



RF Transceivers

Designed for Low-Power, Low data rate applications, Freescale's offering of RF Transceivers covers any need that might arise in the development of your design. Freescale has solutions for both proprietary networks. Single-chip transceivers eliminate the need for a lot of external components. System in a package solutions integrates an 8-bit micro to further lower the cost of implementation.



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Protocol	Maximum Data Rate (kbps)	Supply Voltage (V)	Supply current @ 1% Duty Cycle (Typical mA)	Frequency (GHz)	Tx/Rx Switch	Package Type	Digi-Key Part No.	Price Each			Freescale Part No.
								1	25	100	
2.4GHz Transceivers											
Proprietary	250	2.0 - 3.4	30 Tx / 37 Rx	2.4 - 2.5	No	32-QFN	MC13191FC-ND	3.54	2.27	2.05	MC13191FC
Proprietary	250	2.0 - 3.4	30 Tx / 37 Rx	2.4 - 2.5	No	32-QFN	MC13191FCR2CT-ND	2.65	1.61	1.54	MC13191FCR2
Proprietary	250	2.0 - 3.4	30 Tx / 37 Rx	2.4 - 2.5	No	32-QFN	MC13191FCR2TR-ND	4444.94/2,500			MC13191FCR2
Proprietary	250	2.0 - 3.4	30 Tx / 37 Rx	2.4 - 2.5	No	32-QFN	MC13190FCCT-ND	3.67	2.23	2.13	MC13190FCR2
Proprietary	250	2.0 - 3.4	30 Tx / 37 Rx	2.4 - 2.5	Yes	32-QFN	MC13201FC-ND	3.85	2.34	2.23	MC13201FC
Proprietary	250	2.0 - 3.4	30 Tx / 37 Rx	2.4 - 2.5	Yes	32-QFN	MC13201FCR2TR-ND	4720.82/2,500			MC13201FCR2
Development Tools											
Development Kit for MC1321x							1321XDSK-ND	222.50	—	—	1321XDSK
Development Kit for MC1321x, with USB Multilink							1321XDSK-BDM-ND	296.77	—	—	1321XDSK-BDM
Evaluation Kit for MC1321x							1321XEKV-ND	1400.94	—	—	1321XEKV
Network Starter Kit for MC1321x							1321XNSK-ND	424.33	—	—	1321XNSK
Network Starter Kit for MC1321x, with USB Multilink							1321XNSK-BDM-ND	466.85	—	—	1321XNSK-BDM

◆ RoHS Compliant † Cut Tape ‡ Tape and Reel

RF High Power LDMOS Transistors



Frequency Band (MHz)	Pout Typical (W)	VDD (V)	Gain dB/MHz	Package	Digi-Key Part No.	Cut Tape Price Each			Digi-Key Part No.	Tape & Reel Pricing 500
						1	25	100		
1930 - 1990	12	28	14/1990	TO-272	MRF5S19060NBR1CT-ND	32.97	27.46	25.84	MRF5S19060NBR1TR-ND	14787.75
1930 - 1990	12	28	14/1990	TO-270	MRF5S19060NR1CT-ND	32.97	27.46	25.84	MRF5S19060NR1TR-ND	14787.75
880	20	26	19.5/880	TO-272	MRF5S9100NBR1CT-ND	30.98	25.81	24.28	MRF5S9100NBR1TR-ND	13914.81
880	20	26	19.5/880	TO-270	MRF5S9100NR1CT-ND	31.01	25.83	24.31	MRF5S9100NR1TR-ND	13914.81
869 - 960	100	26	17.5/960	TO-272	MRF5S9101NBR1CT-ND	31.01	25.83	24.31	MRF5S9101NBR1TR-ND	13914.81
869 - 960	100	26	17.5/960	TO-270	MRF5S9101NR1CT-ND	30.98	25.81	24.28	MRF5S9101NR1TR-ND	13914.81

