SAC3308	14~18	6	-10	1.7	1.5	-7~2	3	0/+5	Bare die
SAC3308Q6	14~18	6	-10	1.4	1.4	-4~4	2.5	0/+5	QFN6x6
SAC3323	32~38	6	-9	1.8	2	N/A	N/A	0/-5	Bare die

6 Attenuator

Model Number/Index	Freq (GHz)	Resolution (bits)	Insertion Loss (dB)	Input VSWR (:1)	Output VSWR (:1)	Attenuation Accuracy (dB)	RMS(dB)	Control Voltage (V)	Die or QFN
SAC3410	2~8		1.5	1.2	1.3			0/+5	Bare Die
SAC3402A	DC~6	6	-2.5	1.4	1.4	-0.3~1	0.8	0/+5	Bare die
SAC3402AQ4	DC~6	6	-2.8	1.4	1.4	-0.3~1	0.8	0/+3.3~5	QFN4x4
SAC3404	DC~12	2	-2.2	1.4	1.5	-0.5~1.5	1	0/+5	Bare die
SAC3406A	DC~12	6	-1.5	1.3	1.2	-0.6~1	0.5	0/+5	Bare die
SAC3406ASPQ4	DC~12	6	-1.8	1.3	1.2	-0.5~2	0.5	0/+5	QFN4x4
SAC3408	DC~12	6	-2.5	1.3	1.3	-2~2	0.6	0/+5	Bare die
SAC3408SPQ4	DC~12	6	-2.8	1.3	1.3	-1~3.5	1	0/+5	QFN4x4
SAC3409	DC~13	6	-2	1.3	1.3	N/A	N/A	0/-5	Bare die
SAC3403	8~12	6	-3.8	1.3	1.3	-0.5~1	0.5	0/+5	Bare die
SAC3408B	DC~20	6	3.8	-15	-15	±2	0.8	0/+5	Bare die

7 Mixer

Model Number/Index	Type	RF Freq (GHz)	LO Freq (GHz)	IF Freq (GHz)	Conversion Gain (dB)	LO-RF Isolation (dB)	LO-IF Isolation (dB)	RF-IF Isolation (dB)	LO Drive (dBm)	Output P. dB (dBm)	Power Supply (V/mA)	Die or QFN
SAC3507A	Double Balanced Mixer	0.9~3	0.9~3	DC~0.8	-8	-40	-30	N/A	0	11	5/32	Bare die
SAC3507AQ5	Double Balanced Mixer	0.9~3	0.9~3	DC~0.8	-8	-40	-20	-18	0	N/A	5/32	QFN5x5
SAC3501	Up Converter	2~3.5	2~3.5	DC~0.6	+8	-40	N/A	N/A	0	8	5/85	Bare die
SAC3502	Down Converter	2~3.5	2~3.5	0.01~0.6	+13	-45	N/A	N/A	0	4.5	5/85	Bare die
SAC3503	Down Converter	2~3.5	2~3.5	0.01~0.6	+13	-45	N/A	N/A	0	4.5	5/85	Bare die

Model Number /Index	Type	RF Freq (GHz)	LO Freq (GHz)	IF Freq (GHz)	Conversion Gain (dB)	LO-RF Isolation (dB)	LO-IF Isolation (dB)	RF-IF Isolation (dB)	LO Drive (dBm)	Output P. dB (dBm)	Power Supply (V/mA)	Die or QFN
SAC3508	Double Balanced Mixer	2~6	2~6	DC~2	-8	-25	-20	N/A	0	7.5	5/42	Bare die
SAC3508Q4	Double Balanced Mixer	2~6	2~6	DC~2	-8	-24	-24	N/A	0	11	5/42	QFN4x4
SAC3505	Double Balanced Mixer	3.5~9	3.5~9	DC~1	-9	-35	-21	-21	13	7	N/A	Bare die
SAC3515Q5	Double Balanced Mixer	3.5~9	3.5~9	DC~3	-8	-30	-30	-30	-4	N/A	N/A	QFN5x5
SAC3509	Double Balanced Mixer	5~10	5~10	DC~4	-8	-38	-35	-15	13	9.8	N/A	Bare die
SAC3511	Double Balanced Mixer	8~12	8~12	DC~3	+15	-50	-30	-40	0	N/A	N/A	Bare die
SAC3504	Double Balanced Mixer	7~14	7~14	DC~3	-8	-35	-27	-18	13	6	N/A	Bare die
SAC3510	Double Balanced Mixer	5~16	5~16	DC~6	-8.5	-38	-33	-16	13	12	N/A	Bare die
SAC3506	Double Balanced Mixer	11~20	11~20	DC~4	-8	-30	-27	-18	13	10	N/A	Bare die
SAC3514	Sub-harmonic Mixer	14~30	14~30	DC~6	-7	-45	-32	-32	13	N/A	N/A	Bare die
SAC3517	Double Balanced Mixer	14~32	4~20	DC~7	-12	-30	-32	-30	15	N/A	N/A	Bare die
SAC3513	Double Balanced Mixer	18~32	18~32	DC~10	-7.5	-40	-30	-35	13	N/A	N/A	Bare die
SAC3518	Double Balanced Mixer	18~36	9~16	DC~7	-13	-30	-15	-35	0	N/A	N/A	Bare die
SAC3516	Double Balanced Mixer	24~34	12~18	DC~4	-9	-35	-30	-25	4	16	N/A	Bare die
SAC3512	Double Balanced Mixer	24~40	24~40	DC~10	-8.5	-40	-30	-30	13	N/A	N/A	Bare die

