

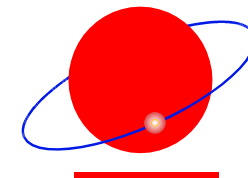


电子元器件系列(中国.厦门) China.Xiamen
www.rf-china.com RF-Micom co.,Ltd

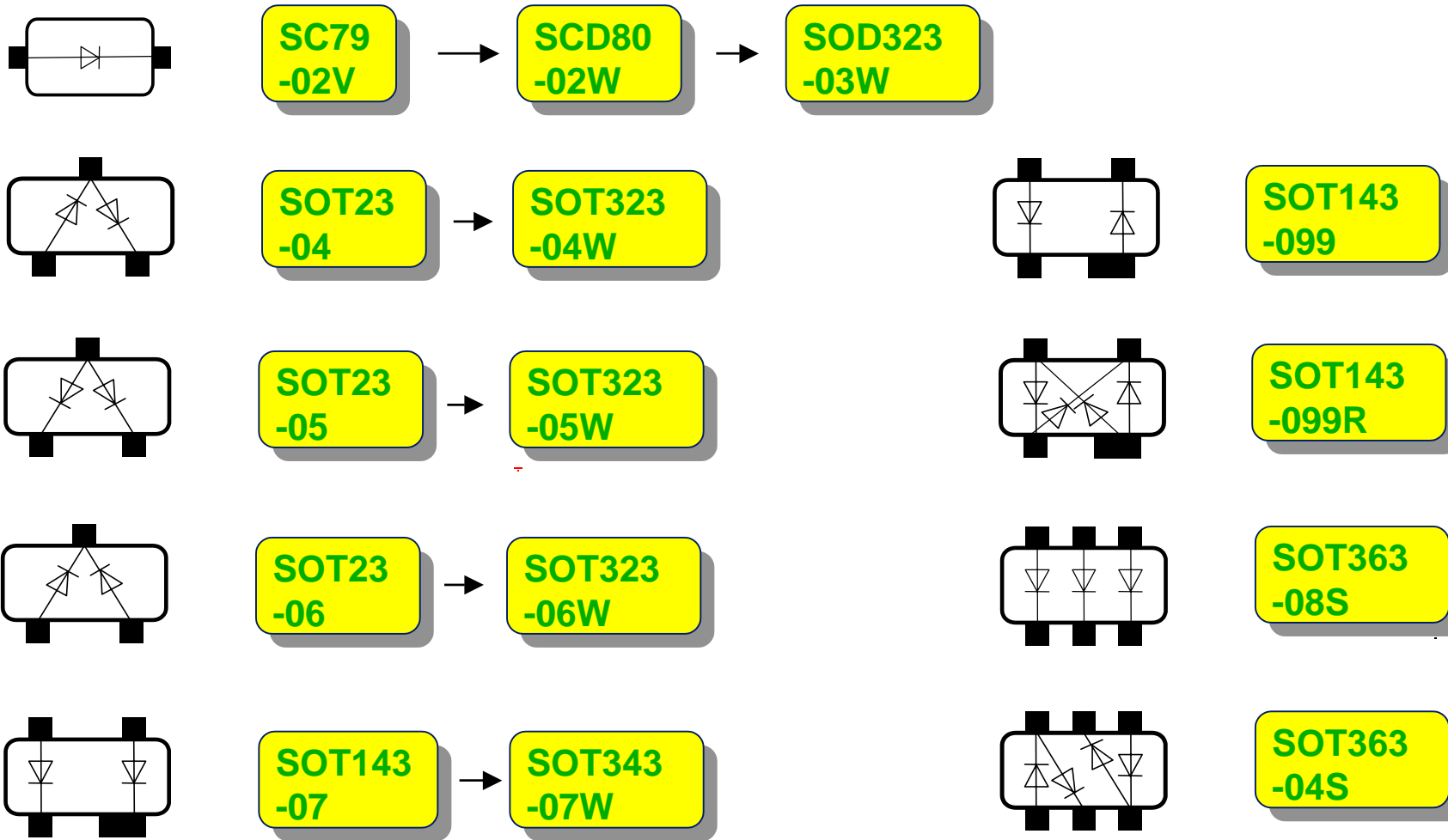
Email:sales@rf-china.com

Telephone:0086-592-5713956 Fax:5201617

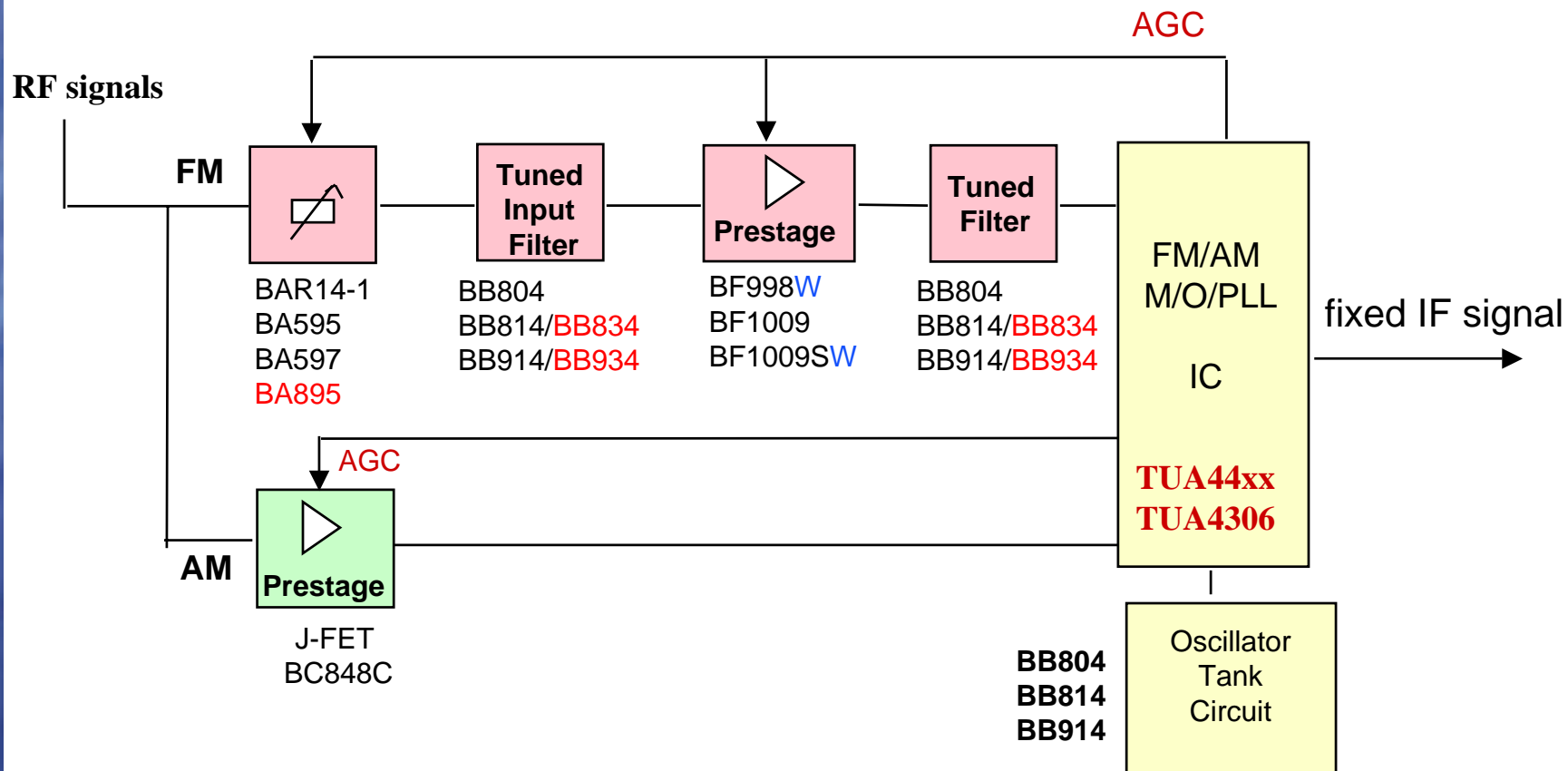
RF Discretes, IC & MMIC



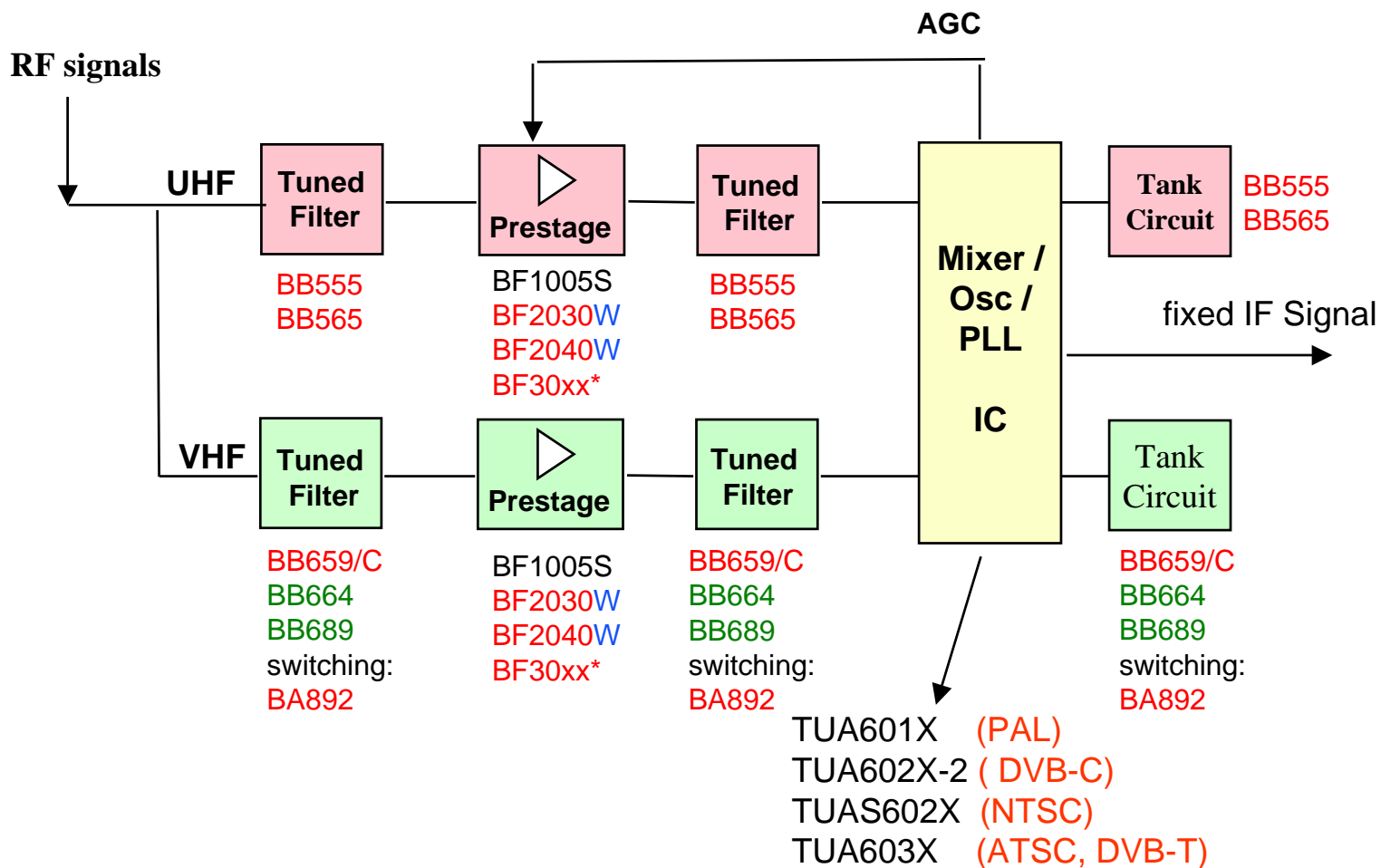
Packages & Configurations, Diodes



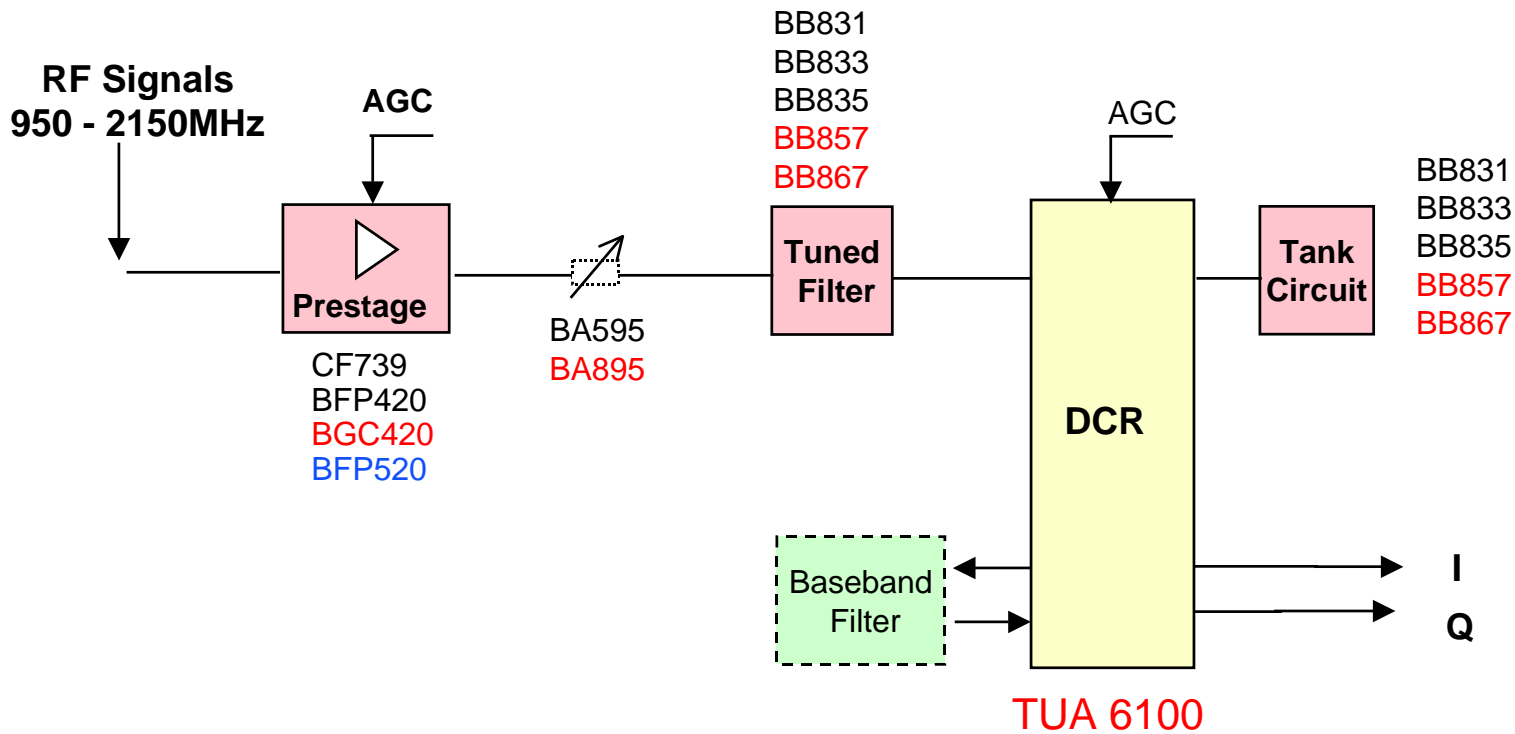
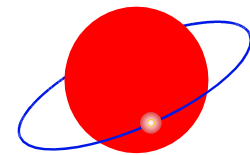
FM / AM Tuner



