

W I R E L E S S P O W E R

# **MANUAL**

**WP5080T – D130**

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**WP5060R – D130**

## Features

- Wide Input Range from 24 to 50V; Typical value 48V.
- 6.0-A Continuous Current, 6.5-A Maximum Current Limit.
- High Efficiency at Heavy Loads, Up to 89%(@118W 10mm)
- 72-KHz Fixed Switching Frequency
- Low No-load Current (70mA)
- High Power Output and Small Volume Receiver
- The Output Voltage can be Customized, 12V~50V, Default 50V.

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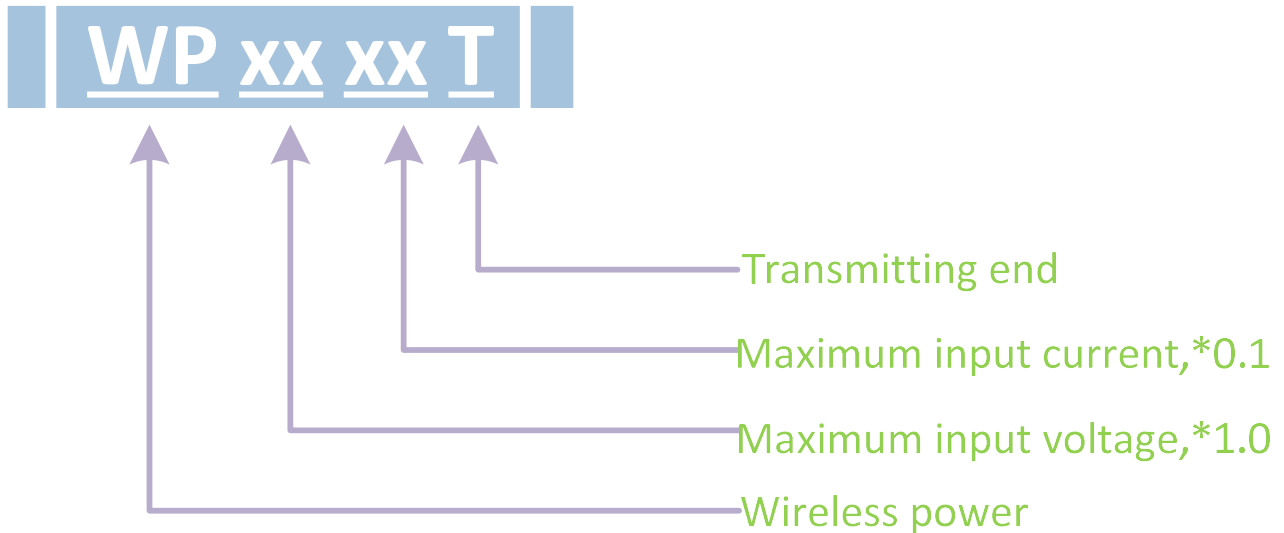
## Applications

- Wireless Charging.
- Industrial and Consumer Electronics.
- High Protection Occasions.
- High Speed Rotating Occasion.
- Isolated Power Supply.
- Wireless Induction Heating

# Model Introduction

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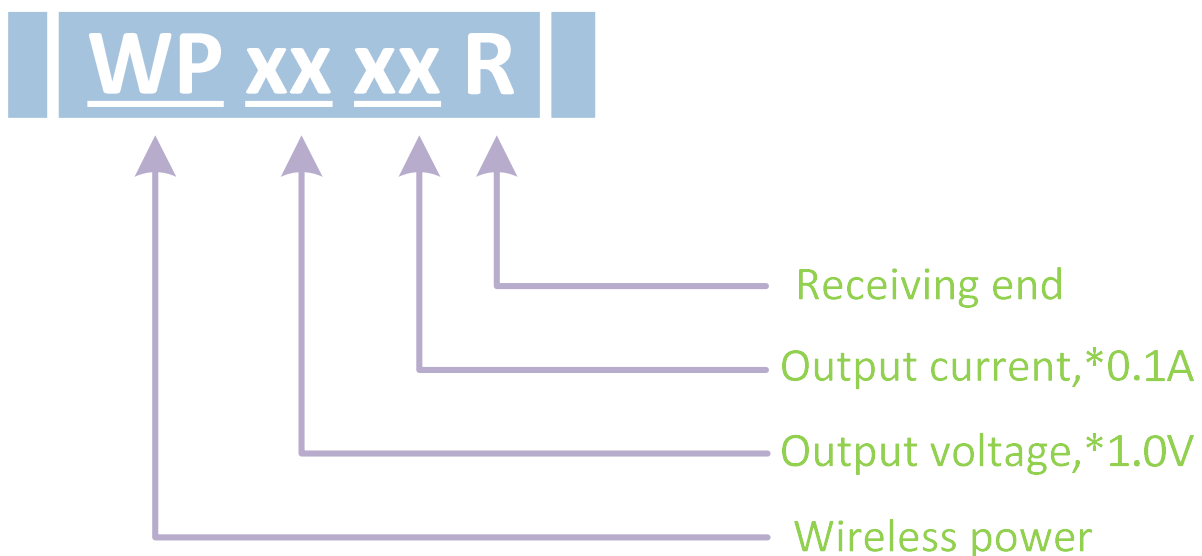
- The transmitter model is WP5080T.