◆ RoHS Compliant

RF GaAS PHEMT Transistors



Frequency Maximum (GHz)	Pout Typical (W)	VDD (V)	Gain dB/MHz	Package	Digi-Key Part No.	Cut Tape Price Each		Digi-Key Part No.	Tape & Reel Pricing 50
						1	25		
3.5	3	12	9/3550	1.5-PLD	MRF35003NR5CT-ND	10.03	7.58	—	—
5.8	9	12	10/3550	NI-360HF	MRF35010NR5CT-ND	26.96	20.49	MRF35010NR5TR-ND	996.07
5	1.5	6	10/3550	1.5-PLD	MRF35002NR5CT-ND	7.11	4.85	MRF35002NR5TR-ND	242.30
5.8	10	12	10/3550	1.5-PLD	MRF35010NR5CT-ND	25.60	19.46	MRF35010NR5TR-ND	1165.67



PLL/Frequency Synthesizer

PLL Type	Modulus	Operating Freq. (MHz)	Aux. Op. Frequency (MHz)	Normalized Phase Noise	Digi-Key Part No.	Price Each		
						1	25	100
RF/IF Dual	Integer	2,000	500	-197 dBc/Hz	LMX1600SLBXCCT-ND	1.92	1.53	1.30
					LMX1600SLBXTN-ND	2790.00/2,500		
					LMX1600TM-ND	1.84	1.46	1.25
RF/IF Dual	Integer	1,100	500	-197 dBc/Hz	LMX1601SLBXCCT-ND	2.25	1.79	1.53
					LMX1601SLBXTN-ND	3070.00/2,500		
					LMX1601TM-ND	1.27	1.22	1.17
RF/IF Dual	Integer	1,100	1,100	-197 dBc/Hz	LMX1601TMXCT-ND	1.59	1.26	1.08
					LMX1601TMXTN-ND	2307.50/2,500		
					LMX1601TMXTR-ND	1.66	1.32	1.13
Single	Integer	550	—	-210 dBc/Hz	LMX2306SLBXCCT-ND	2.56	2.03	1.74
					LMX2306SLBXTN-ND	3720.00/2,500		
					LMX2306TM-ND	1.96	1.36	1.13
Single	Integer	2,500	—	-212 dBc/Hz	LMX2306TMXCT-ND	4.67	3.50	2.99
					LMX2306TMXTN-ND	4767.50/2,500		
					LMX2306TMXTR-ND	3.66	2.91	2.49
Single	Integer	2,000	—	-212 dBc/Hz	LMX2310USLXCCT-ND	5.32	4.00	3.33
					LMX2310USLXTN-ND	5320.00/2,500		
					LMX2310USLXTR-ND	3.33	2.64	2.26
Single	Integer	2,000	—	-212 dBc/Hz	LMX2311USLXCCT-ND	4.87	3.50	2.99
					LMX2311USLXTN-ND	4837.50/2,500		
					LMX2311USLXTR-ND	3.17	2.52	2.16
Single	Integer	1,200	—	-212 dBc/Hz	LMX2312USLXCCT-ND	4.62	3.50	2.99
					LMX2312USLXTN-ND	4612.50/2,500		
					LMX2312USLXTR-ND	3.25	2.58	2.21
Single	Integer	600	—	-212 dBc/Hz	LMX2313USLXCCT-ND	4.75	3.50	2.99
					LMX2313USLXTN-ND	4725.00/2,500		
					LMX2313USLXTR-ND	2.64	2.10	1.79
Single	Integer	1,200	—	-210 dBc/Hz	LMX2316SLBXCCT-ND	3.82	2.90	2.40
					LMX2316SLBXTN-ND	3832.50/2,500		
					LMX2316TM-ND	2.26	2.17	2.08
Single	Integer	2,800	—	-210 dBc/Hz	LMX2326SLBXCCT-ND	3.40	2.71	2.31