Cable & Terrestrial

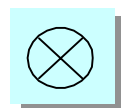
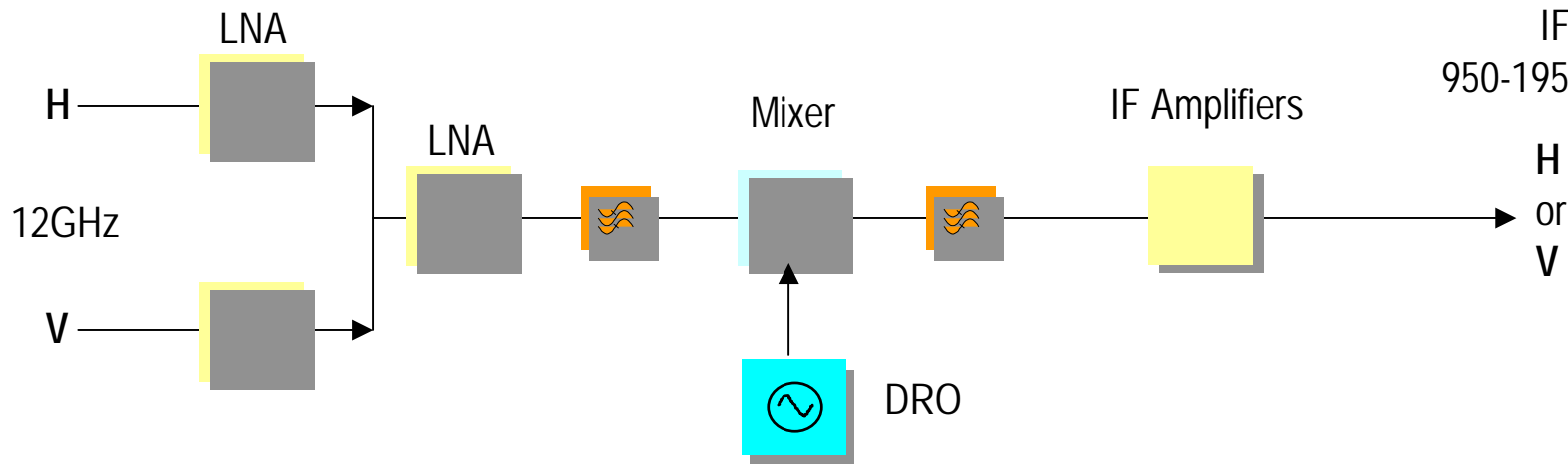


SAT Tuner



LNB

FINE • ON Ltd.
IF
950-1950MHz



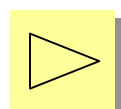
Mixer

passive: BAT15-099(R) / BAT15-04 / BAT15-04W
active: BFP540 / BFP620/640 / BGB540



DRO

BFP540F / BFP620 / BFP640 / BFP650



IF Amplifier

discrete: BFP540F / BGB 540
MMIC: BGA430 + (BFR360F / BFP540 / BGB540)
BGA612, 614, 616; BGA530 eval.

