

# Wireless Charging Tx and Rx Coils Provide Moisture Resistance Up to 90 % RH in a Reduced Footprint, Offer Power Ratings Up to 30 W, High Temperature Operation to +105 °C, and Saturation Currents to 22 A

## Product Benefits:

- Provide moisture resistance up to 90 % RH
- Offer high temperature operation to +105 °C
- Available in compact footprints
- Self-binding, enameled copper winding (Rx coil)
- Tx coils maximize power transfer to the receiver element
  - Low DCR down to 40 mΩ
  - Q up to 200
  - Heat rating current to 7 A
- With high saturation currents up to 22 A, Tx coils ensure stable inductance and consistent performance across the operating current range
- Silk-covered litz wire protects against scratching and wire deformation, provides improved insulation, and reduces the electrical skin effect and proximity losses (Tx coils)
- Alpha winding technique eliminates wire crossover and achieves the lowest profile possible (IWTX4646DCEB240JR and IWTX47R0EBEB240JR1)
- RoHS-compliant, halogen-free, and Vishay Green
- Available in rectangular, square, and round form factors



## Market Applications:

- Handheld, battery-powered tools and diagnostic and therapeutic instruments; drones; smartphones and tablets; gaming controllers; and wearable devices

## The News:

Vishay Intertechnology introduces new powdered iron based wireless charging transmitter (Tx) and receiver (Rx) coils optimized for high humidity conditions up to 90 % RH. Designed for industrial, medical, and consumer electronics applications up to 30 W, the Vishay Dale IWAS3222CZEB190JR1, IWTX4646DCEB240JR1, IWTX47R0DAEB6R3JR1, and IWTX47R0EBEB240JR1 offer high temperature operation to +105 °C in 25 % smaller footprints than previous-generation devices and competing solutions.

- The coils' high moisture resistance results from their specialized shield coating, which provides superior environmental protection
- The devices' high saturation powdered iron makes them immune to the temperature fluctuations and sharp inductance drop-off behavior observed in ferrite-based solutions
- Shield material selection is critical, as it is used to boost the inductance of the coil, contain any flux leakage, and maximize flux directivity

## The Key Specifications:

Part #	IWAS3222CZx	IWTX4646DCx	IWTX47R0DAx	IWTX47R0EBx
Inductance	19.6 μH	24 μH	6.3 μH	24 μH



# NEW PRODUCT INFORMATION



Product Group: Vishay Dale, Inductors / September 2024

<b>Power rating</b>	5 W	30 W	30 W	30 W
<b>Q (typ.)</b>	28.5	185	190	200
<b>DCR (typ.)</b>	357 mΩ	75 mΩ	40 mΩ	75 mΩ
<b>I<sub>RMS</sub> (max.)</b>	1.2 A	7 A	7 A	6 A
<b>I<sub>SAT</sub> (max.)</b>	2.4 A	20 A	22 A	20 A
<b>Footprint</b>	32 mm x 22 mm	46 mm x 46 mm	47 mm diameter	47 mm diameter
<b>Thickness</b>	3 mm	5.26 mm	5.3 mm	5.26 mm
<b>Shield shape</b>	Rectangular	Square	Round	Round
<b>Function</b>	Rx	Tx	Tx	Tx

## Availability:

Samples and production quantities of the IWAS3222CZEB190JR1, IWTX4646DCEB240JR1, IWTX47R0DAEB6R3JR1, and IWTX47R0EBEB240JR1 are available now, with lead times of 14 weeks.

To access the product datasheets on the Vishay Website, go to

<http://www.vishay.com/ppg?34597> (IWAS3222CZEB190JR1)  
<http://www.vishay.com/ppg?34599> (IWTX47R0DAEB6R3JR1)  
<http://www.vishay.com/ppg?34600> (IWTX47R0EBEB240JR1)  
<http://www.vishay.com/ppg?34598> (IWTX4646DCEB240JR1)

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