D130 is the diameter of the coil; unit: mm

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- The receiver model is WP5060R.



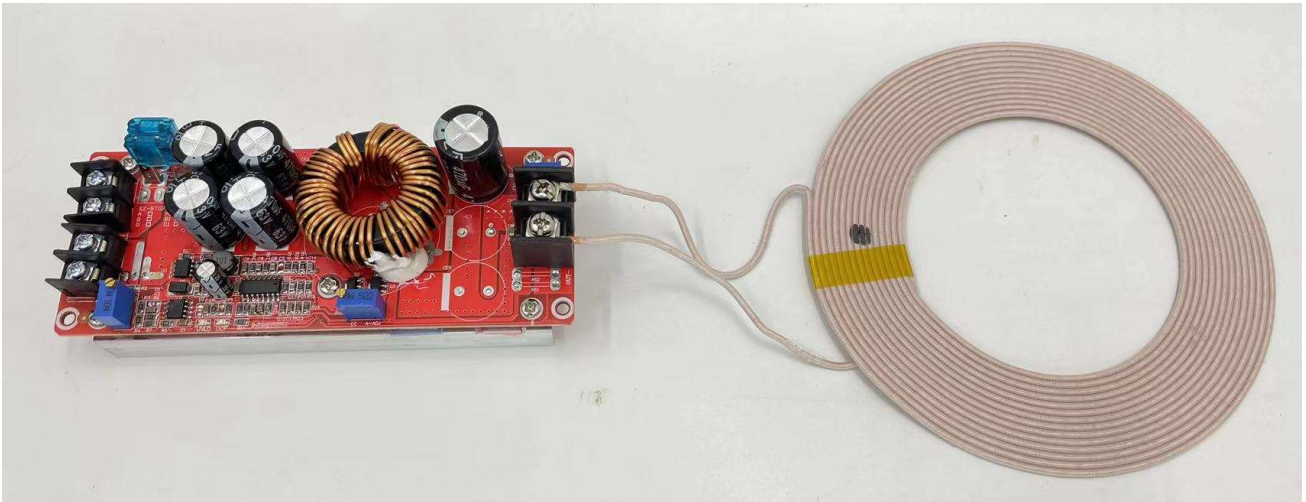
D130 is the diameter of the coil; unit: mm

