

Description

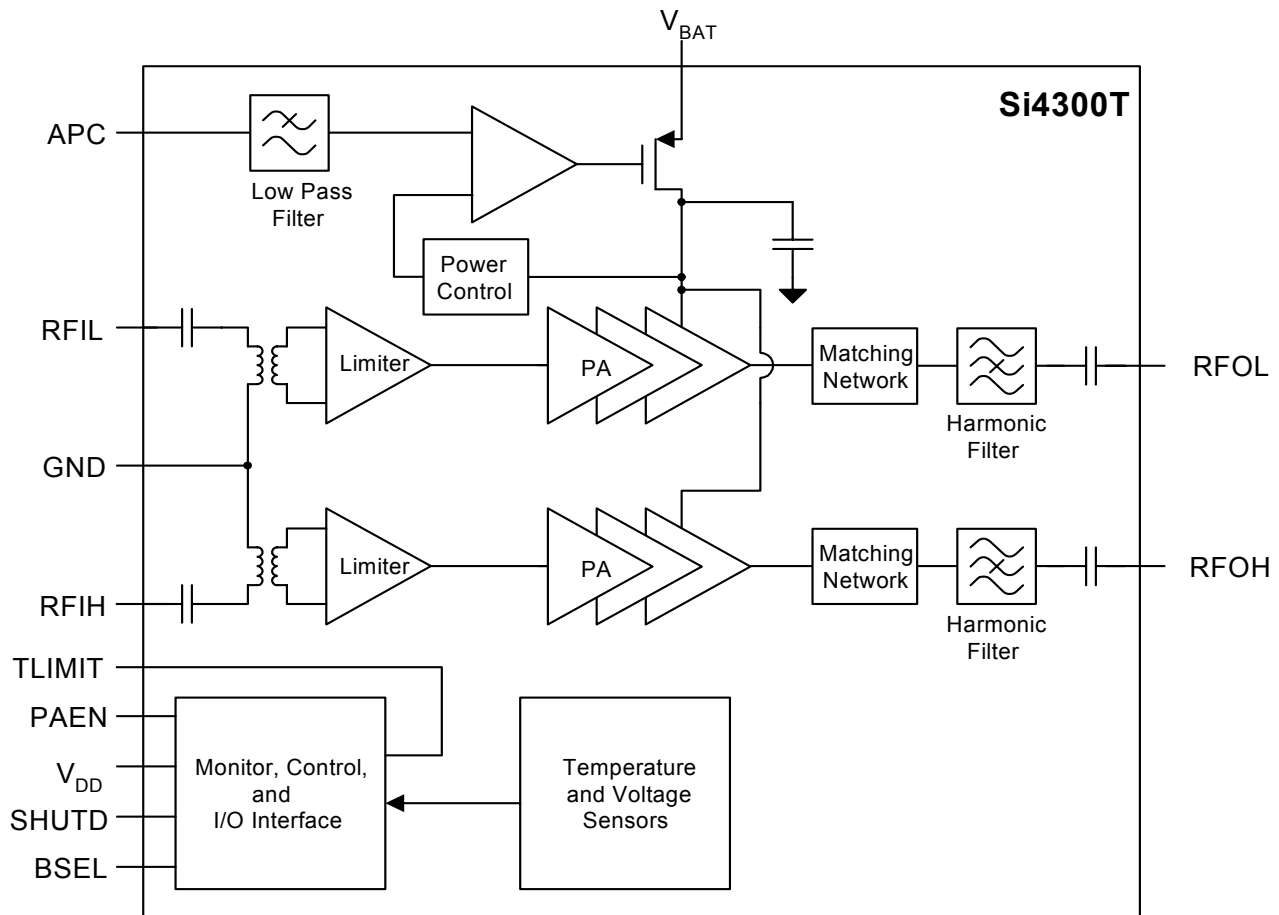
The Si4300T is a complete, monolithic, high-power, and high-performance power amplifier system that integrates all functions and all components between the transmit portion of the transceiver and antenna switch module (ASM). The integrated circuit consists of two amplification paths which supports GSM 900, DCS 1800, and PCS 1900. These amplifiers are General Packet Radio Service (GPRS) class 12 compatible and can be used in GPRS multi-slot applications. The Si4300T integrates the input and output matching networks, complete power control, thermal and load mismatch protection, and many other features and functions in a single, standard CMOS die on a ceramic substrate.

