

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

MANUAL

WP3650T - D55

&

WP2450R - D55

Features

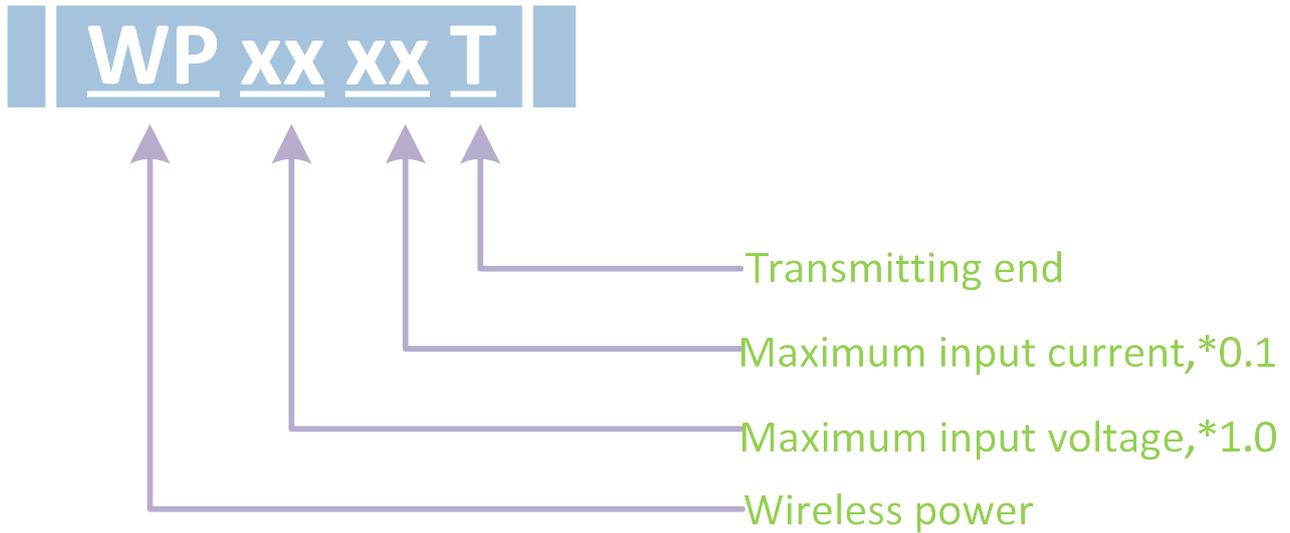
- Wide Input Range from 24 to 36V; Typical value 36V.
- 4.0-A Continuous Current, 5.0-A Maximum Current Limit.
- High Efficiency at Heavy Loads, Up to 91% (@107W 5mm)
- No Additional Heat Dissipation is required at The Transmitter
- 108-KHz (@36V) Fixed Switching Frequency
- Low No-load Current (60mA)
- High Power Output and Small Volume Receiver
- Magnetic Shielding Coil, Fearless of Metal and other Electronic Equipment
- The Output Voltage can be Customized, 5V~48V, Default 24V.