CDMA / GSM / Cordless

Ant. S/W & matching

PIN Diodes
 BA892 ...
 BAR63 ...
 BAR64 ...
 BAR65 ...
 BAR80 ...
 BAR81 ...

Low Noise Amplifier

BFP420 BGA420 / 427
 BFP540 BGC405 / 420
 BFP620 BGB420

Buffer

BGA435
 BGA420
 BFP420
 BFR92 ...
 BFR93A ...

VCO

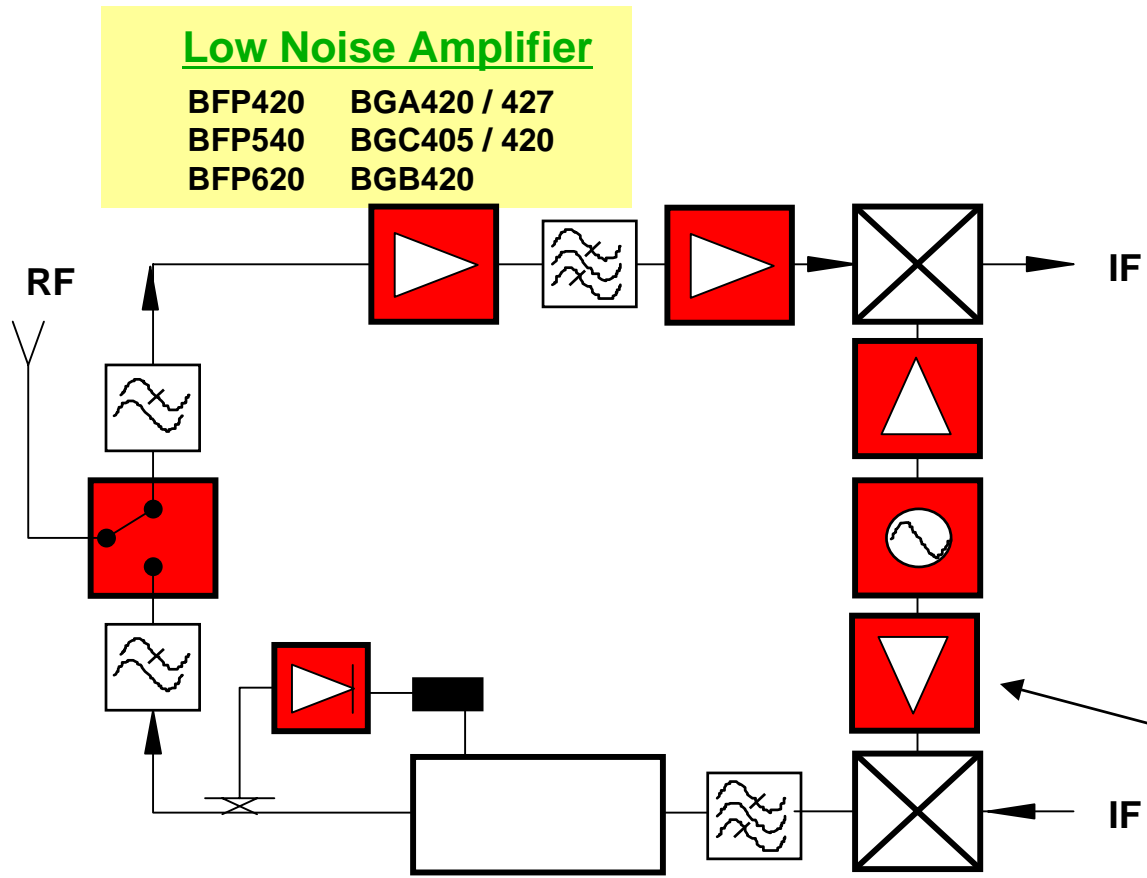
BB555 ...
 BB659 ...
 BB857 ...
 BBY5x - series

BFP405/420
 BFR106

Power Detection
 Schottky Diodes
 BAT68 ... BAT62 ... BAS70 ...

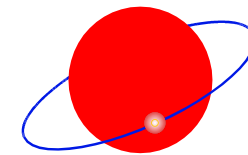
Driver Amplifier

BFP450 BFP540 BFR193 ...



Type		Package	r_f $I_F = 10 \mu\text{A}$ $f = 100 \text{ MHz}$	r_f $I_F = 10 \text{ mA}$ $f = 100 \text{ MHz}$	C_T $V_R = 0 \text{ V}$ $f = 100 \text{ MHz}$	τ_L $I_F = 10 \text{ mA}$
BAR14-1/15-1/16-1 BAR60 BAR61	double triple triple	SOT23 SOT143 SOT143	2.5k Ω	8 Ω	0.2 pF	1 μs
BAR50-02W BAR50-03W BAR50-05	single single double	SCD80 SOD323 SOT23	25 Ω (0.5mA)	3 Ω	0.2 pF	1.1 μs
BA597	single	SOD323	2.3k Ω	4.5 Ω	0.32 pF	2.3 μs
BA595 BA885	single single	SOD323 SOT23	1.5k Ω	4.5 Ω	0.23 pF	1.4 μs
BAR64-02W BAR64-03W BAR64-04/-05/-06 BAR64-04/05/06W BAR64-07 BAR64-04S	single single double double double quad	SCD80 SOD323 SOT23 SOT323 SOT143 SOT363	600 Ω	2 Ω	0.3 pF	1.4 μs
BAR66 BAR67-02W BAR67-03W	double single single	SOT23 SCD80 SOD323	85 Ω	1 Ω	0.35 pF	700 ns

PIN-Diodes -cont.

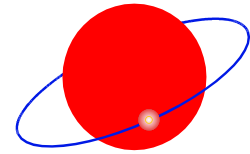


Type		Package	r_f $I_F = 10 \mu\text{A}$ $f = 100 \text{ MHz}$	r_f $I_F = 10 \text{ mA}$ $f = 100 \text{ MHz}$	C_T $V_R = 0 \text{ V}$ $f = 100 \text{ MHz}$	τ_L $I_F = 10 \text{ mA}$
BAR63-02W	single	SCD80	70 Ω	1 Ω	0.3 pF	100 ns
BAR63-03W	single	SOD323				
BAR63-04/-05/-06	double	SOT23				
BAR63-04/05/06W	double	SOT323				
BAR63-04S	quad	SOT363				
BAR65-02W	single	SCD80	6 Ω	0.56 Ω	0.6 pF	80 ns
BAR65-03W	single	SOD323				
BAR65-07	double	SOT143				
BAR81	shunt	MW4				
BAR81W	shunt	SOT343				
BA592	single	SOD323	10 Ω	0.4 Ω	1.2 pF	120 ns
BA892	single	SCD80				
BAT18-04/-05/-06	double	SOT23				
BAT18-04S	quad	SOT363				
BAR80	shunt	MW4				

PIN Diodes for High IP3 Ant.Switch

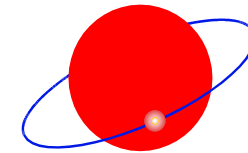
Type		Package	r_f $I_F = 10 \mu\text{A}$ $f = 100 \text{ MHz}$	r_f $I_F = 10 \text{ mA}$ $f = 100 \text{ MHz}$	C_T $V_R = 0 \text{ V}$ $f = 100 \text{ MHz}$	τ_L $I_F = 10 \text{ mA}$ $I_R = 6 / 3 \text{ mA}$	3 rd harmonic suppression $P_{in} +35\text{dBm}$ $F_{in} 900\text{MHz}$ $I_F 4\text{mA}$
BAR67-02W BAR67-03W	single single	SCD80 SOD323	85 Ω	1 Ω	0.35 pF	700 ns	-87dBc
BAR63-02W BAR63-04/05/06W BAR63-04S	single double quad	SCD80 SOT323 SOT363	70 Ω	1 Ω	0.3 pF	100 ns	-45dBc
BAR65-02W BAR81W	single shunt	SCD80 SOT343	6 Ω	0.56 Ω	0.6 pF	80 ns	Not measured
BAR64-02W BAR64-04/05/06W BAR64-04S	single double quad	SCD80 SOT323 SOT363	600 Ω	2 Ω	0.3 pF	1.4 μs	-95dBc
BAR50-02W BAR50-03W BAR50-05	single single double	SCD80 SOD323 SOT23	25 Ω (0,5mA)	3 Ω	0.2 pF	1.1 μs	-67dBc