8 Power Divider

Model Number/ Index	Freq (GHz)	Description	Insertion Loss(dB)	Amplitude Unbalance (dB)	Input VSWR (:1)	Output VSWR (:1)	Isolation (dB)	Die or QFN
SAC3804	8~12	0° Two-Way Divider	-0.8	±0.1	1.2	1.1	-31	Bare die
SAC3809Q4	1~18	0° Two-Way Divider	-1	±0.2	1.4	1.4	-20	QFN4x4
SAC3808	2~6	0° Two-Way Divider	-0.7	±0.07	1.4	1.3	-13	Bare die
SAC3809	1~18	0° Two-Way Divider	-1	±0.2	1.4	1.4	-20	Bare die
SAC3807	8~12	0° Two-Way Divider	-0.9	±0.05	1.3	1.3	-23	Bare die
SAC3811Q5	8~12	0° Four-Way Divider	-1.8	±0.1	(RFCVSWR) 1.3	(RF1/RF2/RF3/RF4VSWR)1.25	-35	QFN5x5
SAC3801A	2~20	0° Two-Way Divider	-1	±1	1.3	1.3	-20	Bare die
SAC3801AQ4	2~20	0° Two-Way Divider	-1	±0.25	1.4	1.4	-20	QFN4x4
SAC3802A	6~18	0° Three-Way Divider	-0.7	±0.2	1.3	1.2	-25	Bare die
SAC3803A	6~18	0° Three-Way Divider	-1	±0.2	1.3	1.2	-25	Bare die
SAC3803AQ4	6~18	0° Three-Way Divider	-1	0.4	1.5	1.5	-28	QFN4x4
SAC3805	18~26	0° Two-Way Divider	-0.9	N/A	1.8	1.2	-19	Bare die

9 Multifunction Chip

Model Number/Index	Freq (GHz)	Description	Gain (dB)	RMS of Phase Accuracy (°)	RMS of Attenuation Accuracy (dB)	Control Voltage (V)	Die Size (mm)	Die or QFN
SAC3602	1.98~2.3	Integrated 12-bit Model to parallel chip, amplifier, 6-bit phase shifter, 6-bit attenuator	16.5	1.5	0.5	0/+5	3.2×3.2×0.1	Bare die
SAC3601	2.7~3.1	Integrated 4-bit phase shifter and 2-bit attenuator	-3.5	0.8	0.08	0/+5	3.1×1.25×0.1	Bare die
SAC3603	5~6	Integrated switch, amplifier, 6-bit phase shifter, 6-bit attenuator	10.5	2.5	0.3	0/+5	5.0×3.5×0.1	Bare die
SAC3613	8~12	X-band Integrated phase shifter, attenuator	1.5	2.5	1	0/+5	5.0×3.5×0.1	Bare die

