



Product Brief

RF transistors 7th generation

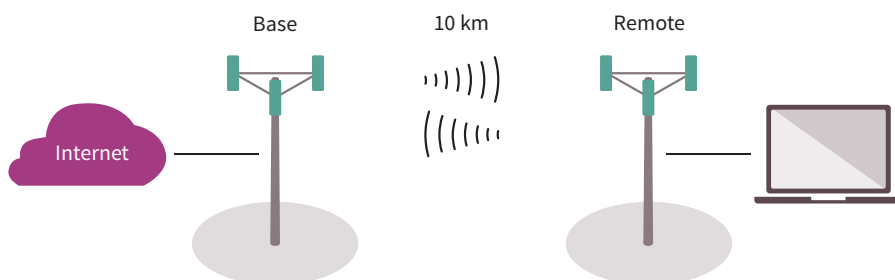
Ease of use for complementary wireless connectivity

Wireless fidelity or “Wi-Fi” plays a major role in today’s communications by enabling constant connection and broadband Internet access for users with laptops or devices equipped with wireless network interface while roaming within the range of fixed Access Points (AP) or a public hotspot.

Infineon 7th generation RF transistors family is an ease of use series of discrete Hetero-junction Bipolar Transistors (HBT) suitable as single and dual-band Low Noise Amplifier (LNA) solution for vast range of Wi-Fi connectivity applications.

This series of devices combines 44 GHz f_T silicon-germanium:carbide (SiGe:C) B9HFM process with advanced device geometry engineering conceived to reduce the parasitic capacitance to enhance high-frequency characteristics.

RF transistors 7th generation allow engineers to increase the RF link budget and Signal-to-Noise Ratio (SNR) of their AP routers and mobile stations when wider coverage areas are needed and especially when a higher order modulation scheme such as 256 Quadrature Amplitude Modulation (QAM) is used high throughput where more stringent SNR for both the AP and the client is required.



Key features

Ease of use RF performance

- > High transition frequency $f_T = 45$ GHz
- > High gain (19 dB) and NF level (0.65 dB)
- > High linearity OP1dB +8.5 dBm and OIP3 +19 dBm at 2.4 GHz at low current consumption of 13 mA
- > High maximum RF input power 1.5 kV HBM ESD robustness

Technical benefits

- > **Broad frequency range:** from 450 MHz to 12 GHz
- > **Reduced** power consumption
- > **Device suitability** under input signal power-stress

Customer benefits

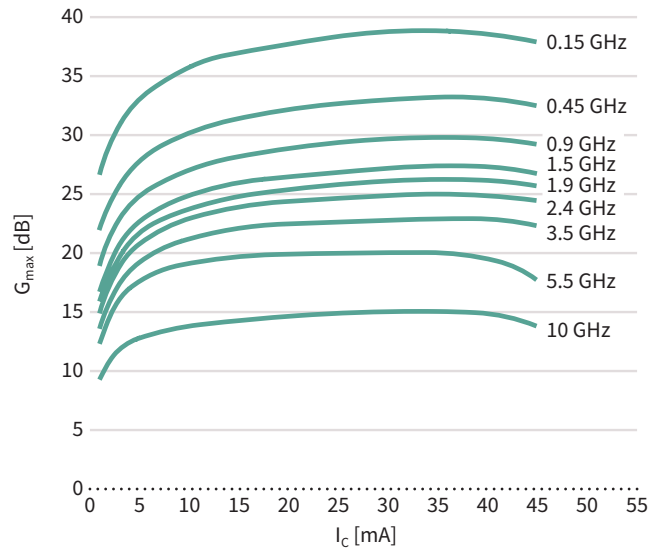
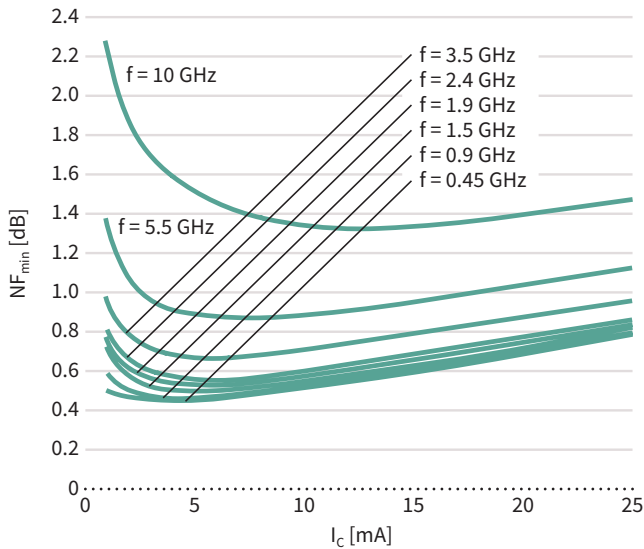
- > **Unmatched** general purpose device for high flexibility in vast frequency range
- > **Energy savings** and extended battery life
- > Improved high input power robustness

Applications

- > 2.4 GHz and 5.5 GHz Wi-Fi routers
- > All GNSS navigation systems and DMB
- > SDARS satellite radio
- > ISM applications, cordless phone, DSRC and UWB (NA)
- > 12 GHz satellite TV low noise block

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Infineon’s 7th generation general purpose transistors offer RF engineers with an outstanding performance. With noise figures of as low as 0.45 dB in sub-GHz range and of 0.9 dB at 5.5 GHz, this transistors series functions as low noise amplifier and provides with improved system sensitivity in wireless communication and broadcasting systems.

With G_{max} of more than 10 dB at 10 GHz, Infineon’s 7th generation product portfolio can also be used as gain block for buffer or driver amplifiers, as mixer as well as VCO for frequencies higher than 10 GHz.

Orderable part No.

Product type	OPN	I_c (max) [mA]	NF_{min} (typ) [dB]	G_{max} (typ) [dB]	OIP3 [dBm]	OP1dB [dBm]	Package
BFP720	BFP720H6327XTSA1	20	0.5	26.0	20.5	6.0	SOT343
BFP720F	BFP720FH6327XTSA1	20	0.5	26.0	20.5	6.0	TSFP-4-1
BFP720ESD	BFP720ESDH6327XTSA1	25	0.6	27.0	22.0	6.5	SOT343
BFP720FESD	BFP720FESDH6327XTSA1	25	0.6	27.0	22.0	7.0	TSFP-4-1
BFP740	BFP740H6327XTSA1	45	0.5	27.0	25.0	11.0	SOT343
BFP740F	BFP740FH6327XTSA1	45	0.5	27.5	25.0	11.0	TSFP-4-1
BFP740ESD	BFP740ESDH6327XTSA1	35	0.6	27.0	25.0	10.0	SOT343
BFP740FESD	BFP840FESDH6327XTSA1	35	0.6	27.0	24.5	10.0	TSFP-4-1
BFR740L3RH	BFR740L3RHE6327XTSA1	30	0.5	24.5	25.0	11.0	TSLP-3-9
BFP760	BFP760H6327XTSA1	70	0.5	25.0	31.5	14.5	SOT343

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