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## Product Appearance

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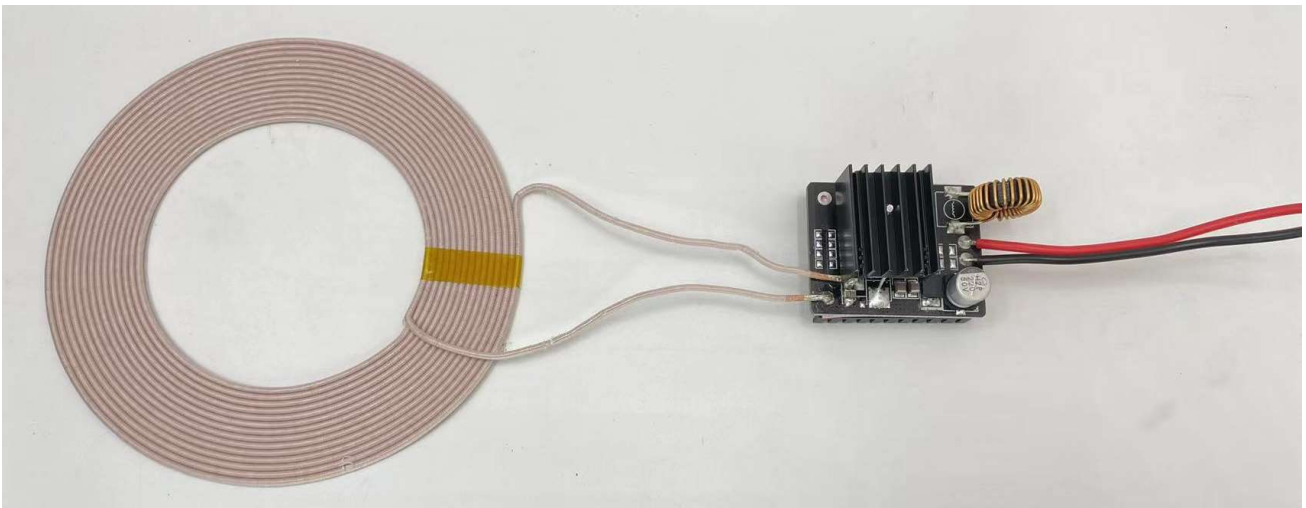
### ● The transmitter model:



The transmitter model matching coil

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### ● The receiver model:

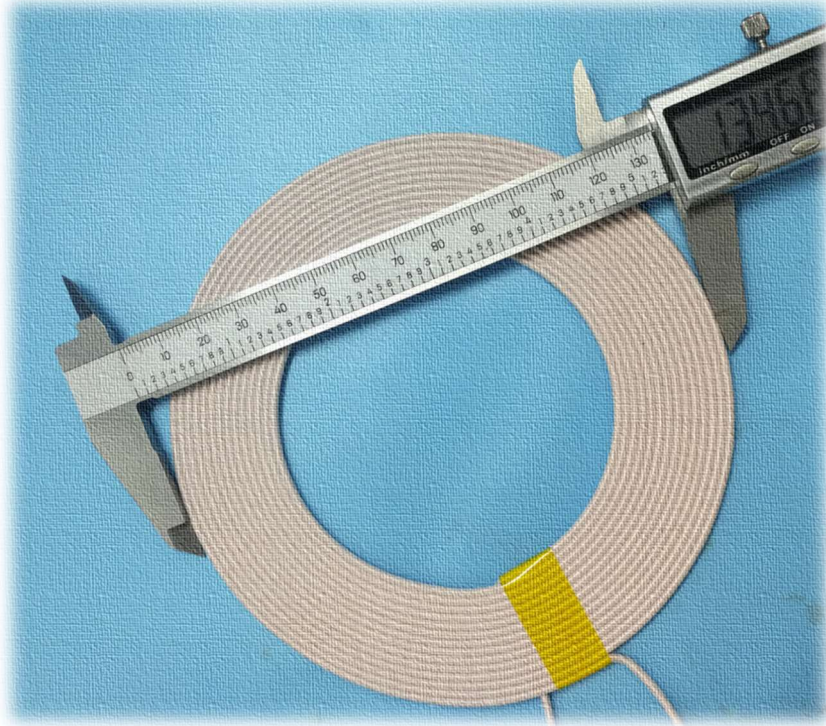


The receiver model matching coil

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# About the Coil

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## ● Structure Size:

The diameter of the coil is 135mm.

The inner diameter of the coil is 80mm

The thickness of the whole coil is 2.0mm

The diameter of wire is 2.0mm;

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## ● Electrical Parameters:

$L=30\mu\text{H}$ ; (Test conditions 10KHz 1V)

$Q=32$

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# System Assembly

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The coils space relationship is placed facing up and down, and there are direction about the coil.

The distance between coils must be greater than  $10\text{mm} \pm 1\text{mm}$ .