Applications

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

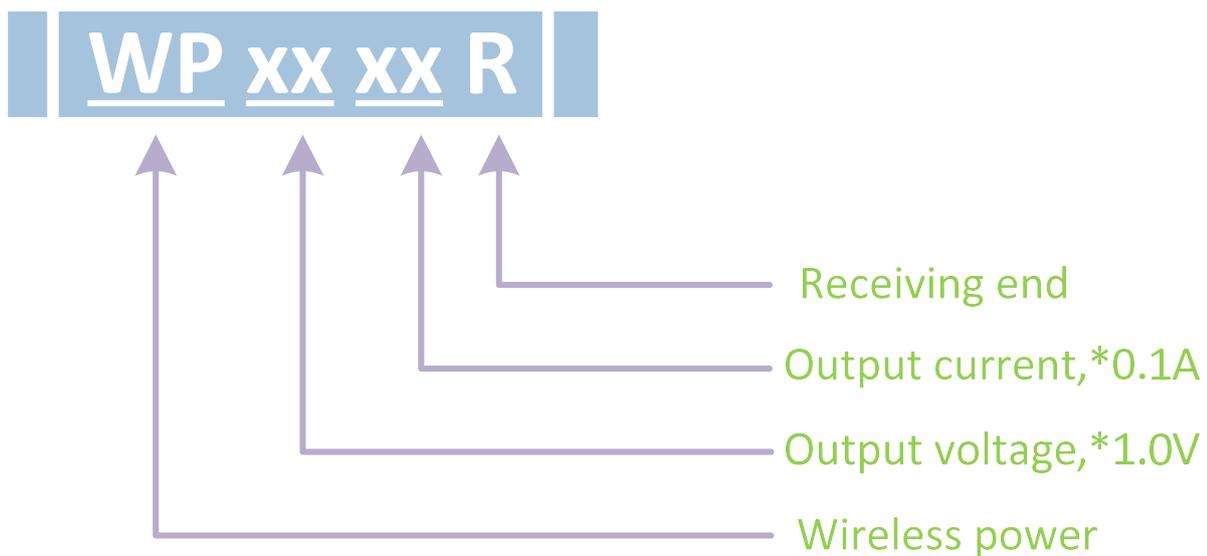
Model Introduction

- The transmitter model is WP3650T.



D55 is the diameter of the coil; unit: mm

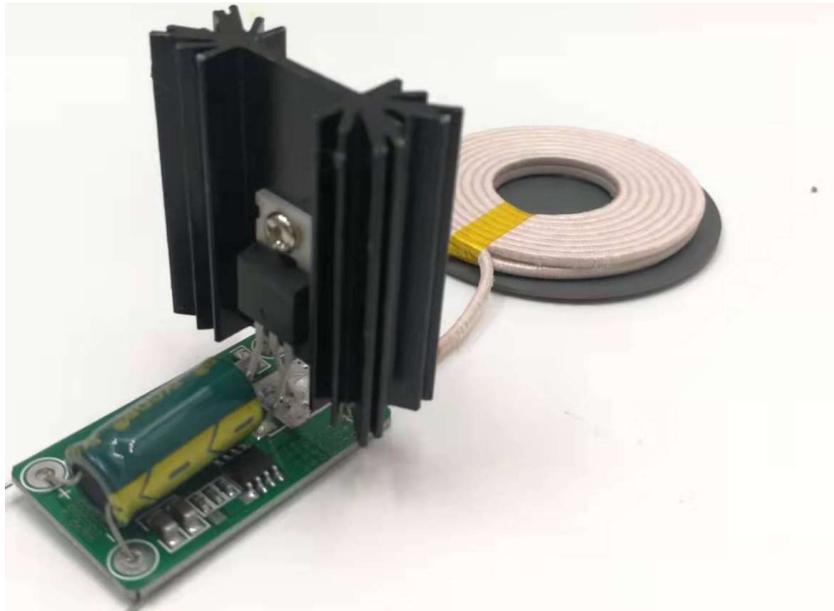
- The receiver model is WP2450R.



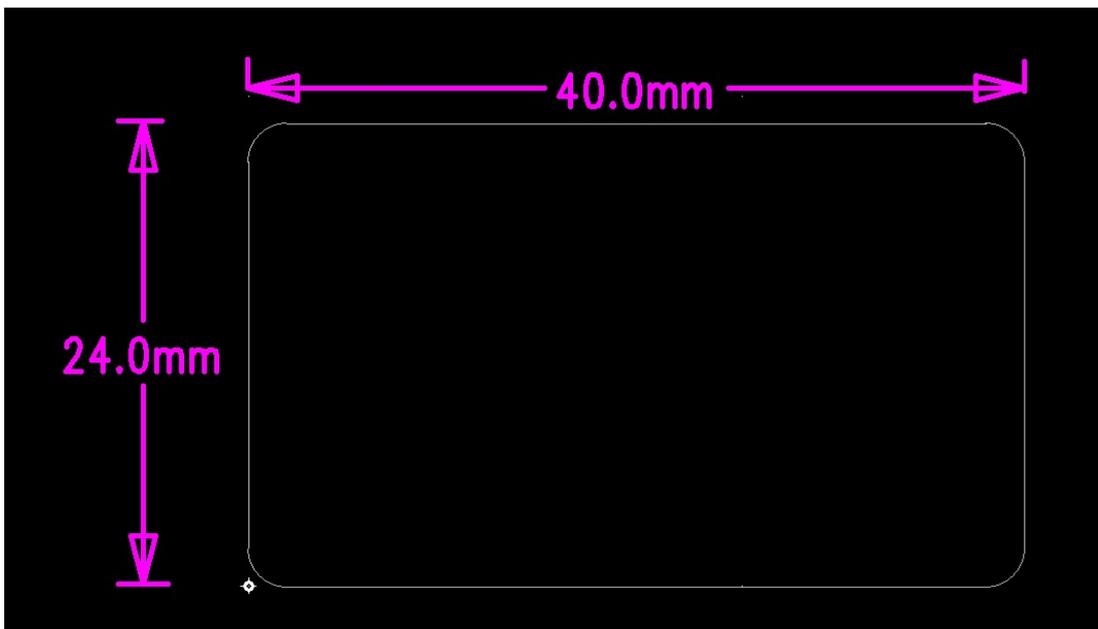
D55 is the diameter of the coil; unit: mm