Model Number/Index	Conversion Gain (dB)	Description	Gain (dB)	RMS of Phase Accuracy (°)	RMS of Attenuation Accuracy (dB)	Control Voltage (V)	Die Size (mm)	Die or QFN
SAC3604	6	Integrated with RF bidirectional amplifier, LO driver amplifier, dual balanced mixer and switch	0.7~2.0	0.7~2.0	DC~1	0		Bare die
SAC3605	16	Integrated with RF bidirectional amplifiers, a LO drive amplifier, a double balanced mixer, switches, a low pass filter, and 3-bit digital controlled attenuators	2.5~5.0	2.5~5.0	0.65~1.5	0		Bare die
SAC3606	-8.5	Integrated switch, mixer and low-pass filter	8.0~12	10.8~14.8	2.8	-3		Bare die
SAC3606Q4	-9	Integrated switch, mixer and low-pass filter	8.0~12	10.8~14.8	2.8	-3		QFN4x4
SAC3607	5	Integrated switch, mixer, low pass filter, amplifier	8.0~12	10.8~14.8	2.8	3		Bare die
SAC3607Q5	4.5	Integrated switch, mixer, low pass filter, amplifier	8.0~12	10.8~14.8	2.8	3		QFN5x5

Model Number/Index	Freq (GHz)	Description	Gain (dB)	Output P _{1dB} (dBm)	Control level (V)	Working Current (mA)	Die Size (mm)	Die or QFN
SAC3608	2.0~4.0	Realization of switch transceiver and amplifier	25.5	16	5	80	2.5x2.1x0.1	Bare die
SAC3609	0.7~5.0	Realization of switch transceiver and amplifier	21.0	16	5	120	2.5x2.1x0.1	Bare die

10 Amplitude Equalizer

Model Number/Index	Freq (GHz)	Insertion Loss (dB)	Slope (dB)	Input VSWR (:1) (Typ.)	Output VSWR (:1) (Typ.)	Die or QFN
SAC3705	1~10	-0.8@10GHz	3	1.2	1.2	Bare die
SAC3704	0.5~6	-0.4@6GHz	2	1.2	1.2	Bare die
SAC3706	1~10	-0.8@10GHz	5	1.2	1.2	Bare die
SAC3702	1~20	-2.5@20GHz	4	1.2	1.2	Bare die
SAC3702Q3	1~20	-1.5@20GHz	4	1.4	1.4	QFN3x3
SAC3703	1~20	-2.8@20GHz	8	1.2	1.2	Bare die

Model Number/ Index	Freq(GHz)	Insertion Loss (dB)	Slope(dB)	Input VSWR (:1) (Typ.)	Output VSWR (:1) (Typ.)	Die or QFN
SAC3703Q3	1~20	-2@20GHz	9	1.4	1.4	QFN3x3
SAC3706Q3	1~20	1.5@20GHz	4	1.4	1.4	QFN3x3

11 Power Detector

Model Number /Index	Freq (GHz)	Flatness (dB)	Input VSWR (:1)	Dynamic Range (dB)	Rise Time (ns)	Fall Time (ns)	I _b (mA)	Die or QFN
SAC1001	DC~20	1	1.6	30	50	300	2.5	Bare die
SAC1001Q3E2	0.5~20	1	2	30	100	300	2.5	QFN3x3
SAC1003QP3	0.5~20	2	2	40	100	300	2.5	Plastic QFN3x3
SAC1003A	0.5~27	1	2	40	100	300	2.5	Bare die
SAC1002	1~40	1	2	30	50	300	2.0	Bare die
SAC1002Q3	1~40	2	2	30	50	300	2	QFN3x3
SAC1004	2~67	3	1.6	30	25	75	2	Bare die

12 Transistor

Model Number /Index	Freq (GHz)	Gain (dB)	Noise Figure (dB)	Output P _{-1dB} (dBm)	Output IP ₃ (dBm)	Die or QFN
SAC2501	0.1~8	28	0.5	24	33	Bare die
SAC2502	0.1~8	21	0.8	17	33	Bare die
SAC2503	0.1~40	10	1.5	13	22	Bare die
SAC2504	0.1~40	12	1.8	13	22	Bare die

13 Spiral Inductor

Model Number/ Index	Turns	(nH)(typ.)	Rs@DC (Ohm)	Rs@GHz (Ohm)	Q@GHz	Resonant Freq (GHz)	Chip Size (mm×mm)
SAC6005A	3.5	5	1	3.7@4.0	26.5@4.0	16.5	0.75x0.75x0.2
SAC6007P5A	4.5	7.5	1.3	6.0@4.0	27.0@4.0	12.8	0.80x0.80x0.2
SAC6010A	5.5	10	1.6	8.0@4.0	26.0@4.0	11.3	0.80x0.80x0.2
SAC6015A	6.5	15	2.1	5.6@4.0	26.5@4.0	8.5	0.80x0.80x0.2
SAC6020A	7.5	20	2.6	7.5@2.0	28.5@2.0	7.0	0.80x0.80x0.2
SAC6050A	9.5	50	5.1	10.6@1.0	28.5@1.5	2.8	0.95x0.95x0.2
SAC6090A	12.5	90	8	26.3@1.0	26.5@1.0	1.8	1.10x1.10x0.2
SAC6200A	17.5	200	14	30.0@1.0	23.0@1.0	1.0	1.37x1.37x0.2