					LMX2326SLBXTN-ND	4947.50/2,500		
					LMX2326TM-ND	2.63	2.17	1.92
RF/IF Dual	Integer	2,500	510	-211 dBc/Hz	LMX2330LTM-ND	3.10	2.46	2.10
RF/IF Dual	Integer	2,500	600	-212 dBc/Hz	LMX2330USLEXCT-ND	3.79	3.01	2.57
RF/IF Dual	Integer	2,000	510	-211 dBc/Hz	LMX2330USLEXTR-ND	5507.50/2,500		
RF/IF Dual	Integer	2,000	510	-211 dBc/Hz	LMX2331LTM-ND	2.69	2.14	1.83
RF/IF Dual	Integer	1,200	510	-211 dBc/Hz	LMX2332SLBXCCT-ND	3.33	2.64	2.26
RF/IF Dual	Integer	1,200	510	-211 dBc/Hz	LMX2332SLBXTN-ND	4837.50/2,500		
RF/IF Dual	Integer	1,200	510	-211 dBc/Hz	LMX2332LTM-ND	2.66	2.12	1.81
RF/IF Dual	Integer	1,100	1,100	-211 dBc/Hz	LMX2335LTM-ND	2.52	2.00	1.71
RF/IF Dual	Integer	1,100	1,100	-211 dBc/Hz	LMX2335LTMXCT-ND	2.51	1.99	1.70
RF/IF Dual	Integer	1,100	1,100	-211 dBc/Hz	LMX2335LTMXTR-ND	3660.00/2,500		
RF/IF Dual	Integer	2,000	510	-211 dBc/Hz	LMX2336LTM-ND	3.10	2.46	2.10
RF/IF Dual	Integer	2,000	510	-211 dBc/Hz	LMX2336LTMXCT-ND	3.79	3.01	2.57
RF/IF Dual	Integer	2,000	510	-211 dBc/Hz	LMX2336LTMXTN-ND	5507.50/2,500		
RF/IF Dual	Integer	2,000	510	-211 dBc/Hz	LMX2336LTMXTR-ND	2.69	2.14	1.83
RF/IF Dual	Integer	1,200	510	-211 dBc/Hz	LMX2337SLBXCCT-ND	3.33	2.64	2.26
RF/IF Dual	Integer	1,200	510	-211 dBc/Hz	LMX2337SLBXTN-ND	4837.50/2,500		
RF/IF Dual	Integer	1,200	510	-211 dBc/Hz	LMX2337LTM-ND	2.66	2.12	1.81
RF/IF Dual	Integer	1,100	1,100	-211 dBc/Hz	LMX2338LTM-ND	2.52	2.00	1.71
RF/IF Dual	Integer	1,100	1,100	-211 dBc/Hz	LMX2338LTMXCT-ND	2.51	1.99	1.70
RF/IF Dual	Integer	1,100	1,100	-211 dBc/Hz	LMX2338LTMXTR-ND	3660.00/2,500		
RF/IF Dual	Integer	2,000	510	-211 dBc/Hz	LMX2339LTM-ND	3.10	2.46	2.10
RF/IF Dual	Integer	2,000	510	-211 dBc/Hz	LMX2339LTMXCT-ND	3.79	3.01	2.57
RF/IF Dual	Integer	2,000	510	-211 dBc/Hz	LMX2339LTMXTN-ND	5507.50/2,500		
RF/IF Dual	Integer	2,000	510	-211 dBc/Hz	LMX2339LTMXTR-ND	2.69	2.14	1.83
RF/IF Dual	Integer	1,200	510	-211 dBc/Hz	LMX2340SLBXCCT-ND	3.33	2.64	2.26
RF/IF Dual	Integer	1,200	510	-211 dBc/Hz	LMX2340SLBXTN-ND	4837.50/2,500		
RF/IF Dual	Integer	1,200	510	-211 dBc/Hz	LMX2340LTM-ND	2.66	2.12	1.81
RF/IF Dual	Integer	1,100	1,100	-211 dBc/Hz	LMX2341LTM-ND	2.52	2.00	1.71