Features

- Small 25 mm² package (3.9 x 6.4 x 1.3 mm)
- Complete power control
- Thermal and load mismatch protection
- Harmonic filtering
- Input and output matching circuits
- Optimal average burst current (ABC) for all power levels
- Low powerdown current during receive and standby
- GPRS Class 12 compatible
- 3.0 to 4.8 V operation
- JEDEC moisture sensitivity level (MSL) 1
- RoHS compliant

Applications

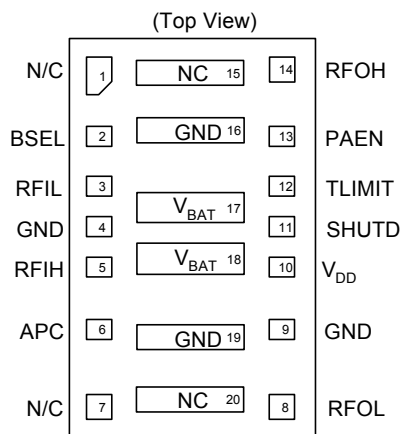
- E-GSM 900, DCS 1800, and PCS 1900 dual-band cellular handsets
- GPRS data terminals



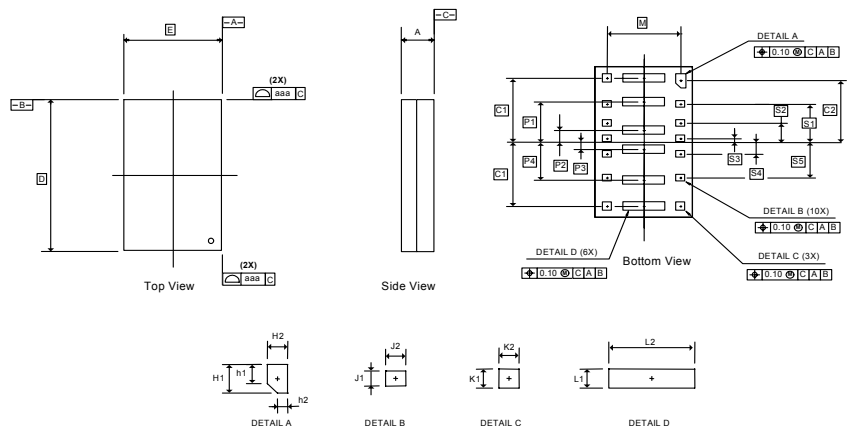
Selected Electrical Specifications

Parameter	Symbol	Test Condition	Min	Typ	Max	Unit
GSM						
Input Power	P_{IN}	Across all operating conditions	3.5	—	11	dBm
Output Noise Power		RBW = 100 kHz, f = 925 to 935 MHz	—	—	-72	dBm
		RBW = 100 kHz, f > 935 MHz, 6 dBm	—	-86	-84	dBm
Input VSWR		P_{OUT} = over all power levels,	—	1.6:1	1.8:1	
Ruggedness		All combinations of the following: P_{IN} = 3.5 to 11 dBm, APC \leq 2.0 V, T_C = -20 to 85 °C, V_{BAT} = 3.0 to 4.8 V, Antenna VSWR \leq 20:1, all angles Post-PA loss \geq 1.4 dB	—	—	no damage or permanent degradation	
DCS						
Input Power	P_{IN}	Across all operating conditions	3.5	—	9	dBm
Output Noise Power	P_{NOISE}	RBW = 100 kHz, f = 1805–1880 MHz	—	—	-77	dBm
		RBW = 100 kHz, f > 1880 MHz	—	—	-77	dBm
Input VSWR		P_{OUT} = over all power levels,	—	1.6:1	1.8:1	
Ruggedness		All combinations of the following: P_{IN} = 3.5 to 9 dBm, APC \leq 2.0 V, T_C = -20 to 85 °C, V_{BAT} = 3.0 to 4.8 V, Antenna VSWR \leq 20:1, all angles Post-PA loss \geq 1.4 dB	—	—	no damage or permanent degradation	
PCS						
Input Power	P_{IN}	Across all operating conditions	3.5	—	9	dBm
Output Noise Power	P_{NOISE}	RBW = 100 kHz, f = 1930–1990 MHz	—	—	-77	dBm
		RBW = 100 kHz, f > 1930 MHz	—	—	-77	dBm
Input VSWR		P_{OUT} = over all power levels,	—	1.6:1	1.8:1	
Ruggedness		All combinations of the following: P_{IN} = 3.5 to 9 dBm, APC \leq 2.0 V, T_C = -20 to 85 °C, V_{BAT} = 3.0 to 4.8 V, Antenna VSWR \leq 20:1, all angles Post-PA loss \geq 1.4 dB	—	—	no damage or permanent degradation	

Pin Assignments



Package Information



Dimension	MIN	NOM	MAX	Dimension	MIN	NOM	MAX	Dimension	MIN	NOM	MAX
A	1.17	1.30	1.43	L1	0.35	0.40	0.45	P3	0.30 BSC		
H1	0.55	0.60	0.65	L2	1.65	1.70	1.75	P4	1.60 BSC		
h1	0.35	0.40	0.45	C1	2.70 BSC			S1	1.60 BSC		
H2	0.35	0.40	0.45	C2	2.60 BSC			S2	0.80 BSC		
h2	0.15	0.20	0.25	D	6.40 BSC			S3	0.15 BSC		
J1	0.27	0.32	0.37	E	3.90 BSC			S4	0.50 BSC		
J2	0.35	0.40	0.45	M	2.90 BSC			S5	1.50 BSC		
K1	0.35	0.40	0.45	P1	1.70 BSC			aaa	0.10		
K2	0.35	0.40	0.45	P2	0.50 BSC						