14 Module

Model Number/ Index	Type	Freq (GHz)	Gain (dB)	Gain Flatness (dB)	Noise Figure (dB)	Input Return Loss (dB)	Output Return Loss (dB)	Output P-1dB (dBm)	Reverse Isolation (dB)	Power Supply (V/A)	Size (mm)
SAC1103	DA	26~40	11	±1.5		10	-10	15		5/0.1	35×19.1×19.1
SAC1104	DA	28~32	25	±1.5		-10	-10	28		6/0.8	37×23×19.1
SAC1105	DA	33~38	25	±1.5		-10	-10	26		6/0.8	37×23×19.1
SAC1121	PA	27.5~31	25	±1.5		-10	-15	40.5		6.3/14	
SAC1123	PA	34~36	24			-15	-13	40		6.3/11	
SAC1125	PA	9~11	23			-13	-12	42.5 (P-3dB)		15/5.5	
SAC1127	PA	13.5~14.75	23			-14	-14	47.5		8.5/25	
SAC1128	DA	26~40	25			-10	-10	25		8/0.35	
SAC1129	PA	28~30	30			-14	-5	32.5		6/1.4	
SAC1130	LNA	0.03~0.45	30		0.6	-10	-15	40.5 (P-3dB)		28/0.3	25.4×34×5.5
SAC1131	LNA	0.35~0.7	36			-15	-13	12			17.8×20×8.35
SAC1132	LNA	0.7~1.4	33			-15	-13	18	-55		54×30×8
SAC1133	LNA	1.7~2.7	32			-14	-14	10			17.8×20×8.35
SAC1134	LNA	2~8	32			-14	-11	12		12/110	17.8×20×10
SAC1135	LNA	1.2~3.4	34		0.9	-14	-14	17			17.8×20×8.35
SAC1136	LNA	0.9~2	15		0.7	-14	-15	10			17.8×20×8.35
SAC1137	LNA	2.4~2.5	27.5			-14	-13	12	-55		
SAC1140	LNA	0.01~2	23		0.8	-14	-13	8	-45		
SAC1145	PA	0.7~1.3	31	±1.5		-14	-14	15	-28		54×30×8
SAC1148	PA	5.4~5.8	18	±1.5				36		8~28/2	52.9×32×10
SAC1149	LNA	2~4	30		0.8	-14	-13	10			17.8×20×8.35
SAC1150	PA	9~11	22.5			-14	-14	45 (P-3dB)		16/8.5	200×105×41.4
SAC1151	DA	0.1~20	28	±1.0		-14	-15	10		12/0.15	40×20×9
SAC1154	DA	0.1~20	46	±1.5		-15	-15	10		12/0.23	40×20×9
SAC1155	PA	0.7~1.5	32	±1.0		-15	-14	11	-53		54×30×8
SAC1156	LNA	2~8.5	27		1	-14	-13	12		12/110	17.8×20×10
SAC1157	LNA	2~4	28		0.6	-13	-11	36		8/1.5	25.4×34×5.5
SAC1157-R	LNA	2~4	28		0.6	-15	-14	13			17.8×20×8.35
SAC1158	LNA	0.8~1.6	32		0.5	-15	-14	10			17.8×20×8.35
SAC1159-R	LNA	2~4	55		45°K	-15	-14	13			17.8×20×8.35
SAC1160	LNA	1~12	16		2	-14	-15	19		8/86	17.8×20×10
SAC1160-R	LNA	1~12	16		2	-14	-11	39		22/1.1	
SAC1161	LNA	0.4~6	17		1.2	-14	-12	14		12/0.12	17.8×20×8.35
SAC1163-R	LNA	0.8~1.6	60		40°K	-14	-15	10			17.8×20×8.35
SAC1166	PA	5.4~5.8	36	±1.5		-13	-14	11		12/110	17.8×20×10
SAC1167	PA	13.75~14.5	26	±2.0		-14	-10	35.5		7/1.1	25.4×34×5.5