Product Appearance

- The transmitter model :



The transmitter model matching coil

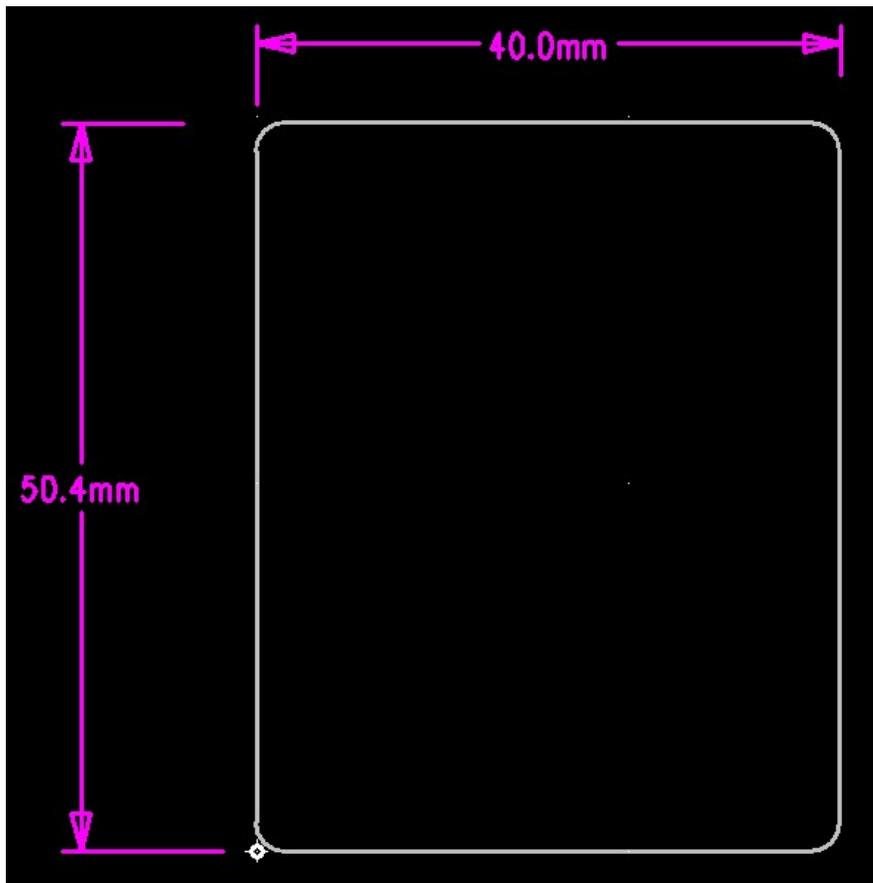


PCB:L*W =40mm*24mm;

● The receiver model:

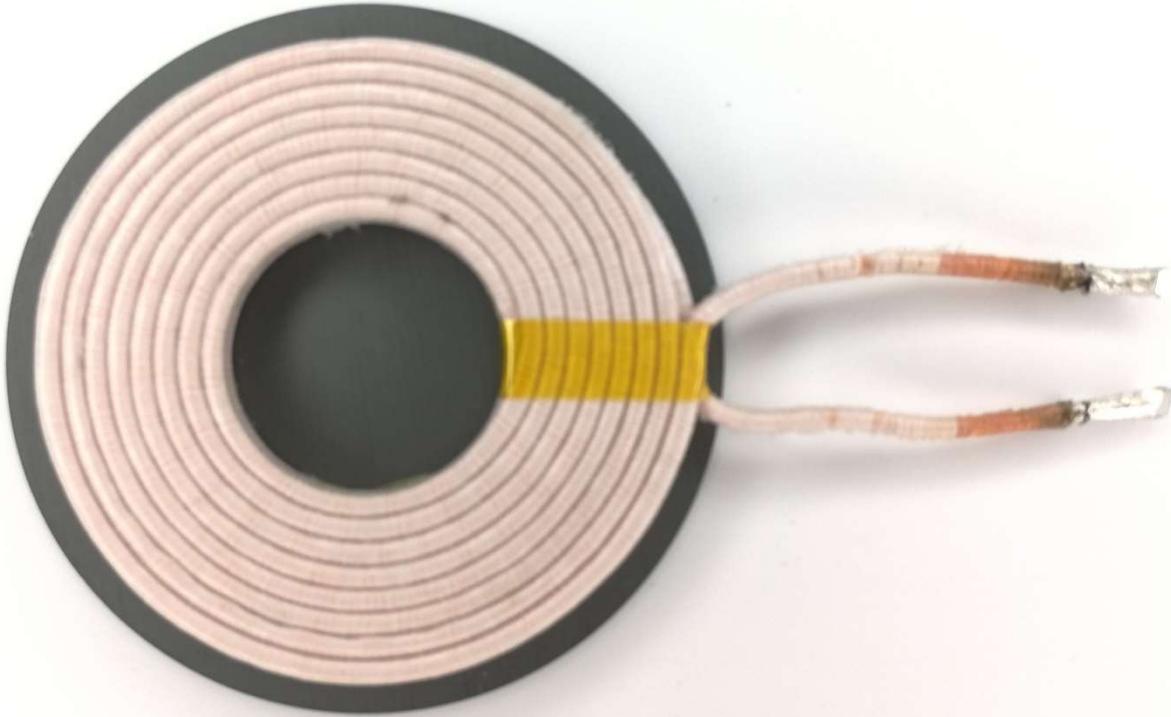


The receiver model matching coil



PCB:L*W=45mm*15mm;

About the Coil



● Structure Size:

The diameter of the coil is 55mm.

The thickness of the whole coil is 5.1mm

The diameter of wire is 1.8mm;

● Electrical Parameters:

$L=14\mu H$; (Test conditions 10KHz 1V)

