

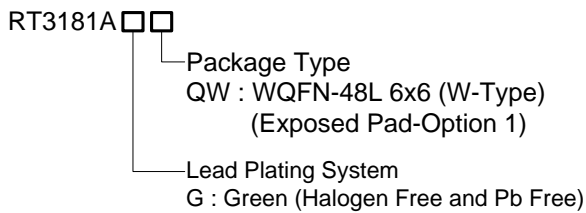
# Wireless Power Transmitter Controller for WPC BPP/EPP Solution

## General Description

The RT3181A is a highly integrated and scalable solution for wireless power transmitter applications for WPC/Qi, the mainstream standard today. The RT3181A can be configured to various type of transmitter in WPC definition.

- Single chip A11/a BPP TX, H-Bridge FETs integrated.
- A11/a BPP TX with external power stage
- A28/a multi-coil BPP TX
- Voltage rail control EPP TX, eg, MPA5, MPA11
- Frequency control EPP TX, eg, MPA2
- Wide input range for QC/PD TA input

## Ordering Information

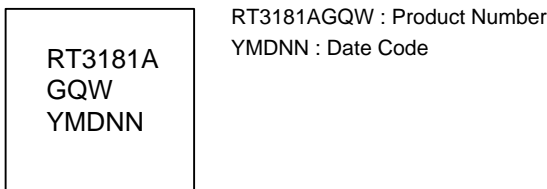


Note :

Richtek products are :

- ▶ RoHS compliant and compatible with the current requirements of IPC/JEDEC J-STD-020.
- ▶ Suitable for use in SnPb or Pb-free soldering processes.

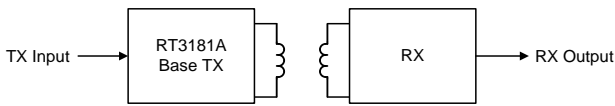
## Marking Informaton



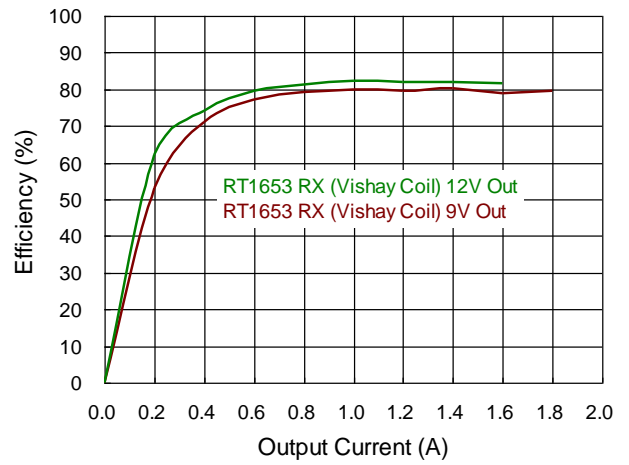
## Features

- Internal Flash for Easy Design and Firmware Upgrade
- Coil Driver
  - ▶ High Integration with Internal H-Bridge Power Stage and Current Sense Amplifier, Optimized for BPP A11 Solution
  - ▶ High Power with External Power Stage, with DrMOS or Discrete Gate Driver and MOSFETs
- DCDC Controller
  - ▶ Integrated Sync. Gate Driver
  - ▶ Drive External Dual NFET
  - ▶ Flexible to Configure as Sync. Buck or Sync Boost Converter
- EU EMC Compliant Solution
- Low Quiescent Current Plus
  - ▶ Selectable Ping Cycle in Custom Applications
  - ▶ Low Current Sleep Mode Options Including “Off” State with Wake Up I/O Pin
- Bi-Direction Communication Support, ASK and FSK
- Programmable thermal protection
- Support Foreign Object Detection, Q factor measurement and Field strength
- Notifications :
  - ▶ 1 Buzzer
  - ▶ 2 LEDs, Resistor Programmable
- Two I<sup>2</sup>C Interface, Master and Slave
- Reserved Interface for NFC/BT/WiFi Module Expansion
- Internal Watchdog Timer
- WQFN-48L 6x6mm package