RF/IF Dual	Integer	1,100	1,100	-211 dBc/Hz	LMX2341LTMXCT-ND	2.51	1.99	1.70
RF/IF Dual	Integer	1,100	1,100	-211 dBc/Hz	LMX2341LTMXTR-ND	3660.00/2,500		
RF/IF Dual	Integer	2,000	510	-211 dBc/Hz	LMX2342LTM-ND	3.10	2.46	2.10
RF/IF Dual	Integer	2,000	510	-211 dBc/Hz	LMX2342LTMXCT-ND	3.79	3.01	2.57
RF/IF Dual	Integer	2,000	510	-211 dBc/Hz	LMX2342LTMXTN-ND	5507.50/2,500		
RF/IF Dual	Integer	2,000	510	-211 dBc/Hz	LMX2342LTMXTR-ND	2.69	2.14	1.83
RF/IF Dual	Integer	1,200	510	-211 dBc/Hz	LMX2343SLBXCCT-ND	3.33	2.64	2.26
RF/IF Dual	Integer	1,200	510	-211 dBc/Hz	LMX2343SLBXTN-ND	4837.50/2,500		
RF/IF Dual	Integer	1,200	510	-211 dBc/Hz	LMX2343LTM-ND	2.66	2.12	1.81
RF/IF Dual	Integer	1,100	1,100	-211 dBc/Hz	LMX2344LTM-ND	2.52	2.00	1.71
RF/IF Dual	Integer	1,100	1,100	-211 dBc/Hz	LMX2344LTMXCT-ND	2.51	1.99	1.70
RF/IF Dual	Integer	1,100	1,100	-211 dBc/Hz	LMX2344LTMXTR-ND	3660.00/2,500		
RF/IF Dual	Integer	2,000	510	-211 dBc/Hz	LMX2345LTM-ND	3.10	2.46	2.10
RF/IF Dual	Integer	2,000	510	-211 dBc/Hz	LMX2345LTMXCT-ND	3.79	3.01	2.57
RF/IF Dual	Integer	2,000	510	-211 dBc/Hz	LMX2345LTMXTN-ND	5507.50/2,500		
RF/IF Dual	Integer	2,000	510	-211 dBc/Hz	LMX2345LTMXTR-ND	2.69	2.14	1.83
RF/IF Dual	Integer	1,200	510	-211 dBc/Hz	LMX2346SLBXCCT-ND	3.33	2.64	2.26
RF/IF Dual	Integer	1,200	510	-211 dBc/Hz	LMX2346SLBXTN-ND	4837.50/2,500		
RF/IF Dual	Integer	1,200	510	-211 dBc/Hz	LMX2346LTM-ND	2.66	2.12	1.81
RF/IF Dual	Integer	1,100	1,100	-211 dBc/Hz	LMX2347LTM-ND	2.52	2.00	1.71
RF/IF Dual	Integer	1,100	1,100	-211 dBc/Hz	LMX2347LTMXCT-ND	2.51	1.99	1.70
RF/IF Dual	Integer	1,100	1,100	-211 dBc/Hz	LMX2347LTMXTR-ND	3660.00/2,500		
RF/IF Dual	Integer	2,000	510	-211 dBc/Hz	LMX2348LTM-ND	3.10	2.46	2.10
RF/IF Dual	Integer	2,000	510	-211 dBc/Hz	LMX2348LTMXCT-ND	3.79	3.01	2.57
RF/IF Dual	Integer	2,000	510	-211 dBc/Hz	LMX2348LTMXTN-ND	5507.50/2,500		
RF/IF Dual	Integer	2,000	510	-211 dBc/Hz	LMX2348LTMXTR-ND	2.69	2.14	1.83
RF/IF Dual	Integer	1,200	510	-211 dBc/Hz	LMX2349SLBXCCT-ND	3.33	2.64	2.26
RF/IF Dual	Integer	1,200	510	-211 dBc/Hz	LMX2349SLBXTN-ND	4837.50/2,500		
RF/IF Dual	Integer	1,200	510	-211 dBc/Hz	LMX2349LTM-ND	2.66	2.12	1.81