



## General Description

The rectifier is an analog IP Cell for 13,56MHz RFID applications. It is used to rectify the coupled magnetic power from a reader to a tag. In this case the rectifier has to be used with a limiter circuit to protect the circuitry against over voltage. The output voltage can be used to supply internal circuits. The rectifier provides a stable output voltage at different resistive loads.

At the output of this IP Cell there is a capacitor to bridge voltage drops (e.g. ASK modulation).

## Ratings, Parameters and Condition

| Parameter             | Symbol     | Min | Typ | Max | Unit | Comment                       |
|-----------------------|------------|-----|-----|-----|------|-------------------------------|
| Antenna voltage       | $V_{ANT}$  |     |     | 5,5 | V    | max. for internal transistors |
| Capacitor             | $C_{RECT}$ |     | 200 |     | pF   |                               |
| Operating temperature | $T_{op}$   | -40 | 27  | 80  | °C   |                               |

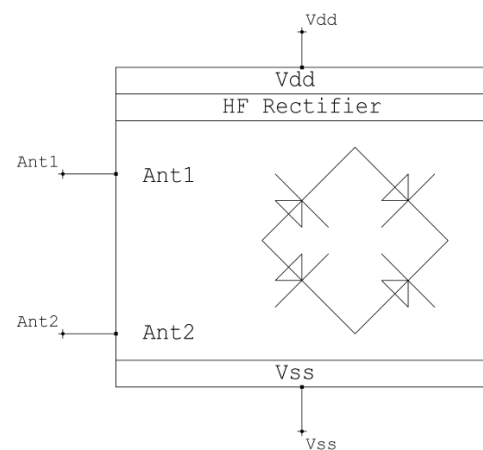
## Behaviour Rectifier

| Antenna voltage (V) | Resistive load (Ohm) | Rectifier voltage (V) |
|---------------------|----------------------|-----------------------|
| 2,0                 | 10k                  | 0,96                  |
| 2,0                 | 100k                 | 1,04                  |
| 2,0                 | 1Meg                 | 1,17                  |
| 3,0                 | 10k                  | 1,95                  |
| 3,0                 | 100k                 | 2,00                  |
| 3,0                 | 1Meg                 | 2,13                  |
| 4,0                 | 10k                  | 2,95                  |
| 4,0                 | 100k                 | 2,98                  |
| 4,0                 | 1Meg                 | 3,10                  |
| 5,0                 | 10k                  | 3,95                  |
| 5,0                 | 100k                 | 3,96                  |
| 5,0                 | 1Meg                 | 4,07                  |

## IO-Description

| Interface | I/O        | Function | Comment |
|-----------|------------|----------|---------|
| ANT1      | Input      | Antenna  | Signal  |
| ANT2      | Input      | Antenna  | Signal  |
| Vdd       | In-/Output | Supply   |         |
| Vss       | In-/Output | Supply   | Ground  |

## Symbol / external schematic



For more information please contact  
PE GmbH at:  
info@pe-gmbh.com

or visit our web site at:  
www.pe-gmbh.com



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