Schottky-Diodes



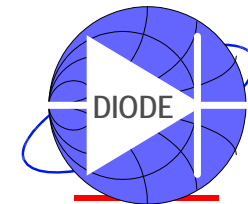
Type		Package	$I_{F \max}$	$U_F (I_F=1\text{mA})$	$C_T (V_R=0)$	Schottky Barrier
BAT62-02W BAT62-07W BAT62-08S	Single Double Triple	SCD80 SOT343 SOT363	20 mA	440 mV	0.35 pF	Low
BAT17W BAT17-04W/05W/06W	Single Double	SOT323 SOT323	130 mA	275 mV	0.55 pF	Medium
BAT14-03W BAT14-099R	Single Cross ring	SOD323 SOT143	90 mA	430 mV	0.22 pF	Medium
BAT15-03W BAT15-04W/05W BAT15-099 BAT15-099R	Single Double Double Cross ring	SOD323 SOT143 SOT143 SOT143	100 mA	230 mV	< 0.35 pF	Low
BAT114-099 BAT114-099R	Double Cross ring	SOT143 SOT143	90 mA	600 mV	0.25 pF	High
BAT68W BAT68-04W/05W/06W BAT68-07W BAT68-08S	Single Double Double Triple	SOT323 SOT323 SOT343 SOT363	130 mA	318 mV	1 pF	Medium
BAS125W BAS125-04W/05W/06W BAS125-07W	Single Double Double	SOT323 SOT323 SOT343	100 mA	385 mV	1.1 pF	Medium

Schottky Diodes



Type	Package	I_{fmax}	$U_f @1mA$	$C_T @0V$	Schottky Barrier
BAT14-03W	SOD323	90 mA	430 mV	0.22 pF	Medium
BAT15-03W	SOD323	100 mA	230 mV	0.35 pF	Low
BAT15-04W/-05W	SOT323				
BAT17-04W /-05W/-06W	SOT323	130 mA	340 mV	0.55 pF	Medium
BAT62-02W	SCD80	20 mA	440 mV	0.35 pF	Low
BAT62-07W	SOT343				
BAT62-08S	SOT363				
BAT63-07W	SOT343	100 mA	190 mV	0.65 pF	Low
BAT68-04W /-05W/-06W	SOT323	130 mA	320 mV	1 pF	Medium
BAT68-07W	SOT343				
BAT68-08S	SOT363				
BAS140W	SOD323	120 mA	310 mV	3 pF	Medium
BAS40-04W /-05W/-06W	SOT323				
BAS40-07W	SOT343				
BAS170W	SOD323	70 mA	375 mV	1.5 pF	Medium
BAS70-04W /-05W/-06W	SOT323				
BAS70-07W	SOT343				
BAS125-04W /-05W/-06W	SOT323	100 mA	385 mV	1.1 pF	Medium
BAS125-07W	SOT343				

Varactor Diodes, VCO



Type		Package	C _{T1}	C _{T2}	C _{T1} /C _{T2}	r _s (V _R =1V)
BBY55-02W	Single	SCD80	24pF@0,3V	12,5pF@3V	1,9	0,15 Ω
BBY55-03W	Single	SOD323				
BBY55-05W	Double	SOT323				
BBY56-02W	Single	SCD80	66pF@0,3V	16,5pF@3V	4,0	0,30 Ω
BBY56-03W	Single	SOD323				
BBY57-02W	Single	SCD80	25pF@0,3V	6,8pF@3V	3,7	0,30 Ω
BBY57-03W	Single	SOD323				
BBY57-05W	Double	SOT323				
BBY58-02W	Single	SCD80	26pF@0,3V	8,5pF@3V	3,1	0,25 Ω
BBY58-03W	Single	SOD323				
BBY58-05W	Double	SOT323				
BBY58-06W	Double	SOT323				
BBY59-02W	Single	SCD80	28pF@1V	6,8pF@4V	4,1	0,5 Ω
BBY66-02W	Single	SCD80	70pF@1V	12,7pF@4,5V	5,5	0,25 Ω
BBY66-03W	Single	SOD323				
BBY66-05	Double	SOT23				
BBY66-05W	Double	SOT323				

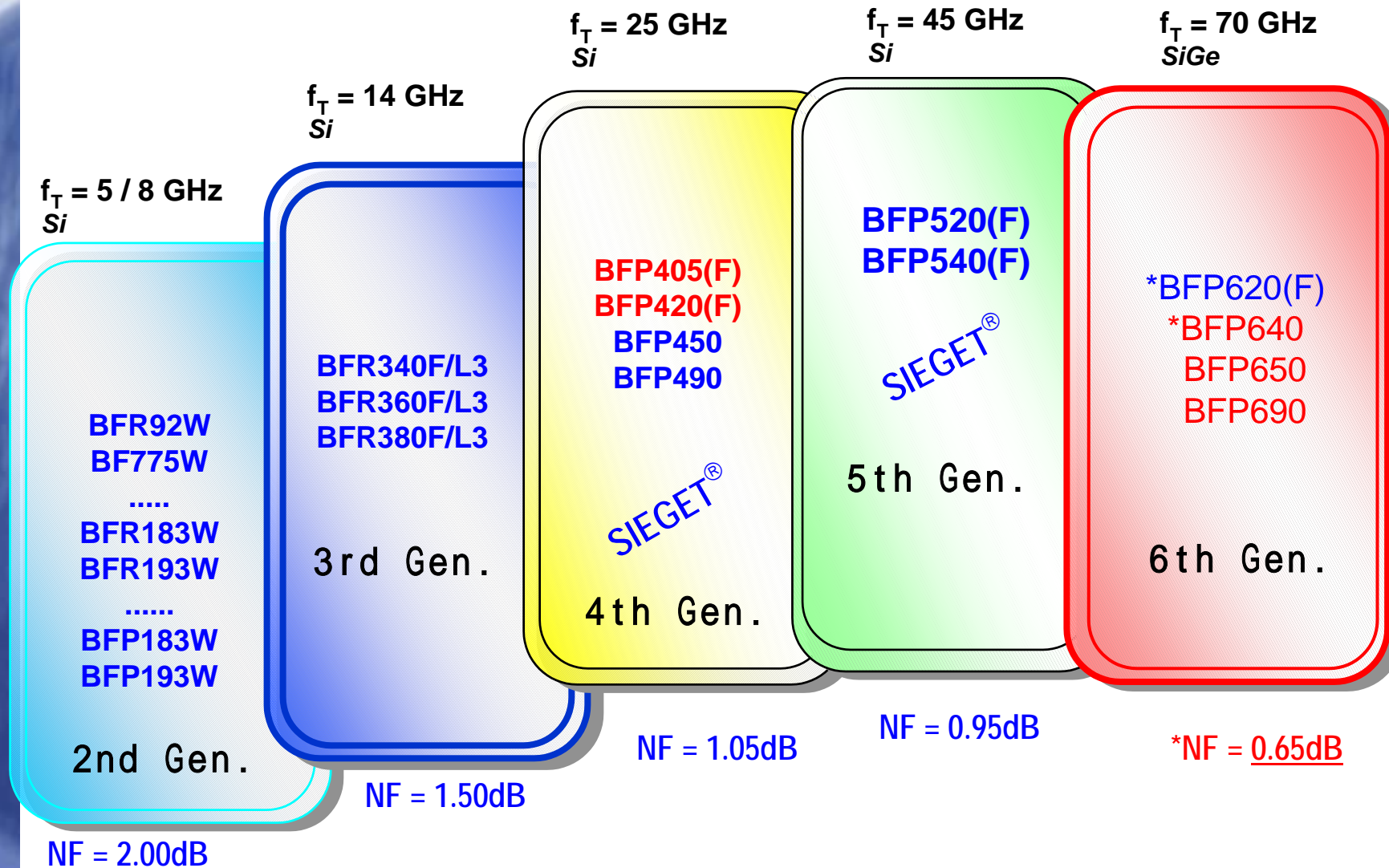
Varactor Diodes, Tuning

SOD323	SCD80	SC79	Applic.	C1V [pF]	C1 / C28	rs [W]
				@ f=1MHz	@ f=1MHz	@ f=100MHz
BA592	BA892	BA892-02V	Switch			
BB639	BB659	BB659-02V	VHF	38.3	14.7	0.65
BB639C	BB659C	BB659C-02V		39	15.3	0.6
BB644	BB664	BB664-02V		41.8	16.4	0.6
BB669	BB689	BB689-02V		56.5	20.9	0.85
BB640	-	BB679-02V		69	22.6	1.15
BB535	BB555	BB555-02V	UHF	18.7	8.9	0.55
BB545	BB565	BB565-02V		20	10	0.6
BB831	-	-	SAT	8.8	8.6	1
BB833	-	-		9.3	12.4	1.8
BB835	-	-		9.1	14.7	2.4
BB837	BB857	BB857-02V		6.6	12.2	2.2
-	-	BB877-02V		8.8	0.52	2

