

### General Description

The LIMMOD is an analog standard cell for UHF RFID applications. The cell consists of two parts. First section is a limiter that limits an input voltage to 3,4volt maximum level. Second section is a modulator which changes the electrical field of an antenna signal in an RFID tag chip. The limiter protects the following circuitry against higher input voltage, e.g. in close field proximity.

The modulator attenuates the incoming antenna signal and has to be stimulated accordingly by a digital core. An RFID reader at the other end of the communication channel demodulates the received TAG signal. This cell can be used with minor changes for HF (13.56MHz) tag ICs as well.

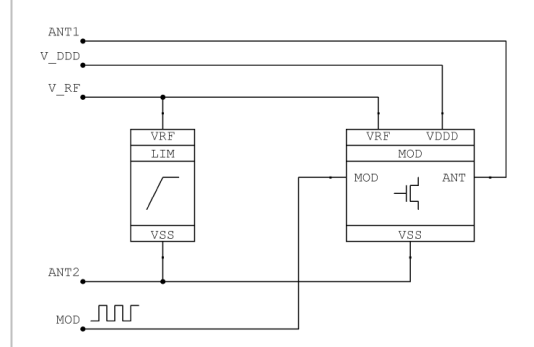
### Ratings, Parameters and Conditions

Parameter	Symbol	Min	Typ	Max	Unit	Comment
Antenna Power	$P_{ANT}$			1000	$\mu W$	General condition
Ambient Temperature	Temp		27		$^{\circ}C$	General condition
<b>Limiter</b>						
Supply Current	$I_{LIM}$			0.3	$\mu A$	$P_{ANT} < 60\mu W$
	$I_{LIM}$	0.3		105	$\mu A$	$P_{ANT} > 60\mu W$
Supply Voltage	$V_{RF}$			3,42	V	Rectifier voltage
<b>Modulator</b>						
Cycle Time (modulation signal)	$t_{Mlow}$		1		$\mu s$	Basic condition
	$t_{Mhigh}$		1		$\mu s$	Basic condition
Supply Voltage (digital part)	$V_{DDD}$		1,2		V	Basic condition
Supply Voltage	$V_{RF}$			3,42	V	Limiter voltage
Supply Current	$I_{DD}$			340	nA	during modulation period
Antenna Current	$I_{Ant}$			1,4	mA	during modulation period
Cycle Time (modulated antenna signal)	$t_{Alow}$	see modulation signal			$\mu s$	
	$t_{Ahigh}$	see modulation signal			$\mu s$	

### IO-Description

Interface	I/O	Function	Comment
ANT1	In-/Output	Antenna	Signal
ANT2	In-/Output	Antenna	Ground
$V_{RF}$	Input	Analog	Rectifier voltage
$V_{DDD}$	Input	Analog	Supply Voltage for digital part
MOD	Input	Digital	Modulation signal

### Symbol / external schematic



Dieses Projekt wird mit Mitteln des Europäischen Sozialfonds (ESF) gefördert. Es erzeugt einen gemeinschaftlichen Mehrwert „Investition in Ihre Zukunft“.