Simplified Application Circuit

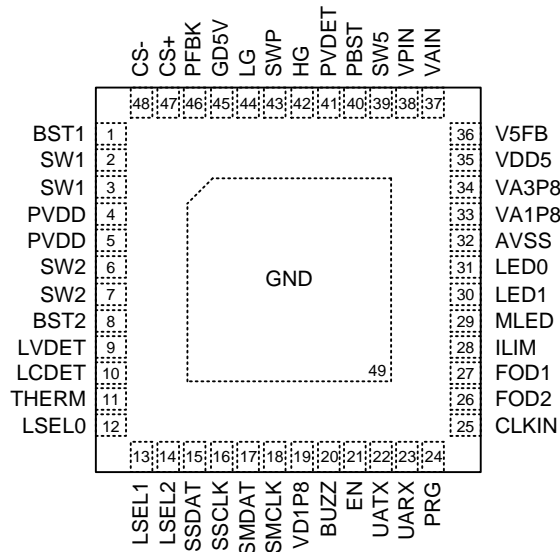


RT3181A Transmitter Efficiency (MP-A5)



Pin Configuration

(TOP VIEW)



WQFN-48L 6x6

**Typical Application Circuit**

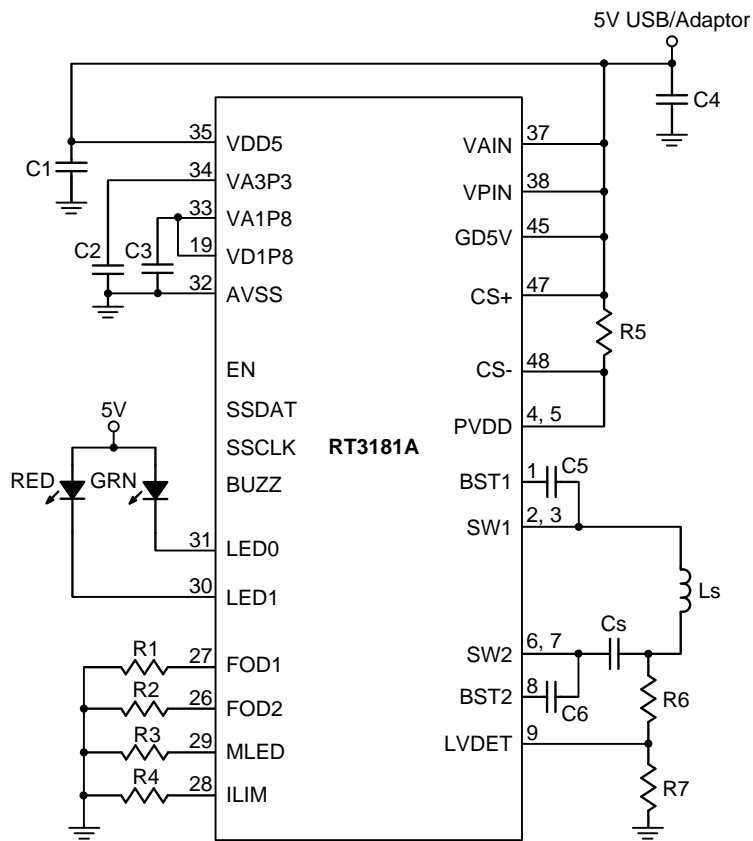


Figure 1. WPC LP A11 Minimized BOM Transmitter Application Circuit

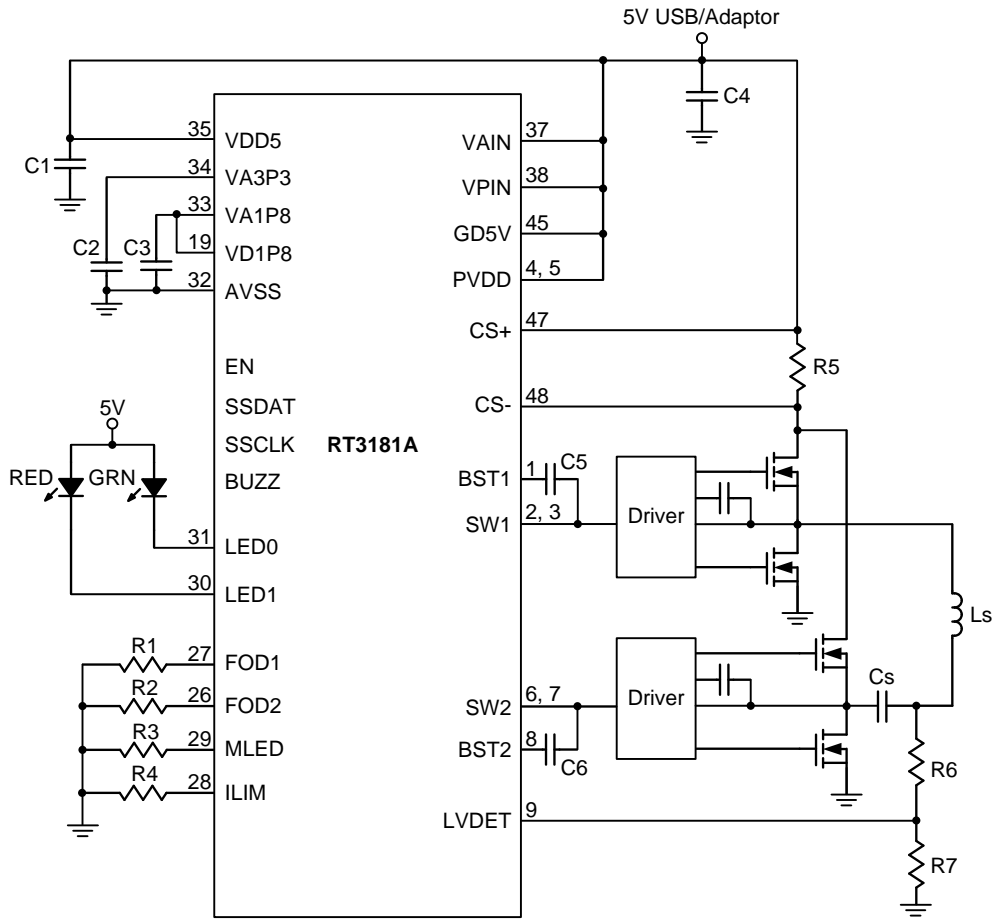


Figure 1. WPC LP A11 High Performance Transmitter Application Circuit

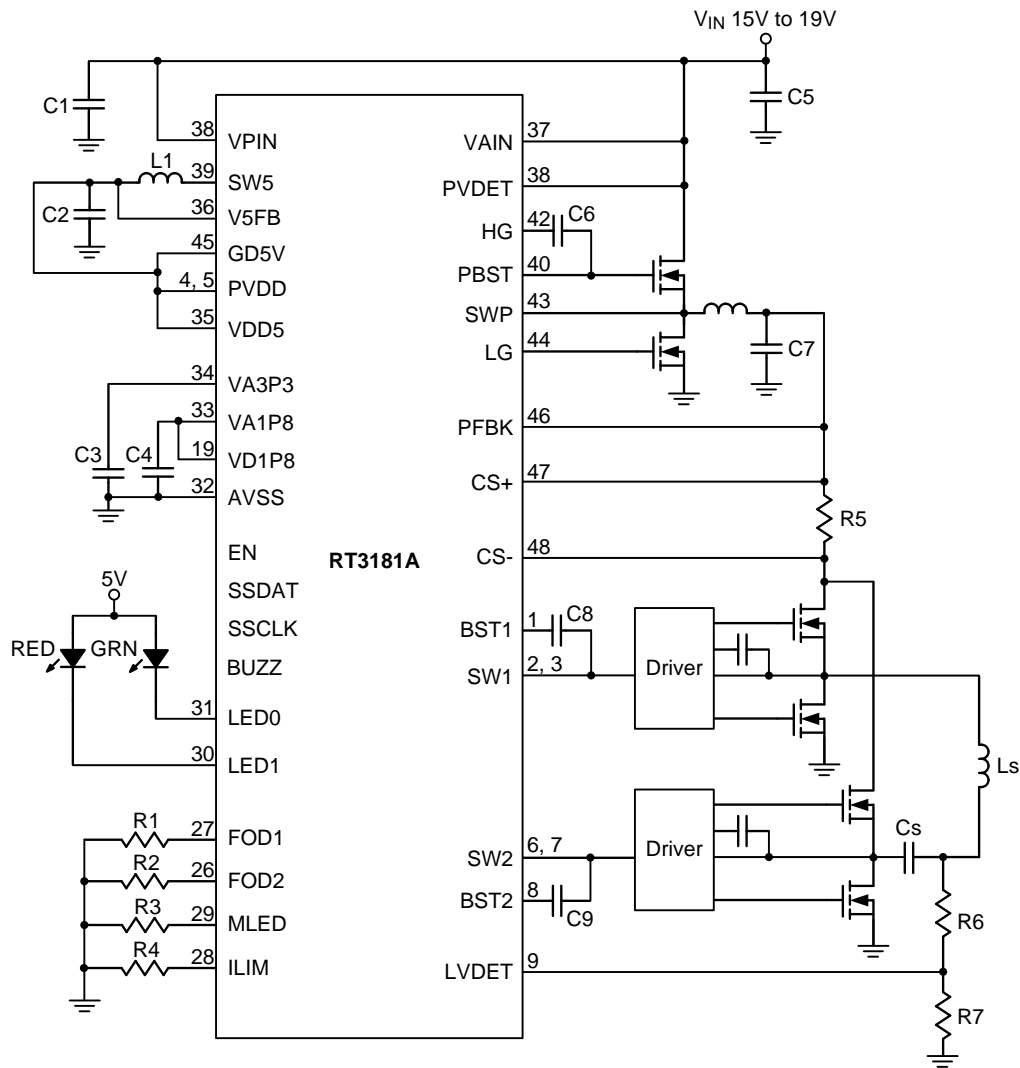
