

SIZE 200 Power Capacity 300 to 1000W

Description

The Payton **SIZE 200** provides a planar solution for medium power applications (such as telecommunications) providing high efficiency, low EMI, excellent repeatability, low profile and weight with an operating temperature range of -40°C to $+130^{\circ}\text{C}$.



1. Transformer Application

POWER CAPACITY	DIMENSIONS (mm)	TYPICAL WEIGHT	DIELECTRIC ISOLATION	OPERATING VOLTAGE	OPERATING CURRENT (RMS)
300W, forward at 100 kHz 1000W, full bridge at 200 kHz	L = 40-80 W = 38 H = 10-20	70 gr.	500 V _{DC} - 4k V _{rms}	500 V _{peak} max.	120 A max.

Typical efficiency: 97-99%

Recommended frequency range: 100 kHz – 2.5 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

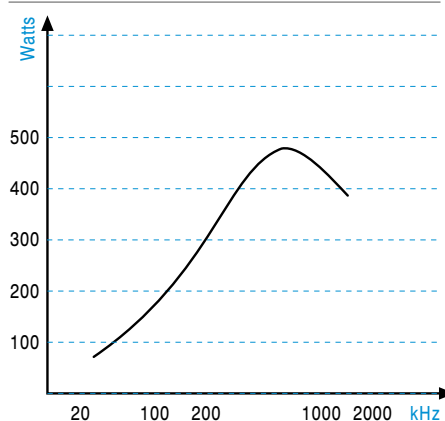
STANDARD A_L (nH/t ²)	1600	1000	630	400	315	250	160
TYPICAL VALUE OF MAX. Amper Turns	34	56	89	139	185	234	330

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)
12 ^o /W	6.5 ^o /W	3.6 ^o /W	1.8 ^o /W

Power Capacity vs. Frequency*



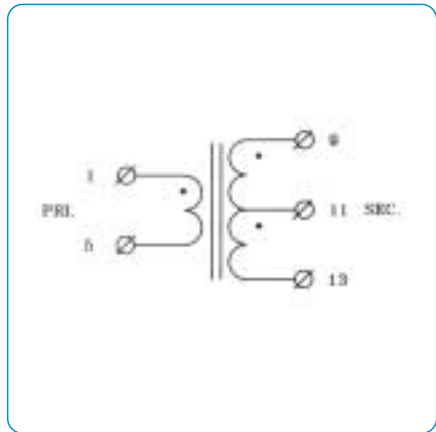
*For single output DC to DC forward power supply transformer with turns ratio of 2.

EXAMPLE

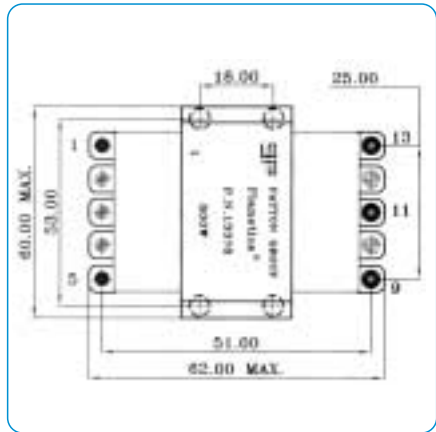
Transformer Type T200 DC P.N. 13378

This T200DC-9-4C, high power, high input voltage, high frequency, small dimensional planar transformer is developed for a high power density DC-DC converter providing the following specifications:

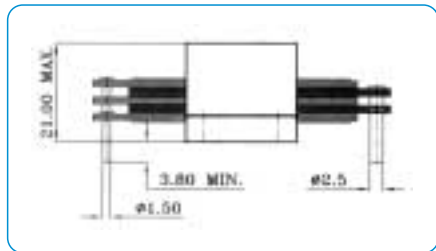
Transformer Specifications	
Total output power	800 W (25 Vdc @ 32 Adc)
Operating frequency	100 kHz
Input voltage range	110 - 150 Vdc
Topology	Full bridge, phase shift.
Max. volt-Sec. product	1020 V- μ sec
Duty cycle	0.94 max.
Primary current	10.7 Arms
Primary to Sec. ratio	9 : 2 : 2
Dielectric strength pri. to sec. + core sec. to core	1500 Vdc 500 Vdc
Ambient temperature	-40°C to +50°C
Total losses (With 85°C heat sink)	8 W
Hotspot temperature (With 85 °C heatsink)	115°C max.
Weight	120 gr.



ELECTRICAL DIAGRAM



TOP VIEW



SIDE VIEW

(All dimensions are given in mm.)