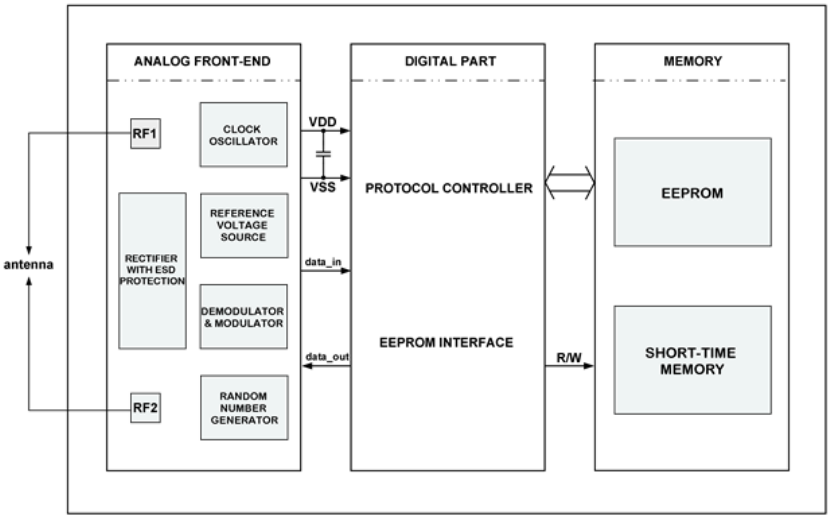
UHF RFID tag IC with 512bit EEPROM and -19dBm sensitivity

OVERVIEW

ND6005 is intended for use in passive UHF transponder applications. IC derives its operating power from an RF electromagnetic field generated by a reader, which is received and rectified by the chip. The chip sends the answer back to the reader using a backscatter modulation technique.
The chip provides a fast and flexible anti-collision protocol based on internal random number generator according to EPC standard. ND6005 supports all EPC C1G2 mandatory commands. ND6005 has a 512 bit EEPROM organized in 4 banks.



IP technology: SMIC EEPROM CMOS 180 nm.
IP status: pre-silicon verification.
Silicon area: 0.265 mm^2

ELECTRICAL CHARACTERISTICS

Parameter	Symbol	Conditions	Value			Unit
			min	typ	max	
Operating temperature	T_A	-	-40	25	+65	°C
Operating carrier frequency	F_c	-	860	-	960	MHz
RC oscillator frequency	F_{osc}	-	1.8	2.0	2.5	MHz
EEPROM retention time	t_{ret}	-	-	10	-	year
EEPROM write endurance	N_{end}	-	-	100k	-	cycle
Read sensitivity	P_{rd_min}	T_A = 25 °C	-	-19	-	dBm
Write sensitivity	P_{wr_min}	T_A = 25 °C	-	-16	-	dBm
Impedance	Z	F_c = 915 MHz	-	13-j260	-	Ω
EEPROM memory size	-	-	-	3.6	-	bit