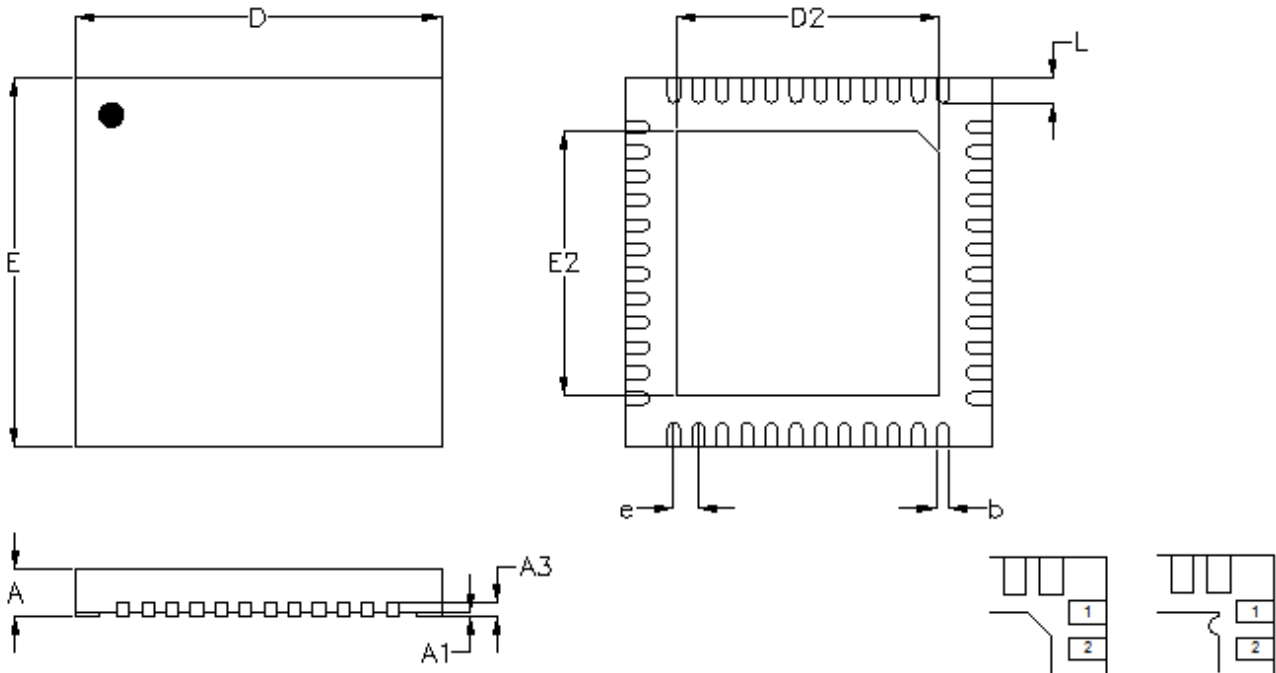


Figure 3. WPC MP-A5 Transmitter Application Circuit

Outline Dimension



**DETAIL A**

Pin #1 ID and Tie Bar Mark Options

Note : The configuration of the Pin #1 identifier is optional, but must be located within the zone indicated.

Symbol	Dimensions In Millimeters		Dimensions In Inches		
	Min	Max	Min	Max	
A	0.700	0.800	0.028	0.031	
A1	0.000	0.050	0.000	0.002	
A3	0.175	0.250	0.007	0.010	
b	0.150	0.250	0.006	0.010	
D	5.950	6.050	0.234	0.238	
D2	Option 1	4.250	4.350	0.167	0.171
	Option 2	4.350	4.450	0.171	0.175
E	5.950	6.050	0.234	0.238	
E2	Option 1	4.250	4.350	0.167	0.171
	Option 2	4.350	4.450	0.171	0.175
e	0.400		0.016		
L	0.350	0.450	0.014	0.018	

**W-Type 48L QFN 6x6 Package**

**Richtek Technology Corporation**

14F, No. 8, Tai Yuen 1<sup>st</sup> Street, Chupei City

Hsinchu, Taiwan, R.O.C.

Tel: (8863)5526789

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