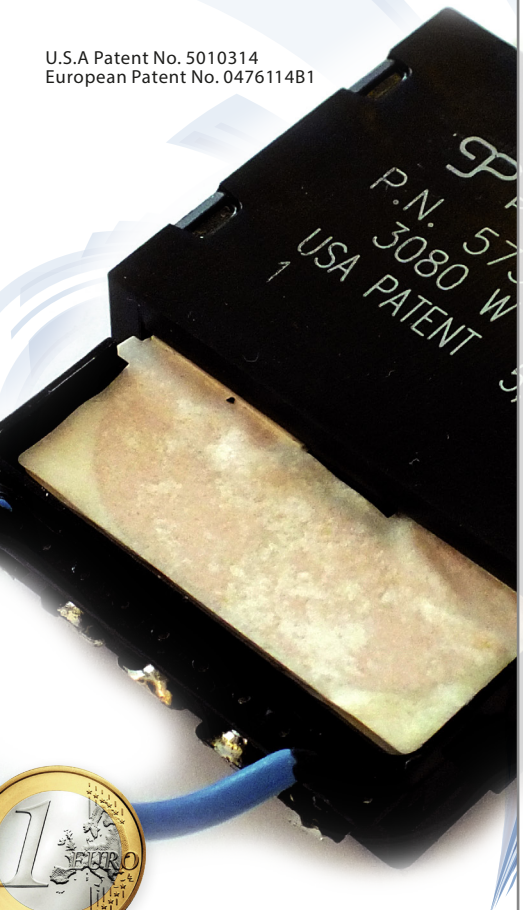
SIZE 1000

Power Capacity 1 to 10kW

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



Description

Payton SIZE 1000 provides a patented planar isolation solution for high power applications (such as welding, 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)
1kW, forward at 50 kHz 10kW, full bridge at 250 kHz	L = 90-150 W = 65-90 H = 15-40	500 gr. - 1 kg.	500 V_{DC}- 4k Vrms	1000 Vpeak max.	1000 A max.

Typical efficiency: 97-99%
Recommended frequency range: 50 kHz – 2.0 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^2)	1600	1000	630	400	315	250	160
TYPICAL VALUE OF MAX. Amper Turns	94	144	250	376	445	570	695

A_L values not listed are available upon request.

3. Typical Thermal Impedance For Different Cooling Conditions

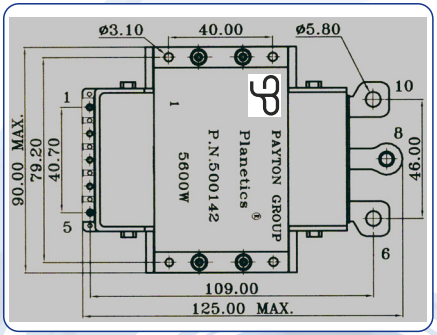
NATURAL COOLING (Hot Spot - Air)	BLOWING AIR 3m/sec (Hot Spot - Air)	ONE SIDE HEATSINK (Hot Spot - Heatsink)	TWO SIDES HEATSINK (Hot Spot - Heatsink)
4.2°C/W	2.5°C/W	1.6°C/W	0.8°C/W

Transformer Type T1000 AC P.N. 500142

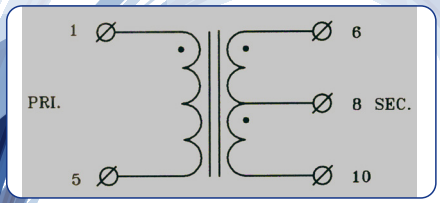
This T1000AC-11-2C, high power, high input voltage, high frequency, small dimensional planar transformer is developed for a high power density DC-DC converter and may be applicable for electrical car battery charger, providing the following specifications:

Transformer Specifications

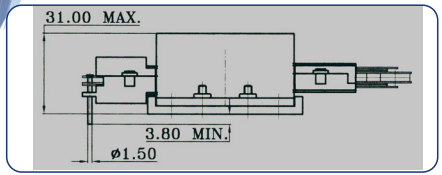
Total output power	5.6kW (28 Vdc@200 Adc)
Operating frequency	100 kHz
Input voltage range	430 - 680 Vdc
Topology	Full bridge, ZVT.
Max. Volt-Sec. product	3120V- µsec
Duty cycle	0.729 max.
Primary current	19.5 Arms
Primary to half Sec. ratio	11 : 1
Dielectric strength	
pri. to sec.+core	3750 Vrms
sec. to core	1250 Vrms
Creepage and clearance	
pri. to sec.	12.6 mm. min.
pri. to core	8 mm. min.
sec. to core	4.6 mm. min.
Ambient temperature	-40°C to +50°C
Total losses (With both sides 65°C heat sink)	65W
Hot spot temperature (With both sides 65°C heat sink)	137°C
Weight	410 gr.



TOP VIEW



ELECTRICAL DIAGRAM



SIDE VIEW

(All dimensions are given in mm.)