SIZE 250 Power Capacity 500W to 2.6kW

Description

The Payton **SIZE 250** 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 150 kHz 2.6kW, full bridge at 200 kHz	L = 50-90 W = 44-70 H = 10-30	150 gr.	500 V_{DC} 4k Vrms	500 Vpeak max.	200 A max.

Typical efficiency: 97-99%

Recommended frequency range: 100 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

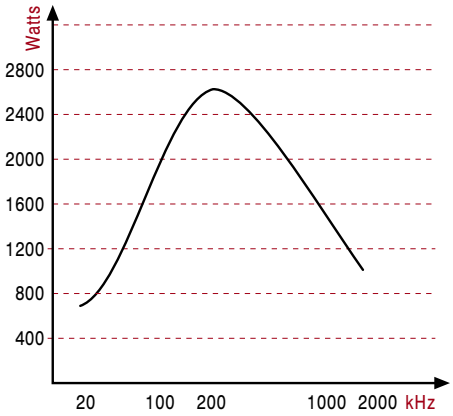
STANDARD A_L (nH/t^2)	1600	1000	630	400	315	250	160
TYPICAL VALUE OF MAX. Amper Turns	37	64	124	166	210	274	390

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 SIDE HEATSINK (Hot Spot - Heatsink)
9°/W	5.5°/W	3.4°/W	1.7°/W

Power Capacity vs. Frequency*



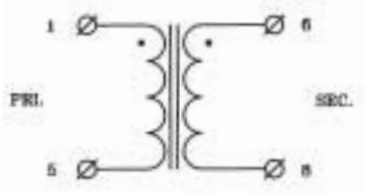
*For single output AC to DC full bridge power supply transformer with turns ratio of 12.

Transformer Type T250 AC P.N. 101044

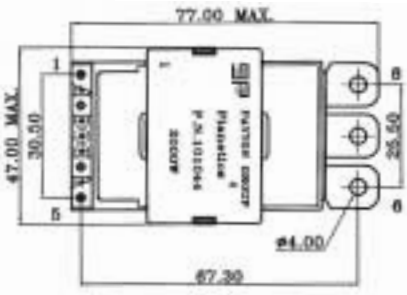
This T250AC-14-2, high power, high input voltage, high frequency, small dimensional planar transformer is developed for a high power density AC-DC converter providing the following specifications:

Transformer Specifications

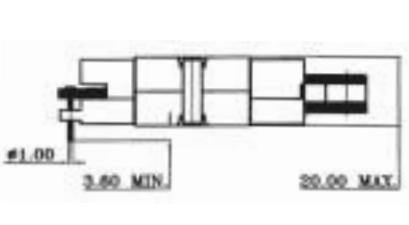
Total output power	2000 W (26-30Vdc/76.9-66.65Adc)
Operating frequency	100 kHz
Input voltage range	250 - 430 V.
Topology	Full bridge, current doubler
Max. volt-Sec. product	2362 V-µsec
Duty cycle	0.96 max.
Primary current	9.6 Arms max. (10.5 A peak)
Primary to Sec. ratio (Sec. current, max. - 76.9 Arms)	14 : 2
Dielectric strength pri. to sec.+core sec. to core	 3500 Vrms 1000 Vrms
Ambient temperature	-40°C to +85°C
Total losses (With both sides 70°c heat sink)	21 W
Hot spot temperature (With both sides 70°c heat sink)	110°C max.
Weight	140 gr.



ELECTRICAL DIAGRAM



TOP VIEW



SIDE VIEW

(All dimensions are given in mm.)