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SAC1168	LNA	0.0007~0.5	37		1.2	-11	-15	13			17.8×20×8.35
SAC1173	PA	22~26	29			-10	-8	32		13.5/2	52.9×32×10
SAC1174	PA	22~26	28			-14	-14	35		13.5/2	80×60×17
SAC1176	LNA	6~18	38	±1.5	2	-12	-13	18	-45		54×30×8
SAC1179	PA	27.5~30	23	±1	6			34.5			40×40×10
SAC1191	LNA	0.5~4	25dB @0.5GHz 35dB @4GHz					31.5			
SAC1192	LNA	0.5~4	35dB @0.5GHz 45dB @4GHz		0.9			12			
SAC1197	LNA	26.5~40	38	±1.0	3.3			13			45×22.4×22.4
SAC1198	LNA	18~26.5	38	±1.0	2.9			13			40×22.4×22.4
SAC1202	PA	0.9~1.6	39	±1.5		-14	-14	20	-25		54×30×8
SAC1203	PA	2.4~2.5	21	±1.5				40			52.9×32×10
SAC1210	LNA	5~6	28~35	±1.0	1			10			
SAC1215A	LNA	8~10	36~47	±1.0	2.3			15			
SAC1216A	LNA	9~10	9~13	±0.5	2			11			
SAC1217	LNA	8.5~10.5	37~45	±1.0	1.5			15			
SAC1224	LNA	0.02~6	15~25	±1.5	1			17			
SAC1226	LNA	4.61~5.01	27~35	±1.0	1			14			
SAC1227	LNA	2.2~2.5	39~47	±1.0	0.45						
SAC1230	PA	2~6	40~45	±2.5							
SAC1231	LNA	2~18	32	±1.0	2	-14	-9	36	N/A	2/28	52.9×32×10
SAC1232	LNA	18~26.5	29	±1.0	2	-11	-10	7			48.8×26.9×15.4
SAC1233	LNA	26~40	30	±1.5	2.2	-11	-13	18	-45		
SAC1234	LNA	4~18	30~35	±2.0	2.5			10			
SAC1235	LNA	37.5~40.5	40	±1.0	2.7			11			
SAC1236	LNA	1.315~1.515	29~35	±1.0	0.4			14			
SAC1237	PA	1.1~1.6	39	±1.5				38			52.9×32×10
SAC1238	LNA	4.4~5	40~46	±1.0	0.7			18			
SAC1239	PA	2.4~2.5	21	±1.5				40			52.9×32×10
SAC1241	LNA	0.1~6	12~16	±1.5	2.5			15			
SAC1242	LNA	0.1~6	18~21	±1.5	1			15			
SAC1243	LNA	9.3~9.6	20~27	±1.5							
SAC1249	DA	0.9~8	25~33	±1.5	2			29		12~28/1	
SAC1251	PA	1~2	40					30			
SAC1252	LNA	5.4~5.9	28	±0.5	0.8	-14	-15	36		8/1.2	25.4×34×5.5
SAC1253	LNA	0.45~0.55	46		0.8					12/0.21	
SAC1254	LNA	12~18	20	1.5						5/0.065	

