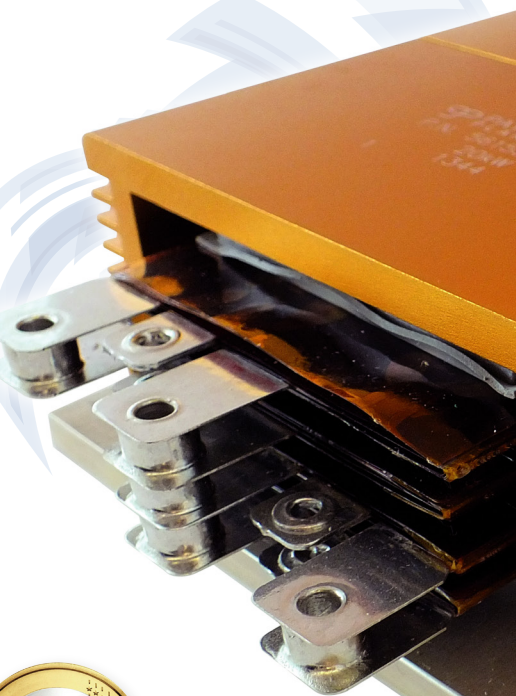


## SIZE 5000

Power Capacity 5 to 20kW



### Description

Payton SIZE 5000 provides a planar solution for very high power applications (such as traction, induction heating etc.) providing high efficiency, low EMI, excellent repeatability, low profile and weight with an operating temperature range of -40°C to +130°C.

### 1. Transformer Application

POWER CAPACITY	DIMENSIONS (mm)	TYPICAL WEIGHT	DIELECTRIC ISOLATION	OPERATING VOLTAGE	OPERATING CURRENT (RMS)
5kW, forward at 50 kHz 20kW, full bridge at 100 kHz	L = 180-230 W = 104-145 H = 20-60	2-3 kg.	500 V <sub>DC</sub> - 4k V <sub>rms</sub>	1000 V <sub>peak</sub> max.	1000 A max.

Typical efficiency: 97-99%

Recommended frequency range: 20 kHz – 300 MHz.

#### Topologies:

Full bridge; Half bridge; Push-Pull; Forward; Resonant topologies (in order of preference).

**Mounting Options:** a. Horizontal, b. Vertical

### 2. Inductor Application

STANDARD A <sub>L</sub> (nH/t <sup>2</sup> )	1600	1000	630	400	315	250	160
TYPICAL VALUE OF MAX. Amper Turns	190	310	490	790	950	1202	1500

A<sub>L</sub> values not listed are available upon request.

### 3. Typical Thermal Impedance For Different Cooling Conditions

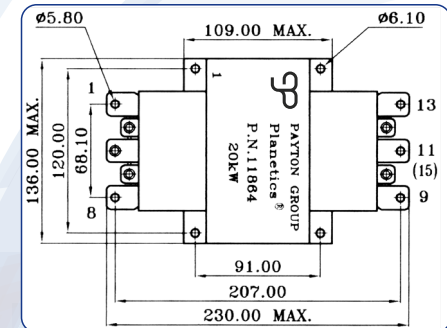
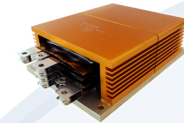
NATURAL COOLING (Hot Spot - Air)	BLOWING AIR 3m/sec (Hot Spot - Air)	ONE SIDE HEATSINK (Hot Spot - Heatsink)	TWO SIDES HEATSINK (Hot Spot - Heatsink)
1.7°C/W	1.3°C/W	1.6°C/W	0.8°C/W

## Transformer Type T5000 AC P.N. 11864

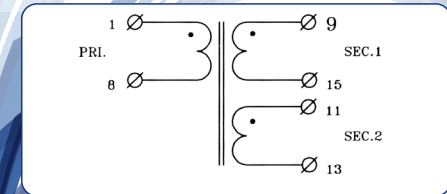
This T5000-16-6-6, super high power, high input voltage, high frequency, small dimensional planar transformer is developed for a high power density DC-DC converter and may be used in high power applications, providing the following specifications:

### Transformer Specifications

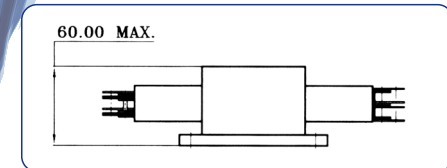
Total output power	20kW (590 Vdc@34 Adc)
Operating frequency	100 kHz
Input voltage range	815 - 900 Vdc
Topology	Full bridge, resonant
Max. Volt-Sec. product	8.15 V-msec
Duty cycle	2 x 0.5 max.
Primary current	27 Arms max.
Secondary 1,2 output current	30 Arms max.
Primary to Sec. 1 ,2 ratio	16 : 6
Dielectric strength	
pri. to sec. 1+sec. 2+core	3750 Vrms
sec. 1, sec.2 to core	1500 Vrms
Ambient temperature	-20°C to +50°C
Total losses (With 45°C heat sink)	95W
Hot spot temperature (With 45°C heat sink)	120°C max.
Weight	3000 gr.



TOP VIEW



ELECTRICAL DIAGRAM



SIDE VIEW

(All dimensions are given in mm.)