Type	Max. Ratings			Characteristics			Application	Package
NPN	V_{CE0} / V	I_C / mA	P_{tot} / mW	f_T / GHz 200 MHz	NF / dB 900 MHz	G / dB 900 MHz		
BF 799	20	35	280	1.1	3 (100MHz)		broadband amp., TV tuner	SOT-23
BF 799 W	20	35	280	1.1	3 (100MHz)			SOT-323
BFS 17 P	15	25	280	2.5	3.5	10	broadband amplifier	SOT-23
BFS 17 W	15	25	280	2.5	3.5	10		SOT-323
BFR 92 P	15	30	280	5	1.8	15	pre-amplifier	SOT-23
BFR 92 W	15	30	280	5	1.8	15.5		SOT-323
BFQ 81	16	35	280	5.8	1.45	16	broadband	SOT-23
BFP 81	16	35	280	5.8	1.2	21	amplifier	SOT-143
BFR 93 A	12	50	300	6	2	13.5	low distortion	SOT-23
BFR 93 AW	12	50	300	6	2	15	broadband amp.,	SOT-323
BFP 93 A	12	50	300	6	2	18	oscillators	SOT-143
BFR 106	15	100	700	5	2.5	12.5	low noise amp.	SOT-23
BFQ 19 S	15	75	1000	5.5	2.5	11.5	low distortion	SOT-89
BFG 19 S	15	100	1000	5.5	2.5	13.5	output stage	SOT-223

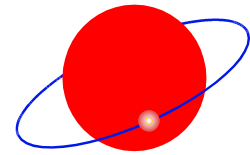
Type	Max. Ratings			Characteristics			Application	Package
NPN	V_{CE0} / V	I_C / mA	P_{tot} / mW	f_T / GHz 500 MHz	NF / dB 900 MHz	$G_{ma/ms}$ / dB 900 MHz	V_{CE} / V // I_C / mA $f = 0$ up to 3 GHz	
BFR 180	8	4	30	7	2.1	13.5	1...3 // 0.2...2.5	SOT-23
BFP 180	8	4	30	7	2.1	15	paging system	SOT-143
BFR 280	8	10	80	7.5	1.5	17	1...5 // 0.2...8	SOT-23
BFP 280	8	10	80	7.5	1.5	18.5	low noise pager	SOT-143
BFR 181	12	20	175	8	1.45	18	1...8 // 0.5...10	SOT-23
BFP 181	12	20	175	8	1.45	20	low-noise pre-amplifier	SOT-143
BFR 182	12	35	250	8	1.2	17.5	1... 8 // 1...20	SOT-23
BFP 182	12	35	250	8	1.2	22	low-noise amplifier	SOT-143
BFR 183	12	65	450	8	1.2	16.5	1...8 // 2...28	SOT-23
BFP 183	12	65	250	8	1.2	21	low-noise amplifier	SOT-143
BFR 193	12	80	580	8	1.3	14.5	3...8 // 5...40	SOT-23
BFP 193	12	80	580	8	1.3	17.5	low-distortion	SOT-143
BFQ 193	12	80	600	8	1.3	14	output stage	SOT-89
BFG 193	12	80	600	8	1.3	15.5		SOT-223
BFP 196	12	100	700	7.5	1.5	16	3...8 // 30...100	SOT-143
BFG 196	12	100	800	7.5	1.5	14	low-distortion output stage	SOT-223
BFP 136 W	12	150	1000	5.5	2	15.5	5 // 50...80, DECT ampl.	SOT-343
BFG 135 A	15	150	1000	6	2	14	5...10 // 70...130, ant. ampl.	SOT-223
BFG 235	15	300	2000	5.5	2.7	12	5...10 // 100...200, ant. ampl.	SOT-223

TR, 4th. ~ 6th. Gen.



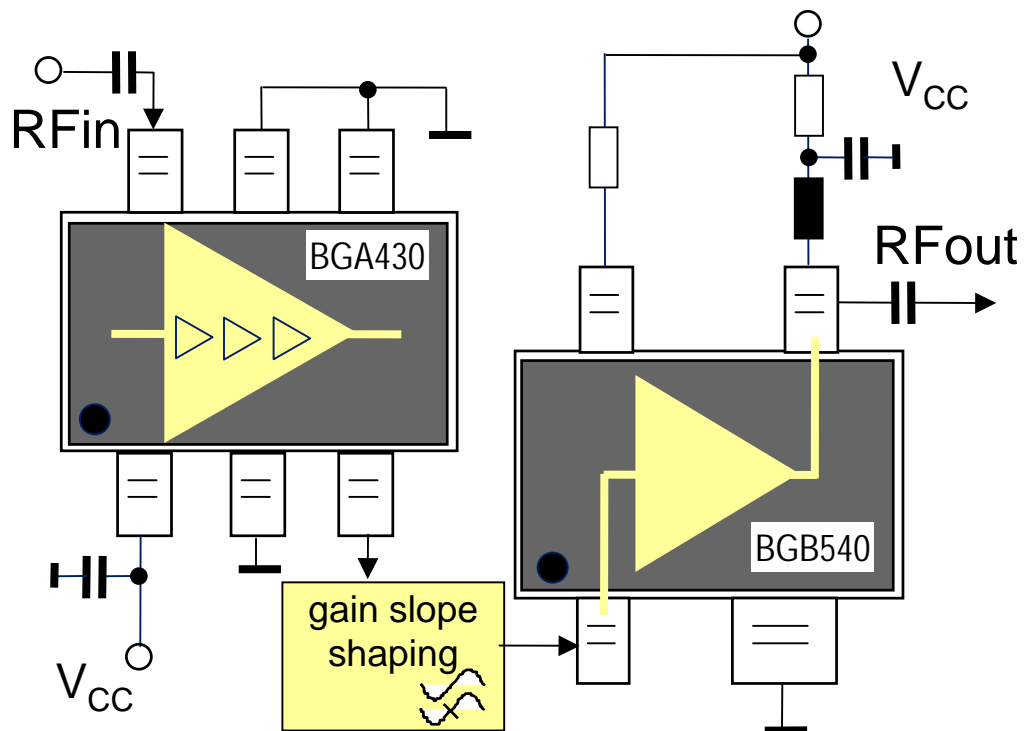
Type	Max. Ratings			Characteristics			Application	Compl. Type	Package
	V_{CE0}/V	I_C/mA	P_{tot}/mW	f_T/GHz 200 MHz	NF/dB 500 MHz	G_{Tres}/dB 500 MHz			
BFT 92	15	25	200	5.0	24	18	oscillator	BFR 92 P	SOT-23
BFT 92 W	15	25	200	5.0	24	18		BFR 92 W	SOT-323
BFT 93	12	35	200	5.0	24	16.5	amplifier	BFR 93 A	SOT-23
BFR 194	15	100	700	5.0	28	10	complemen- tary output stages	BFR 106	SOT-23
BFP 194	15	100	700	5.0	28	12			SOT-143
BFG 194	15	100	1000	5.0	28	11			BFG 19 S