$Q=32$

System Assembly



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 5mm



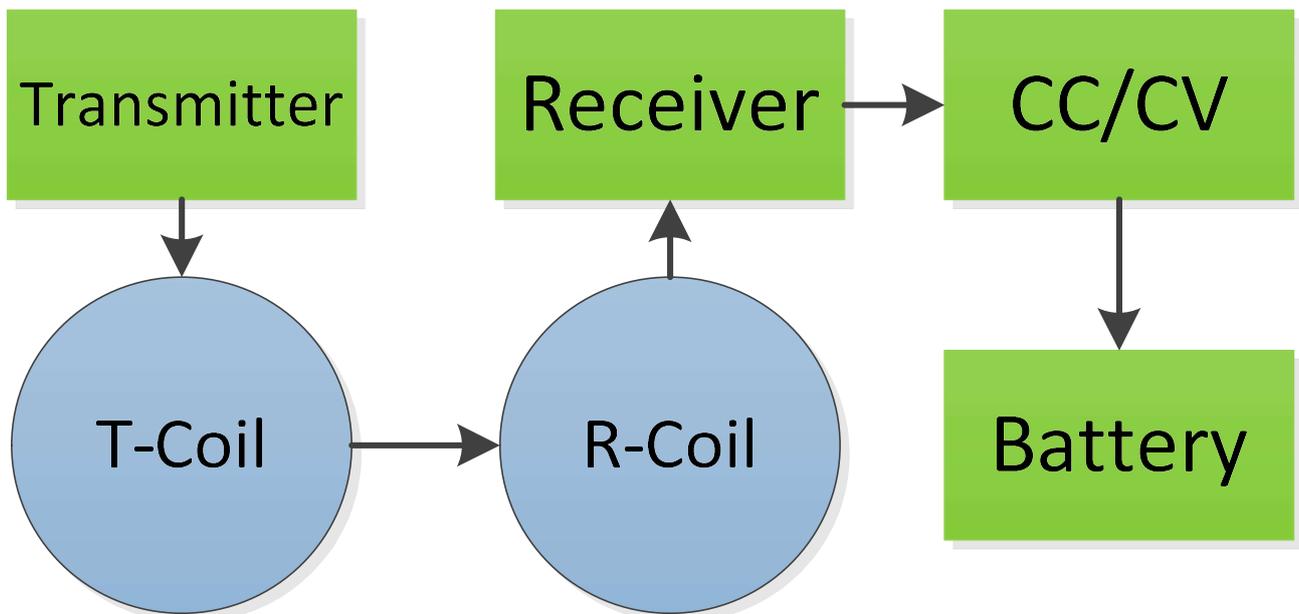
Application of Battery charging

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.

Connection diagram:



System Electrical Characteristics

Characteristics	Symbol	Typ Value	Unit
Supply Voltage	V_s	36.0	V
Maximum input current	I_{in}	5.0	A
Output Voltage	V_o	24.0	V
Maximum output current	I_o	5.0	A
Maximum output power	P_o	110.0	W
Standby power	P_s	<2.2	W
System efficiency	η	<95.0	%
Power supply distance	D_s	>5.0	mm
Coil offset	D_o	5.0	mm
Operating Temperature	T_o	-20~40	°C

