

# High power transformer for switching power supply

Introduction of elemental technologies

TDK can support various transformers designs using our unique simulation technology.

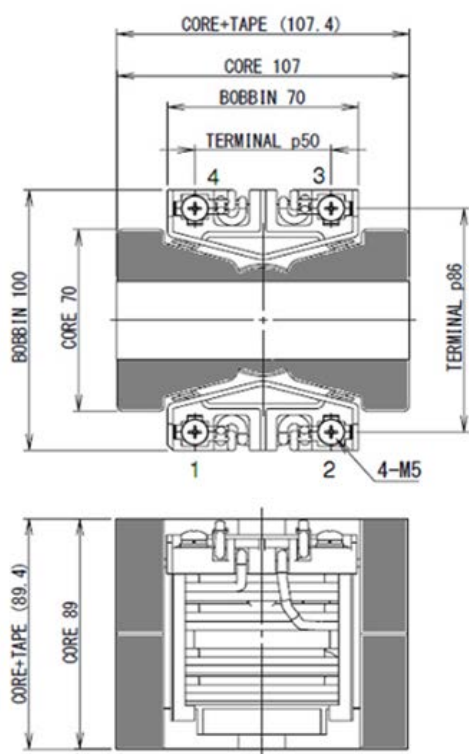
## Features of TDK products

TDK develops high-performance ferrite materials that are optimal for our products as we take pride in being the first company in the world to commercialize ferrite.

We develop high power transformers for switching power supply that maximize this feature.

We propose high-quality and stable production transformers by appropriately capturing the usage environment and operating conditions of the set and optimizing the materials, shapes, windings, and circuits from the initial stage.

## ■ Dimensions (an example of a custom design)



- Adopt a newly developed material that achieves low loss at high temperatures of 100°C or higher
- Support 12.4kW at 107.4 (L) x100.0 (W) x89.6 (H) mm
- High quality and stable supply is achieved by automating the winding and the soldering processes.
- Applicable for screw terminals and faston terminals
- Compatible with lead-free solder
- RoHS directive-compliant
- It is also possible to change to solderless

## ■ Applications:

Industrial equipment, power supply for facilities and others



Image

## ■ Electrical characteristics

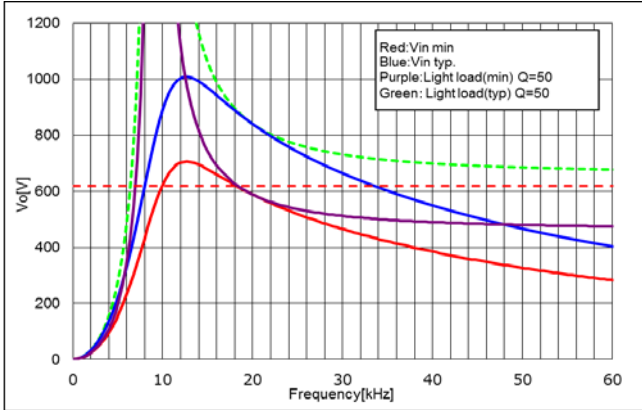
|                  |  |
|------------------|--|
| Design example   | 12.4kW chamber type transformer for industrial equipment |
| Shape / quantity | MDT107PQS / 1 piece                                      |

|                           |  |                    |             |         |      |
|---------------------------|--|--------------------|-------------|---------|------|
| Circuit method            | Full bridge LLC current resonance Resonance L built-in a transformer |                    | NP:NS       | 16 : 24 |      |
| Input / output conditions | IN DC (V)  | 300~500            | Parameters※ | Lp (μH) | 200  |
|                           | OUT Vo   | 620V 20A (12.4kW)  |             | Lr (μH) | 40.4 |
| Drive conditions          | fsw (kHz)  | 20 (Typ.)          |             | Cr (μF) | 1.5  |
|                           | Cooling  | Forced air cooling | mass (Kg)   | 2.2     |      |

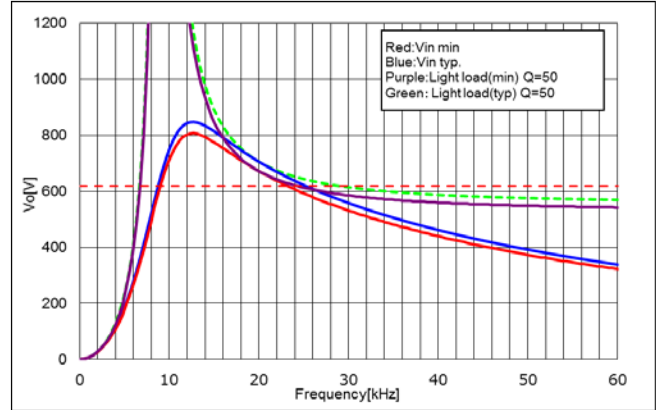
※They are calculated values and may vary slightly.

## ■ AC analysis graph

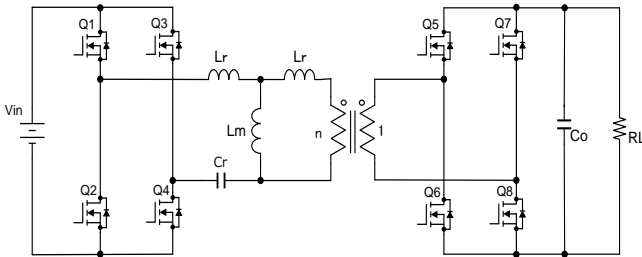
Vin=350V,500V Light load, Maximum load



Vin=400V,420V Light load, Maximum load



## ■ Equivalent circuit

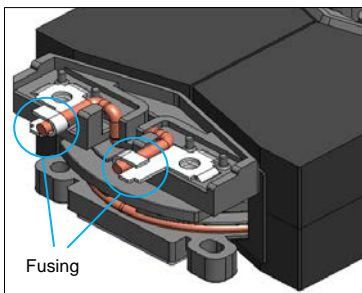


## ■ Other related elemental technologies

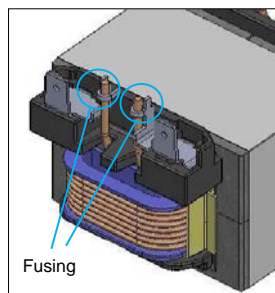
### Solderless (fusing)

Fusing to connection area of wire and terminal

Product with screw terminals

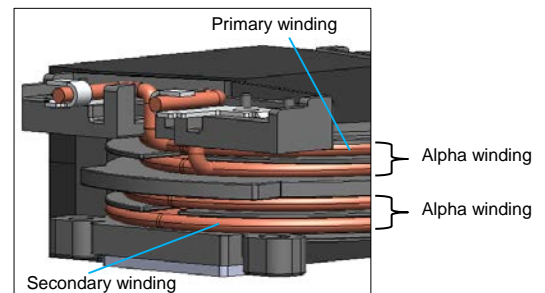


Product with faston terminals



### Separated coils structure and alpha winding

Stabilization of leakage inductance and miniaturization of the product



Contact:

<https://product.tdk.com/info/en/contact/index.html>

⚠ Please note that the contents may change without any prior notice due to reasons such as upgrading.