**Within the range of 11-25 mm, it is prohibited to use it when it is completely unloaded.**

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# Application of Battery charging

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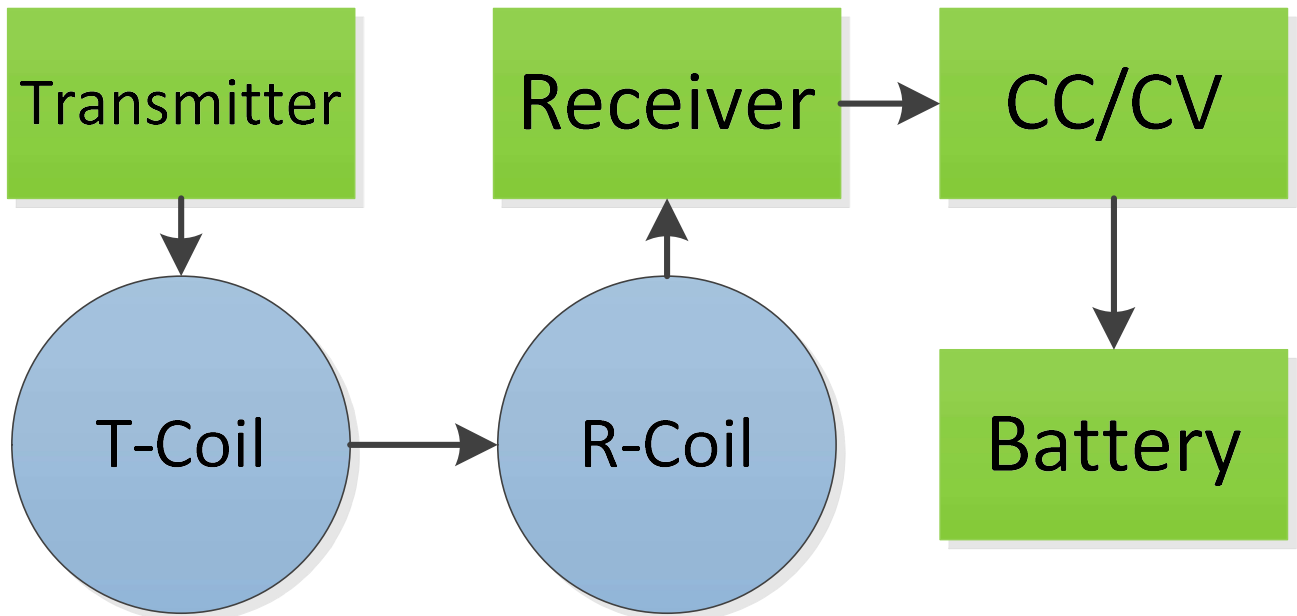
The receiver is constant voltage output mode: (CV)

C cannot charge the battery directly, A CC/CV module or charge management module must be added between them.

If the battery capacity is small, direct connection can be considered.

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## Connection diagram:



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# System Electrical Characteristics

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Characteristics	Symbol	Typ Value	Unit
Supply Voltage	$V_s$	48.0	V
Maximum input current	$I_{in}$	8.0	A
Output Voltage	$V_o$	50.0	V
Maximum output current	$I_o$	6.5	A
Maximum output power	$P_o$	300.0	W
Standby power	$P_s$	<3.4	W
System efficiency	$\eta$	<90.0	%
Power supply distance	$D_s$	>9.0	mm
Coil offset	$D_o$	10.0	mm
Operating Temperature	$T_o$	-20~40	°C