MMIC, LNA & AMP



	Application	features	Package	frequency	Vcc	IC,typ	NF	Gain	IP3out	P-1dB,out
BGA416	Cascode buffer	60dB Isolation	SOT143	900MHz	3V	5.5mA	1.3dB	23dB	+14dBm	-3dBm
	amplifier	int. biased		2 GHz	3V	5.5mA	1.8dB	14dB	+14dBm	-3dBm
BGA420	universal	50Ω matched	SOT343	1.8GHz	3V	6.4mA	2.2dB	13dB	+10dBm	+0dBm
	LNA, buffer	1 stage			5V	12.4mA	2.6dB	14dB	+15dBm	+5dBm
BGA427	gain block,	50Ω matched	SOT343	1.8GHz	3V	9.5mA	2.2dB	22dB	+7dBm	-3dBm
	buffer	2 stage			5V	17.5mA	2.6dB	24dB	+14dBm	+4dBm
BGA430	high gain IF amplifier	50Ω matched 3 stage	SOT363	0.5 - 3GHz	5V	22mA	2.3dB	31dB	+15dBm	+2.5dBm
BGA612 SiGe	broadband amplifier	50Ω matched, high linearity	SOT343	0 - 5GHz	3.5V	20mA	2.3dB	16dB	+17dBm	+7dBm
BGA614 SiGe	broadband amplifier	50Ω matched, high linearity	SOT343	0 - 5GHz	3.5V	40mA	2.3dB	17dB	+25dBm	+12dBm
BGA616 SiGe	broadband amplifier	50Ω matched, medium power	SOT343	0 - 5GHz	4.5V	60mA	2.9dB	18dB	+29dBm	+18dBm
BGB420	broadband amplifier	mirror biased	SOT343	0.9GHz	3V	20mA	1.3dB	25dB	22dBm	+ 12dBm
		SIEGET		1.8GHz	3V	20mA	1.5dB	17dB	20dBm	+ 10dBm
BGB540	LNA, buffer	mirror biased	SOT343	0.9GHz	3V	20mA	1.15dB	26dB	22dBm	+ 12dBm
	driver	SIEGET		1.8GHz	3V	20mA	1.3dB	19dB	22dBm	+ 12dBm
BGB550	medium power	mirror biased	SCT595	0.9GHz	3V	100mA	1.3dB	22dB	28dBm	+ 19dBm
	driver amp	SIEGET		1.8GHz	3V	100mA	1.5dB	16dB	28dBm	+ 19dBm

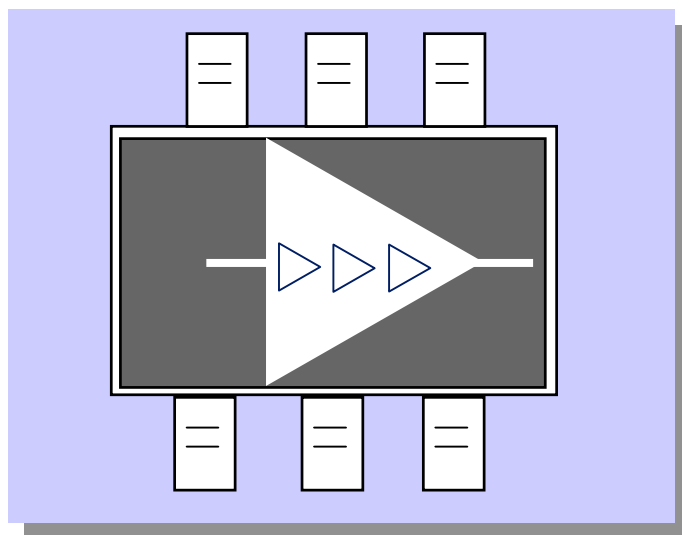
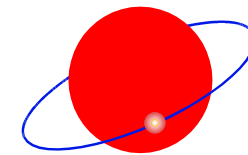
BGA430 + BGB540, LNB IF Amp.



Features and Benefits

- simplified IF Amp. design
- high gain
- pos. Gain Slope +3dB
- input/output matching
- reduced component count
- PCB space saving

BGA530 - LNB IF Amp.



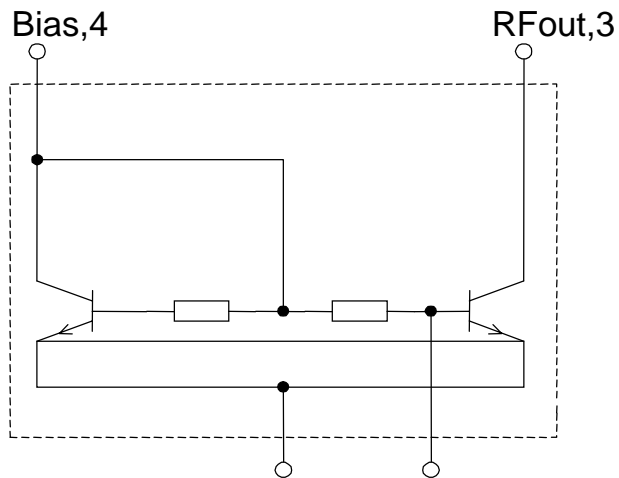
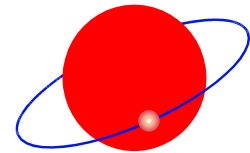
Features and Benefits

- high Gain 32...34 dB
- **positive Gain Slope**
- large Bandwidth 950...2150MHz
- input/output matched to 50 Ω
- reduced component count
- application: LNB IF Amp.

Vcc = 5 V, frequency range: 500.. 2150 MHz - **Target Specification**

Symbol	Parameter	frequency	Unit	Value
IS21I ²	Power Gain	950 MHz	dB	32
		2.15 GHz		34
NF	Noise Figure	950 MHz	dB	2.5
		2.15 GHz		2.7
P-1dB(out)	Output Compression Point	950 MHz	dBm	6
		2.15 GHz		5
Id	Total Device Current	N/A	mA	40

BGB540, LNA, pre-amp, buffer, driver

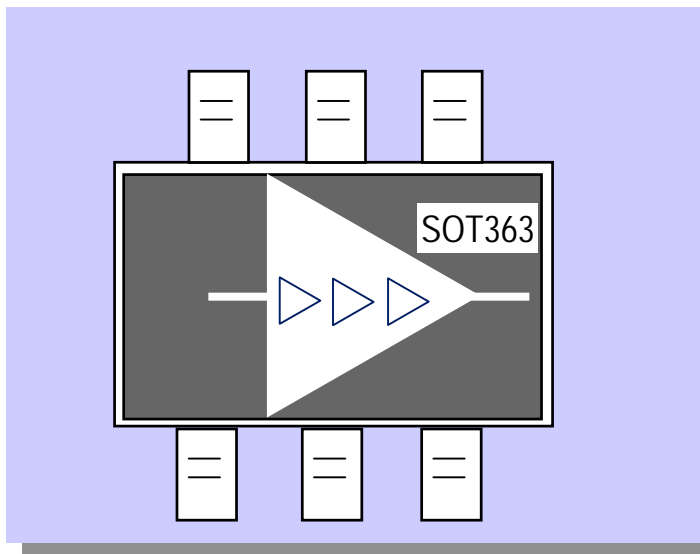


Features and Benefits

- high gain ; P_{-1dB} up to 18dBm
- supply voltage V_{CC} 1.6 .. 7.0V
- int. matching close to 50 Ω
- reduced component count
- PCB space saving
- simple ON/OFF switching (Pin 4)

Vd = 3.0V, Id = 20mA				
Symbol	Parameter	frequency	Unit	Value
$IS21I^2 / (G_{MA})$	Power Gain / (max. available)	950 MHz	dB	22.5 (26)
		2.15 GHz		16 (19)
NF	Noise Figure	950 MHz	dB	1.15
		2.15 GHz		1.4
P-1dB	Output Compression Point	950 MHz	dBm	12
		2.15 GHz		11
OIP3	Output Third Order Intercept Point	950 MHz	dBm	22
		2.15 GHz		20

BGA430, Broadband IF Amp.



Features and Benefits

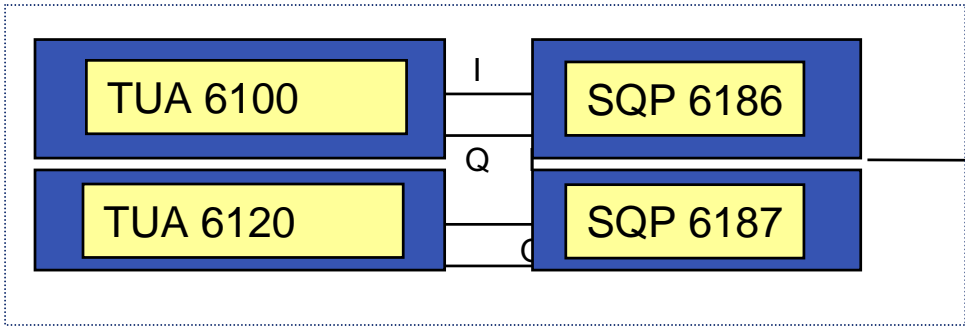
- high Gain ~ 30dB
- large Bandwidth
- input/output matched to 50 Ω
- operation voltage $V_{cc} = 5V$
- reduced component count
- application: LNB IF Amp.