Typical Characteristics

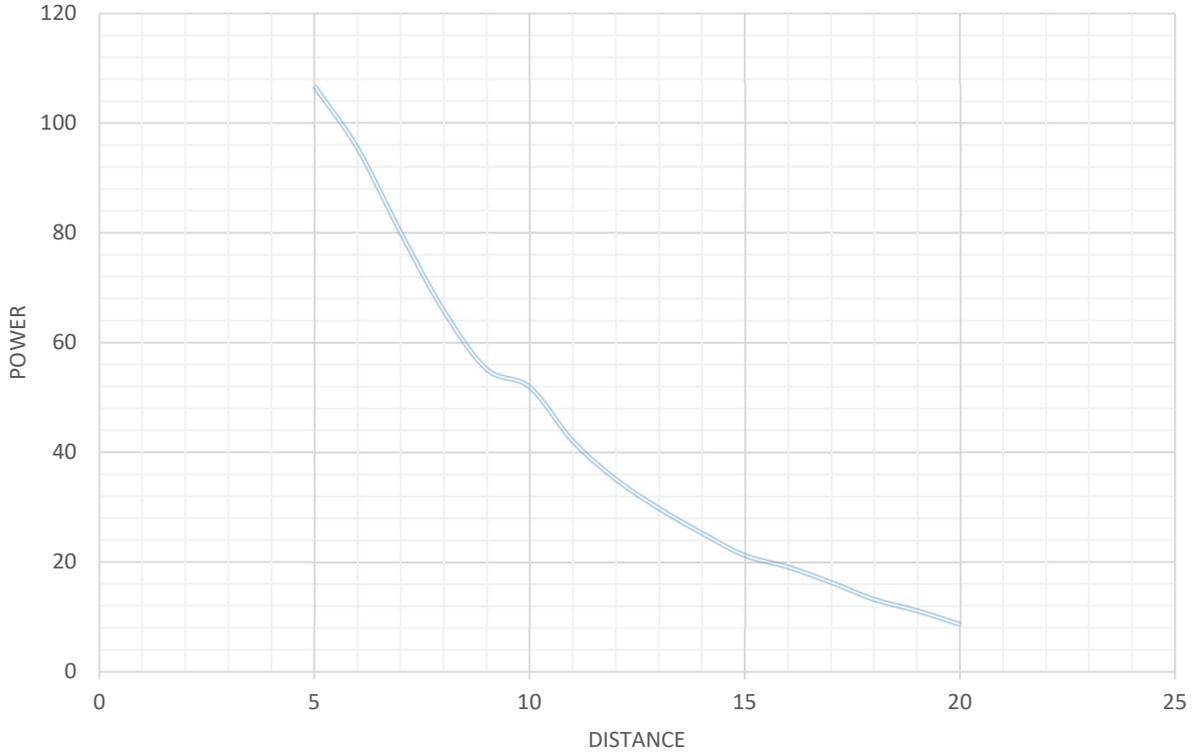


Figure 1. Maximum Output Power vs Coil Distance

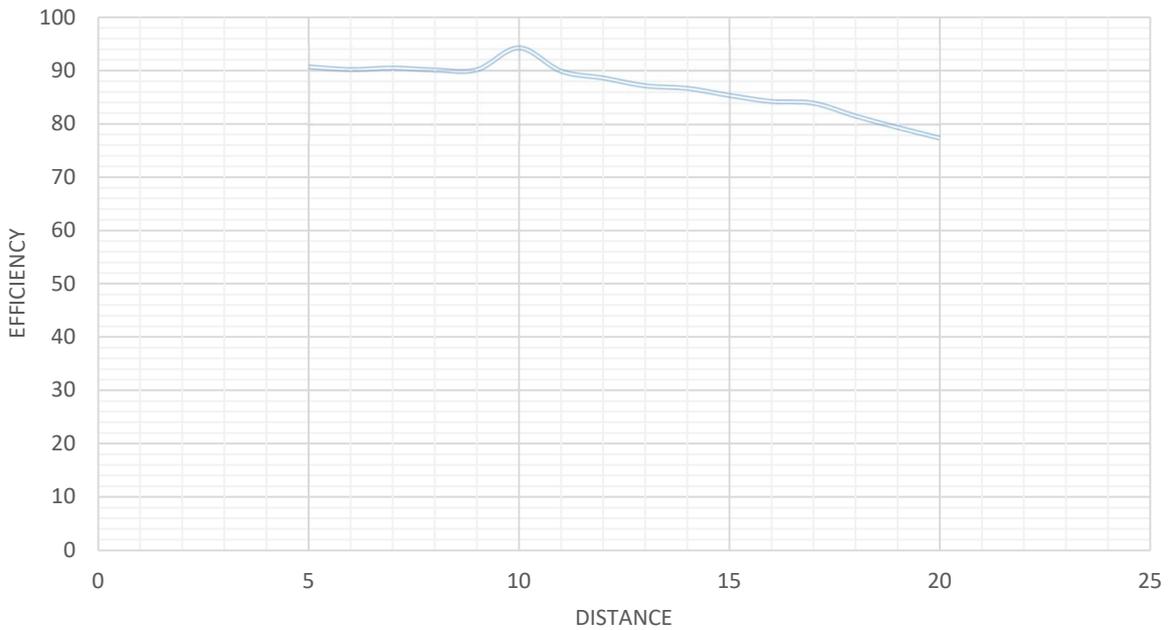


Figure 2. Efficiency at Maximum Power vs Coil Distance

Attention

● The maximum operating voltage of transmitter is 36VDC. The higher input voltage, the better performance of the receiver.

● The power capacity is greater than 144VA.

● When using this product, the distance between the two coils should not be less than 5mm, otherwise there has the possibility of damage to the receiver.

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

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

Product series

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

Customization

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

Demand Grid

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

Input Voltage	Output Voltage	Output Current
Distance	SIZE of T-COIL	SIZE of R-COIL
Frequency	Working Condition	Efficiency

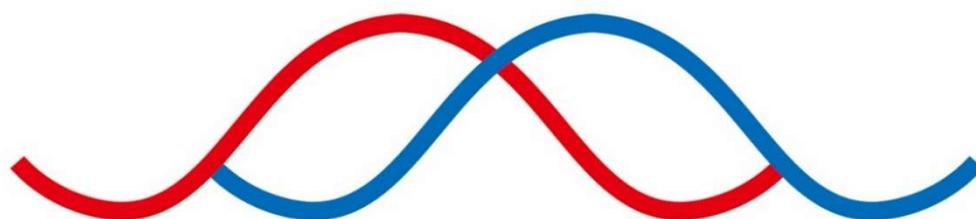
Professional needs

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

Revision History

Date	Version	Content	Author
2022.08.10	V1.0	1. New design of WP3650T&WP2450R ;	Chumy

Design by



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