

Description

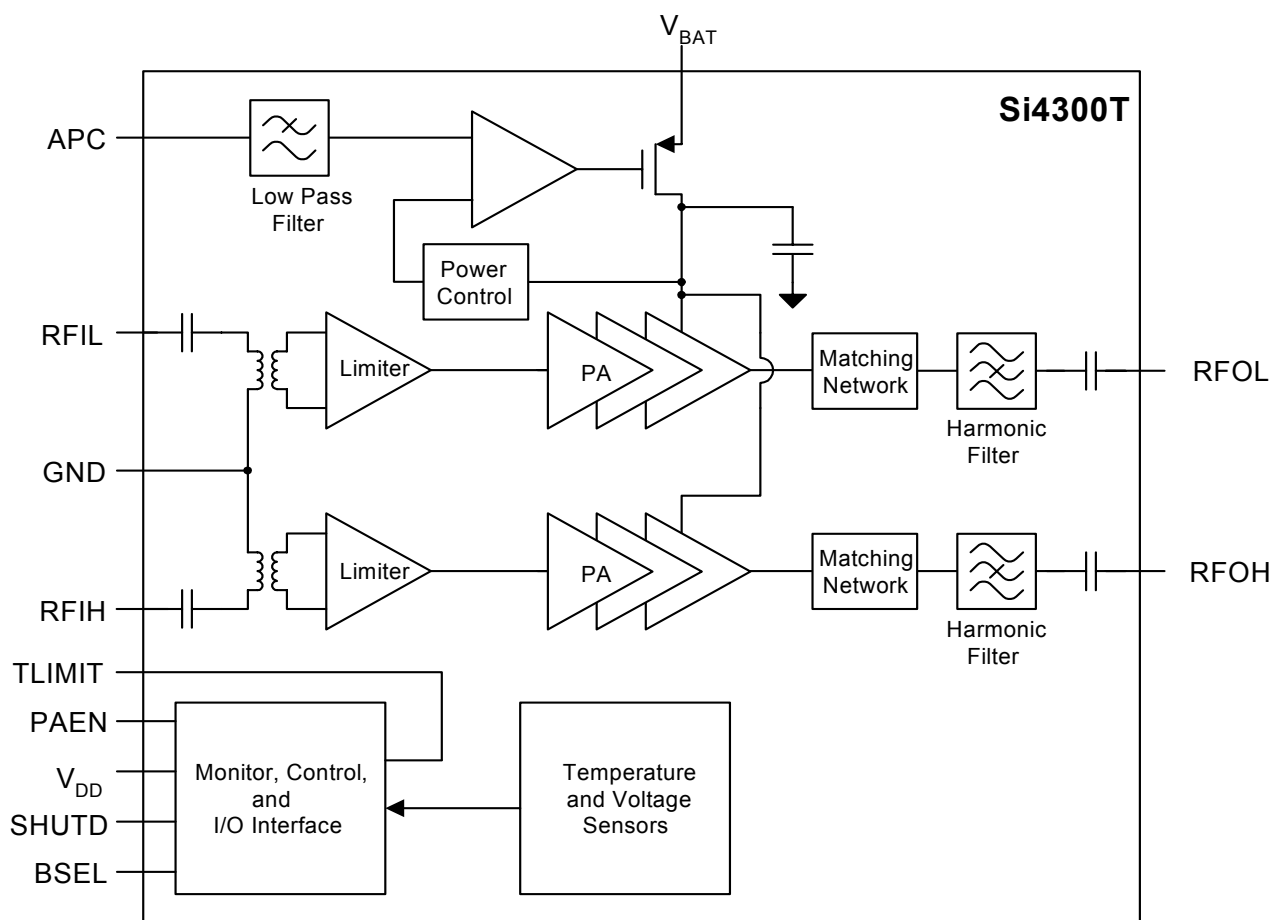
The Si4300T is a complete, monolithic, high-power, and high-performance power amplifier system that integrates all functions and all components between the transmit portion of the transceiver and antenna switch module (ASM). The integrated circuit consists of two amplification paths which supports GSM 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



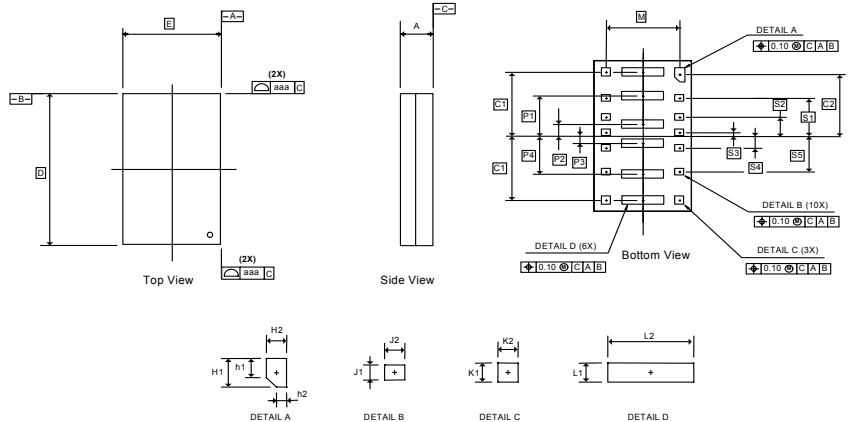
Selected Electrical Specifications

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 ≥ 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 ≥ 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 ≥ 1.4 dB	—	—	no damage or permanent degradation	

Pin Assignments

(Top View)			
N/C	1	NC 15	14
BSEL	2	GND 16	13
RFIL	3	V_{BAT} 17	12
GND	4	V_{BAT} 18	11
RFIH	5	V_{BAT} 18	10
APC	6	GND 19	9
N/C	7	NC 20	8
			RFOH
			PAEN
			TLIMIT
			SHUTD
			V_{DD}
			GND
			RFOL

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				