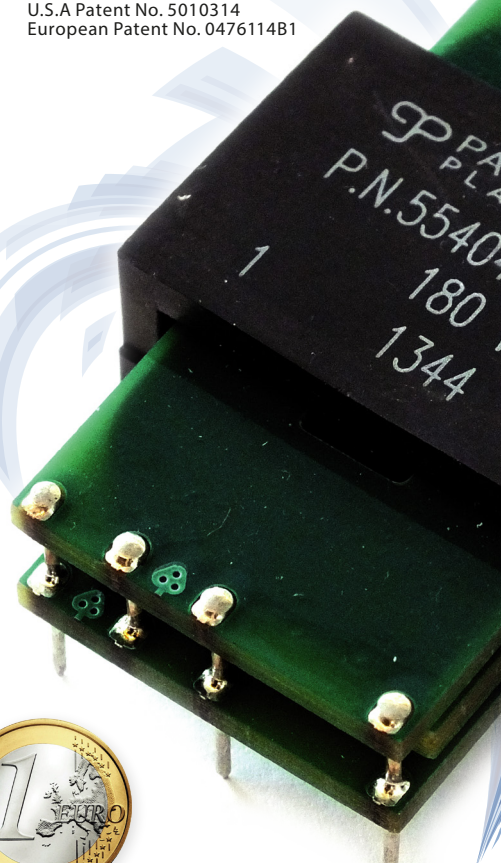


## SIZE 500

Power Capacity 500W to 5kW



U.S.A Patent No. 5010314  
European Patent No. 0476114B1



### Description

Payton SIZE 500 provides a patented planar isolation solution for high power applications 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)
500W, forward at 50 kHz 5kW, full bridge at 200 kHz	L = 80-120 W = 60-90 H = 10-30	400 gr.	500 V <sub>DC</sub> - 4k V <sub>rms</sub>	700 V <sub>peak</sub> max.	200 A max.

Typical efficiency: 97-99%

Recommended frequency range: 80 kHz – 1.0 MHz.

#### Topologies:

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

Mounting Options: a. Horizontal, b. Vertical

### 2. Inductor Application

STANDARD $A_L$ (nH/t <sup>2</sup> )	1600	1000	630	400	315	250	160
TYPICAL VALUE OF MAX. Amper Turns	51	87	157	233	290	365	510

$A_L$  values not listed are available upon request.

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

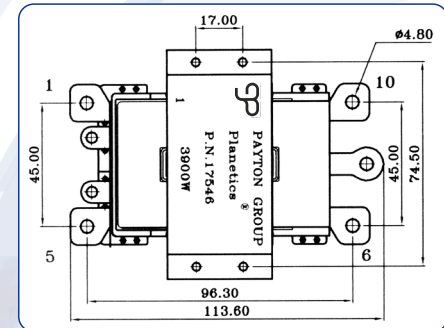
NATURAL COOLING (Hot Spot - Air)	BLOWING AIR 3m/sec (Hot Spot - Air)	ONE SIDE HEATSINK (Hot Spot - Heatsink)	TWO SIDES HEATSINK (Hot Spot - Heatsink)
5.4°C/W	3.2°C/W	2°C/W	1°C/W

## Transformer Type T500 AC P.N. 17546

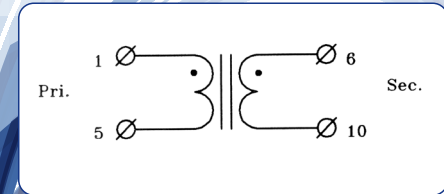
This T500AC-7-2, high power, high input voltage, high frequency, small dimensional planar transformer is developed for a high power density DC-DC converter and may be used in welding applications, providing the following specifications:

### Transformer Specifications

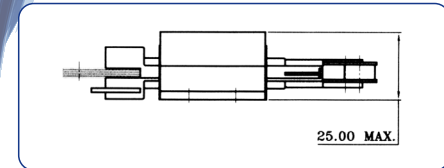
Total output power	3900 W (26 Vdc/150 Adc) Welding duty of 50%
Operating frequency	200 kHz
Input voltage range	150 - 375 Vdc link.
Topology	Forward with active clamp
Volt-Sec. product	460V- $\mu$ Sec
Operating Duty cycle	0.618 max.
Primary current (for 90% power supply effc.)	37 Arms (47 a peak)
Primary to Sec. ratio (sec. current - 118 Arms)	3.5 : 1
Dielectric strength	
pri. to sec.+core	4000 Vrms
sec. to core	1000 Vrms
Ambient temperature	-25°C to +40°C
Total losses (With 50°C heat sink)	40W
Hot spot temperature (With 50°C heat sink)	130°C
Weight	250 gr.



TOP VIEW



ELECTRICAL DIAGRAM



SIDE VIEW

(All dimensions are given in mm.)