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SAC1256	PA	14.5~15.5	20~27	±1.0				38			
SAC1258	LNA	0.05~1.5	30~36	±1.0	1			16		5/0.18	
SAC1259	DA	0.05~1.5	30~36	±1.5	4			30		18~28/0.3	
SAC1260	PA	2.7~3.3	30~33	±1.5						12~15/1.5	
SAC1261	LNA	10~18	30~35	±2.0	2			25		12~15/0.4	
SAC1262	LNA	24~30	30~35	±2.0	2			25		12~15/0.4~0.45	
SAC1264	LNA	0.4~5	39~47	±1.5	1			27		12/0.3	
SAC1266	PA	1~2.5	30~36	±1.5	5			33		14~16/0.6	
SAC1270	LNA	5~7	27~35	±1.0	1			10		8~15/0.15	
SAC1273	SPST	1~6								+5V@65mA -5V@20mA	
SAC1274	SP16T	1~6								5V@600m -15V@150mA	
SAC1276	PA	9~12.5	25~36	±1.5				33		12~15/2	
SAC1277	LNA	4.4~5	40~50	±1.5	0.6			11		12~15 /0.12	
SAC1278	LNA	18~40	29~35	±2.0	4			10		12~15 /0.21	
SAC1281	LNA	2~18	10~15	±1.5	4.5			10		12~15 /0.06	
SAC1282	LNA	2~18	30	±2.0	2			19			
SAC1283	LNA	2~18	25	±2.0	6.5			27		14~17 /0.45	
SAC1284	LNA	0.7~2.7	22~30	±1.0	2.5			25		12/0.2	
SAC1285	LNA	0.7~2.7	27~35	±1.0	2.5			15		12/0.12	
SAC1288	LNA	1~6	27~35	±1.0	1.5			24		8/0.2	
SAC1290	LNA	0.02~2	30	±2.0	2			15		8~18/0.18	
SAC1291	LNA	8.9~9.5	22~26	±0.75	1			12		8~12/0.1	
SAC1293	PA	2~4	25~36	±1.5				30		18~32/1	
SAC1294	LNA	0.4~0.9	24~30	±1.0	1			16		8~15/0.12	
SAC1295	PA	14~16	30~37	±1.5				33		18~32/1	
SAC1296	DA	13.2~16	15~25	±1.0	1.5			22		15/0.2	
SAC1297	LNA	0.5~10	45	±2.0	4			24		14~17 /0.45	
SAC1299	LNA	2~6	25~32	±1.0	1.2			20		10~15 /0.15	
SAC1300	LNA	8~8.5			1			5	-55	12/0.6	
SAC1301	LNA	1.558~1.592	45~55	±0.5	1.5			15		12~15 /0.11	
SAC1308	LNA	0.01~0.6	25~31.5	±1.0	0.5			19		12~15 /0.13	
SAC1309	LNA	22~31	28~35	±2.0	2.5			10		12~15 /0.13	
SAC1310	DA	2~40	30	±0.75	6			10		12/0.4	
SAC1311	LNA	0.8~3	30~36	±1.0	1			10		7~15/0.2	
SAC1312	LNA	0.05~10	14~21	±1.5	1.5			10		8~12/0.15	
SAC1313	LNA	8~12	30~45	±1.5	1			10		8~15/0.1	
SAC1314	DA	18~40	30~40	±1.5	7.5					8~15/0.65	

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SAC1318	LNA	0.9~1.2	28~33.5	±0.5	0.5			13		8~15/0.08	
SAC1319	LNA	0.95~2.15		±0.5	1.5			17		12/0.1	
SAC1321	LNA	1.56542~1.58542	40~48	±1.0	1.5			15		8~15/0.15	
SAC1322	PA	4~6	30~37	±1.5				35		12~15/2.5	
SAC1323	LNA	0.05~0.15	24~30	±0.5	0.5			22		12~15 /0.17	
SAC1324	LNA	0.5~5	58~63	±1.75	2.5					12~15 /0.27	
SAC1326	LNA	6~18	45~50	±3.0	2			29		12~15 /0.95	
SAC1327	LNA	0.0001~1	47~60	±1.5	2			14		12~15 /0.23	
SAC1328	LNA	1.69~1.71	39~48	±1.0	0.6			14		24/0.17	
SAC1329	LNA	10~20	25~30	±2.0	3.5			20		10~15 /0.26	
SAC1330	LNA	6~18	39~42	±3.0	2			29		12~15 /0.95	
SAC1331	LNA	1~10	15	±2.0	1.5			25		14~17 /0.35	
SAC1332	LNA	8~12	30~35	±1.5	4			31		12~18/1	
SAC1333	LNA	8~14	18~25	±1.5	6						
SAC1334	LNA	8~13	28~35	±1.5	2.5			14		8~18/0.14	
SAC1335	LNA	6~18	30~38	±2.0	2			22		8~16/0.4	
SAC1336	LNA	2~4	22~26	±1.5	1.8			5		12~16/0.1	
SAC1337	LNA	1.1~1.8	28~36	±1.0	0.7			10		12~16/0.1	
SAC1338	PA	8.5~9.5	15~22	±1.5				41.5		-VSS:5/0.1 +VDD:8.5/8	
SAC1339	LNA	0.1~3	20~30	±1.0	1.2			18		8~15/0.12	
SAC1340	LNA	6~20	20	±2.0	3			28			
SAC1247	LNA	6~18	30dB @6GHz 40dB @18GHz					18		15/0.4	
SAC1248	LNA	0.4~6	30dB @0.4GHz 40dB @6GHz					20		15/0.25	
SAC1142	DA	0.1~30	25	±1	4.5			20	-55		

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