# Typical Characteristics

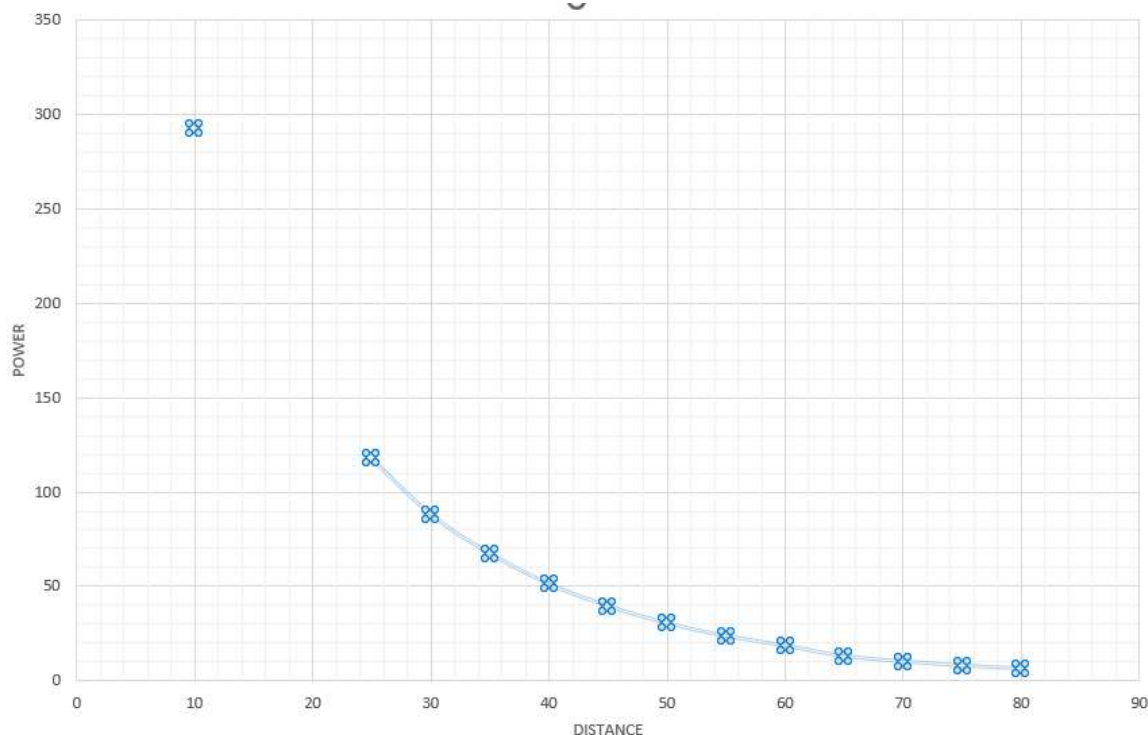


Figure 1. Maximum Output Power vs Coil Distance

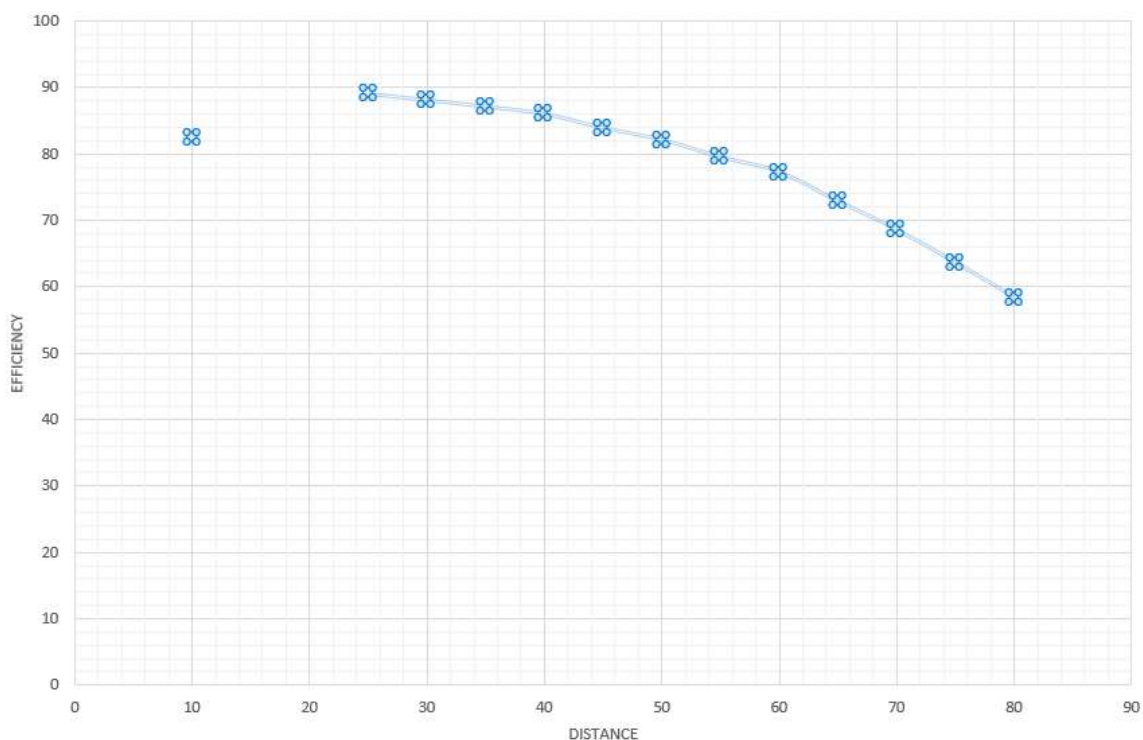


Figure 2. Efficiency at Maximum Power vs Coil Distance

## Attention

- The maximum operating voltage of transmitter is 50VDC.