Vcc = 5 V, frequency range: 100.. 2150 MHz				
Symbol	Parameter	frequency	Unit	Value
IS21I²	Power Gain	950 MHz	dB	32
		2.15 GHz		28
NF	Noise Figure	950 MHz	dB	2.3
		2.15 GHz		2.4
OIP3	Output Third Order Intercept Point	950 MHz	dBm	15
		2.15 GHz		14
Id	Total Device Current	N/A	mA	22

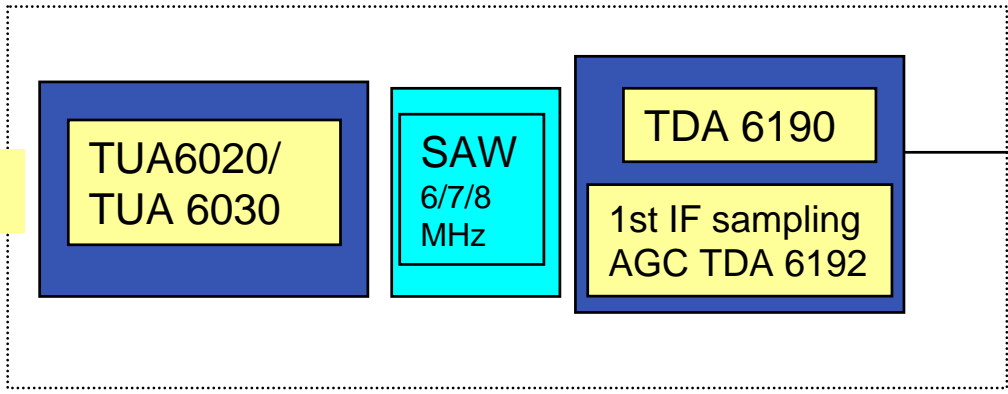
Digital TV and STB

Digital Sat.

2150
- 950 MHz

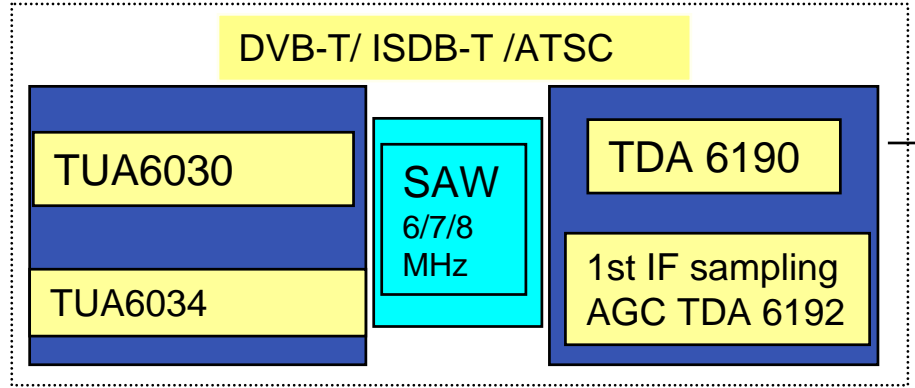


Digital Cable



Digital Terrestrial

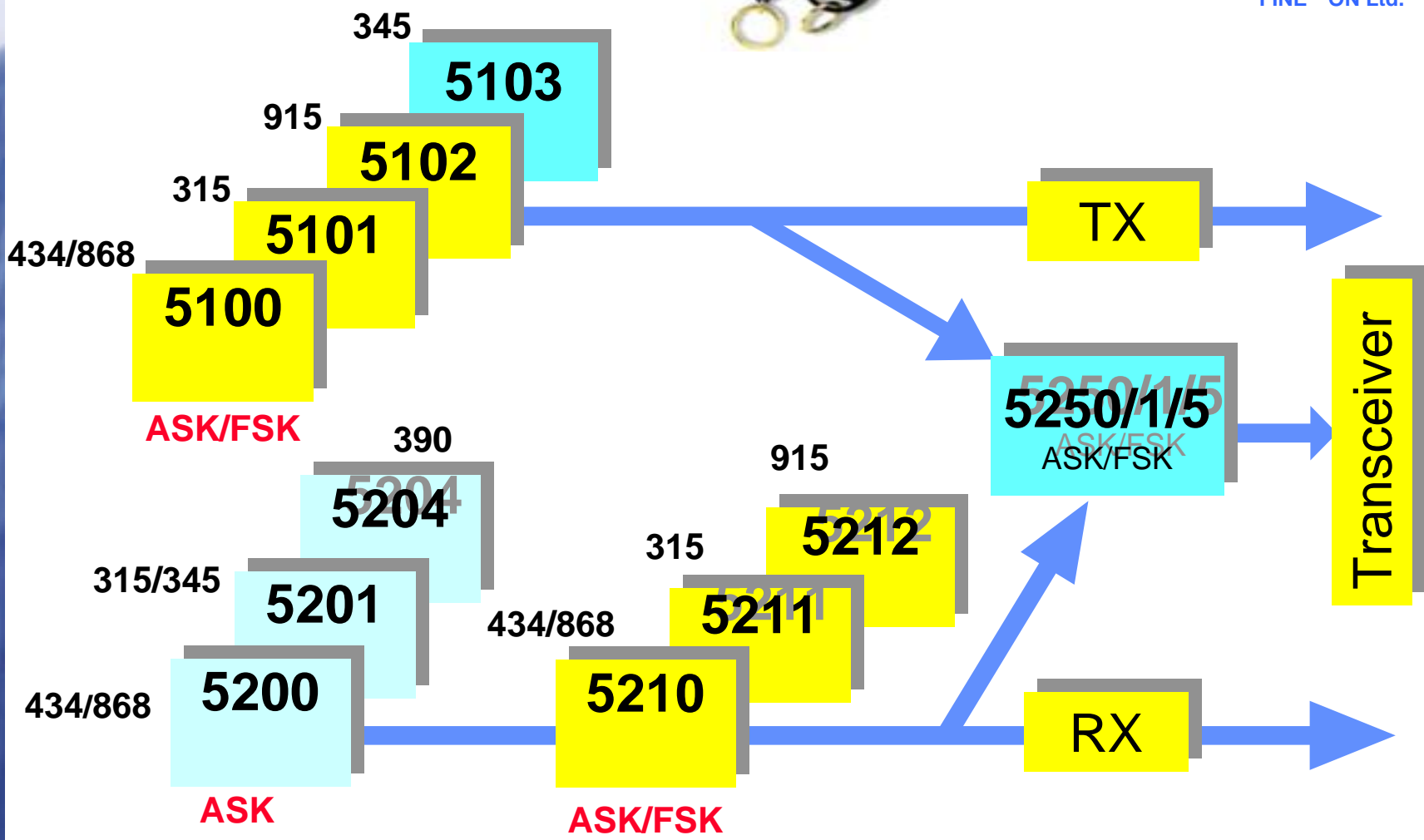
DVB-T/ ISDB-T /ATSC



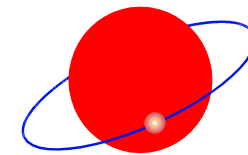
DVB-T Demo.



RKE

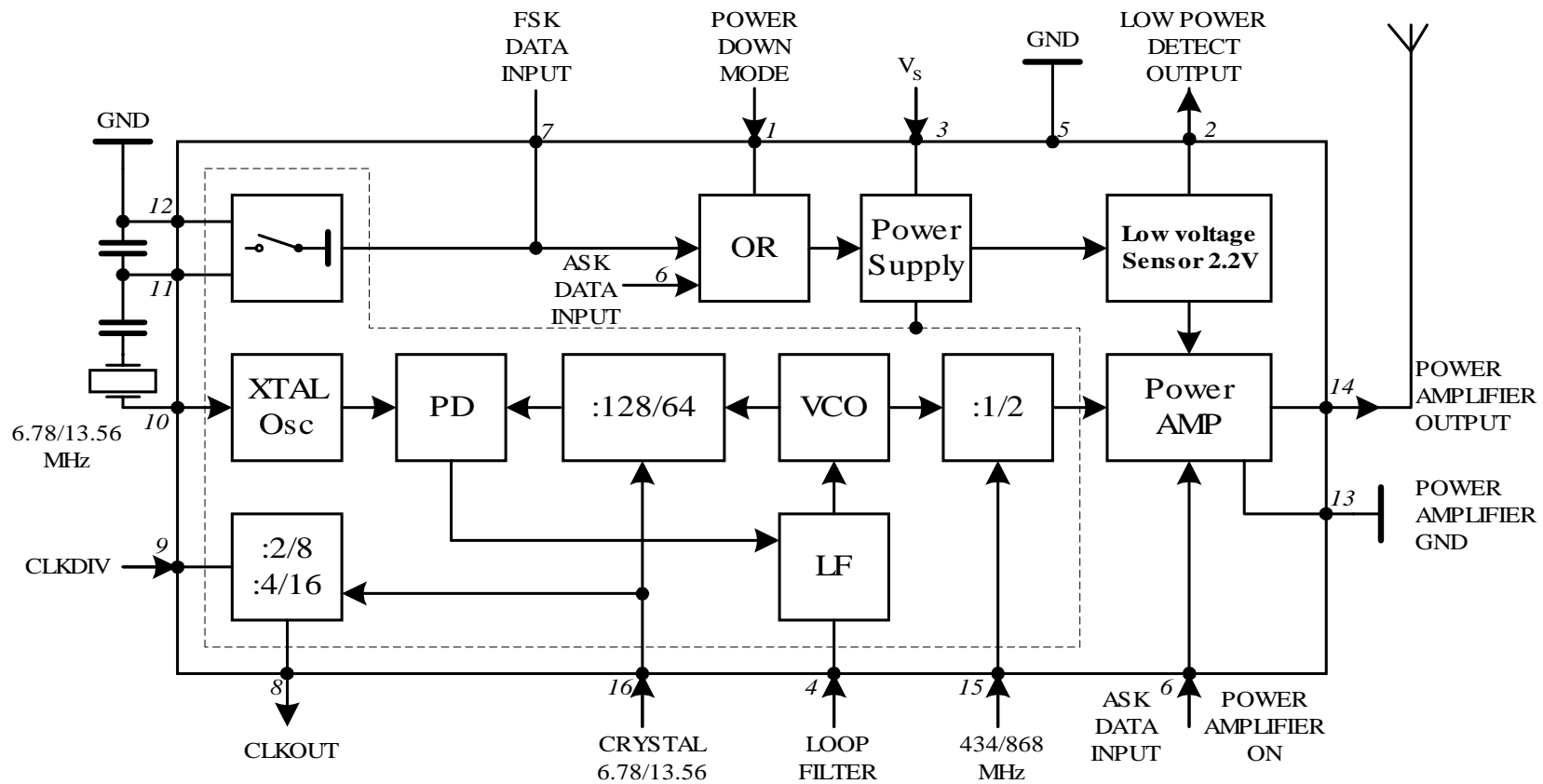
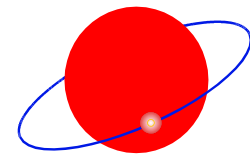