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- The power capacity is greater than 400VA.

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- When using this product, the distance between the two coils should not be less than 10mm, otherwise there has the possibility of damage to the receiver.

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- When the receiving end works for a long time with high current, guarantee it has a good heat dissipation.

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- There should be no large metal between the two coils in using.

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- **Within the range of 11-25 mm, it is prohibited to use it when it is completely unloaded.**

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# Product series

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Pow Rang	Uin	Tye	Sys Fre	Uo	T-Coil	R-Coil	Distance	T	Status
0--1W	5-12V	12	20--300K	1.25--5V	<20mm	<20mm	0--10mm	FB	ACTIVE
	12--24V	24	20--150K	AC-LED	200mm	5mm	>300mm	FB	ACTIVE
	12--48V	48	500-1000K	AC-LED	200mm	200mm	>1200mm	EC	ACTIVE
	9--12V	12	2MHz	AC-LED	100-200mm	100-200mm	>1000mm	EC	ACTIVE
1--10W	5--24V	12	20--150K	3.3--12V	20--200mm	20--200mm	0--100mm	FB	ACTIVE
	12--48V	48	500-1000K	3.3--24V	40--200mm	40--200mm	0--250mm	EC	ACTIVE
10--30W	12--30V	24	20--150K	5--24V	40--200mm	40--200mm	0--50mm	FB	ACTIVE
	12--48V	48	500-1000K	5--24V	40--200mm	40--200mm	20--200mm	EC	ACTIVE
30--50W	12--48V	24	20--150K	12--80V	40--200mm	40--200mm	0--50mm	FB	ACTIVE
	12--48V	48	500-1000K	12--80V	40--200mm	40--200mm	20--150mm	EC	ACTIVE
50--100W	12--80V	48	20--150K	12--80V	40--200mm	40--200mm	0--20mm	FB	ACTIVE
	12--80V	48	500-1000K	12--80V	90--200mm	90--200mm	20--200mm	EC	ACTIVE
100--150W	12--80V	48	500-1000K	24--80V	90--200mm	90--200mm	20--100mm	EC	ACTIVE
	12--80V	48	20--150K	24--80V	90--200mm	90--200mm	0--20mm	FB	ACTIVE
150--200W	12--48V	48	20--150K	24--80V	90--200mm	90--200mm	0--20mm	FB	ACTIVE
	12--80V	48	500-1000K	24--80V	90--200mm	90--200mm	20--100mm	EC	ACTIVE
200--300W	12--80V	48	20--150K	24--80V	90--200mm	90--200mm	0--20mm	FB	ACTIVE
	12--80V	48	500-1000K	24--80V	90--200mm	90--200mm	20--100mm	EC	ACTIVE
300W+	12--80V	48	20--150K	24--80V	90--200mm	90--200mm	0--20mm	FB	ACTIVE
	12--80V	48	20--150K	24--80V	90--200mm	90--200mm	20--100mm	EC	ACTIVE

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## Customization

If the existing products cannot meet your needs, we can provide customized services.

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## Demand Grid

Including electrical parameters, structure and special requirements (not necessary).

<b>Input Voltage</b>	<b>Output Voltage</b>	<b>Output Current</b>
<b>Distance</b>	<b>SIZE of T-COIL</b>	<b>SIZE of R-COIL</b>
<b>Frequency</b>	<b>Working Condition</b>	<b>Efficiency</b>

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## Professional needs

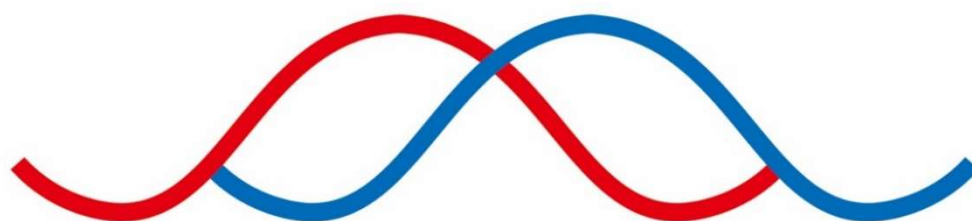
If you need to integrate our circuit into your own products, we can provide schematic and BOM.

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## Revision History

Date	Version	Content	Author
2022.05.10	V1.0	1. New design of WP5080T&WP5060R ;	Chumy

# Design by



WIRELESSPOWER

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