Product Overview

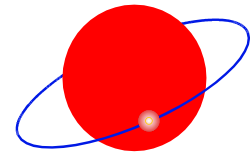


	TX			RX		TX / RX
	(ASK)	(ASK/FSK)		(ASK)	(ASK/FSK)	(ASK/FSK)
	7 dBm		10 dBm			
315 MHz	TDA 5101A	TDA 5101	TDK 5111	TDA 5201	TDA 5211	TDA 5251
345 MHz	TDA 5103A	TDA 5103		-	-	-
390 MHz	-	-		TDA 5204	-	-
434 MHz	TDA 5100A	TDA 5100	TDK 5110	TDA 5200	TDA 5210	TDA 5255
868 MHz	-					TDA 5250
915 MHz	-	TDA 5102		-	TDA 5212	-

Transmitter TDA 51xx

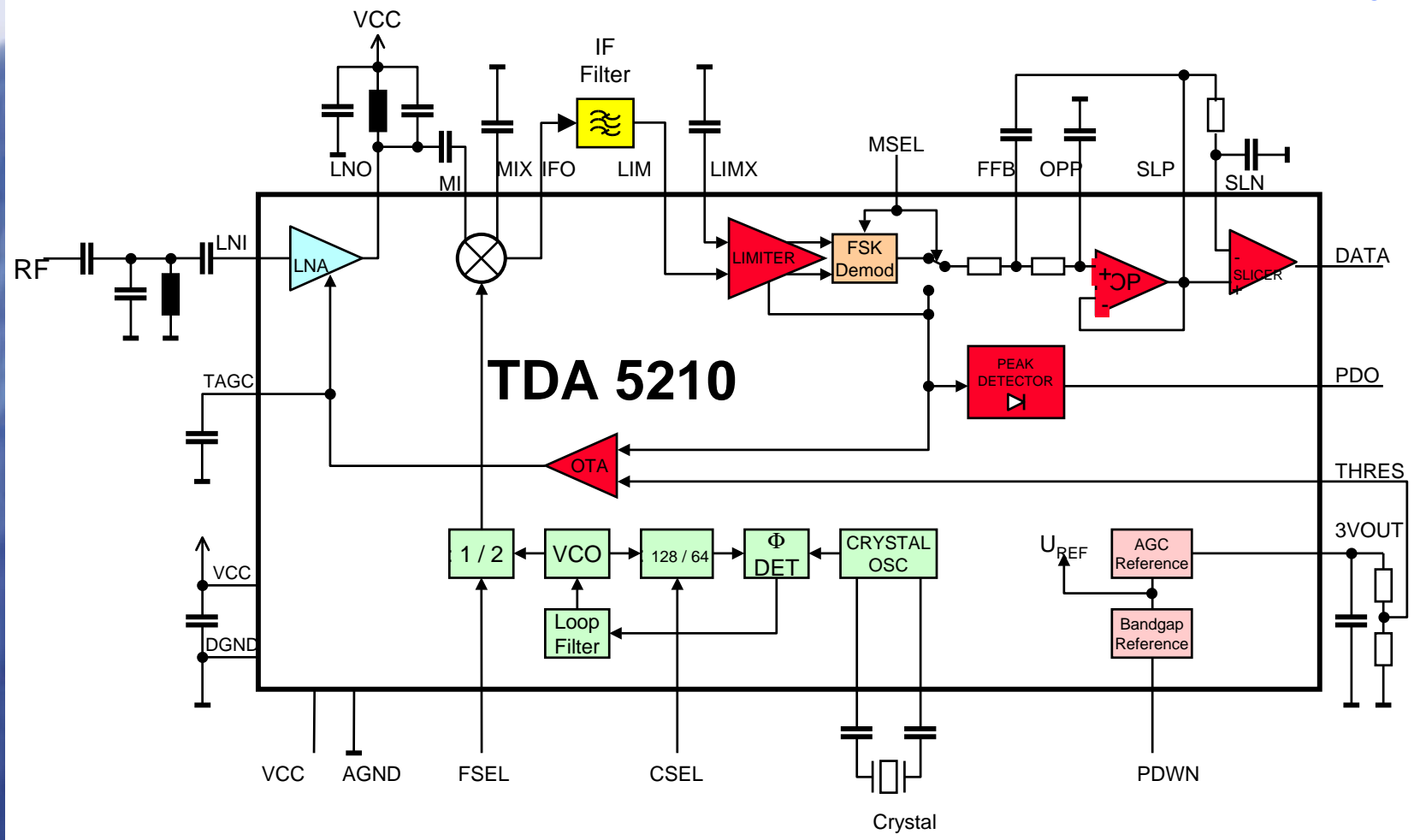


TDA 51xx Feature

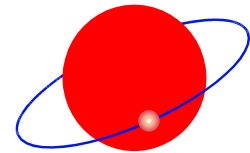


- Low supply current
- Voltage supply range 2.1 - 4 V
- Power down mode
- Low voltage sensor
- Fully integrated VCO, PLL and power amplifier (7 dBm)
- Switchable frequency range 868-870/433-435 MHz
- Selectable crystal oscillator 6.78 MHz / 13.56 MHz
- Programmable divided clock output for μC
- low external component count
- ASK / FSK modulation

Receiver TDA 52xx



TDA 52xx Feature



- Low supply current ($I_s = 4.8\text{mA typ.}$)
- Supply voltage range $5\text{V} \pm 10\%$
- Power down mode
- Fully integrated VCO and PLL synthesizer
- RF Input Sensitivity $< -110\text{ dBm}$
- Switchable frequency range 868-870/433-435 MHz
- Pin and Board compatible version for 315 and 345 MHz
- Selectable crystal oscillator
- Limiter with RSSI generation, operating at 10.7 MHz
- 2nd order low pass data filter with external capacitors
- Data slicer with self-adjusting threshold

Transmitter/Receiver	ISM Band 868-870MHz.
Data rate	1 KBit/s - 30 KBit/s
Modulation	FSK/ASK (OOK)
Deviation/Modulation index	10KHz - 100KHz / $mH > 2$
Sensitivity	ASK: < -110 dBm @ 50 W, BER = 10^{-3} FSK: < -100 dBm @ 50 W, BER = 10^{-3}
Transmitter power	Pout = 10 dBm @ 50 W
Supply voltage	2.1V – 5.5V
Current consumption	TX: typ. 10mA RX: typ. 8 mA
Power down	max. 100nA
Temperature range	-40° C / $+85^{\circ}$ C
Package	P-TSSOP-38



Frequency Bands

27 MHz	ww	Toys, Mouse, Keyboard
304.8 MHz	New Zealand	Remote Keyless Entry, diverse
307.9 MHz	APAC	
315 MHz	USA, AUS	Remote Keyless Entry
345 MHz	USA	Alarm Systems
390 MHz	USA	Metering, Garage Door Opener
434 MHz	EU	Remote Keyless Entry, diverse
868 MHz	EU	Remote Keyless Entry, TPMS
869.225 MHz	EU	Home Security
915 MHz	US	Wireless Mouse/Keyboard
2.4 GHz	ww	Bluetooth, WDCT, diverse