

SIZE 80 Power Capacity 200 to 1000W

Description

The Payton **SIZE 80** provides a planar solution for medium power applications 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)
200W, forward at 150 kHz 1000W, full bridge at 1MHz	L = 36-48 W = 34 H = 8-14	45 gr.	Up to 5k Vrms	500 Vpeak max.	100 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 c. SMT

2. Inductor Application

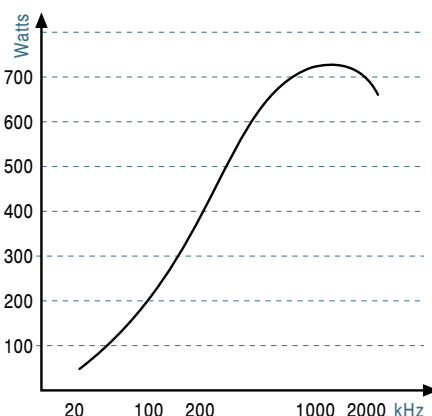
STANDARD A_L (nH/t ²)	1600	1000	630	400	315	160
TYPICAL VALUE OF MAX. Amper Turns	15	30	50	85	103	206

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)
$16^{\circ}/\text{W}$	$10^{\circ}/\text{W}$	$5^{\circ}/\text{W}$	$2.5^{\circ}/\text{W}$

Power Capacity vs. Frequency*



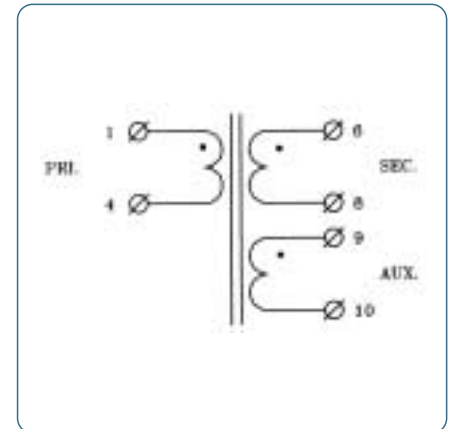
*For single output DC to DC forward transformer with turns ratio of 2.

EXAMPLE

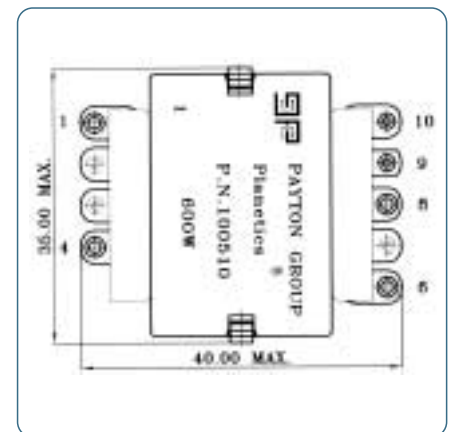
Transformer Type T80 AC P.N. 100510

This T080DC-3-2-1, high power, high frequency, small dimensional planar transformer is developed for a high power DC-DC converter and may be used in UPS applications, providing the following specifications:

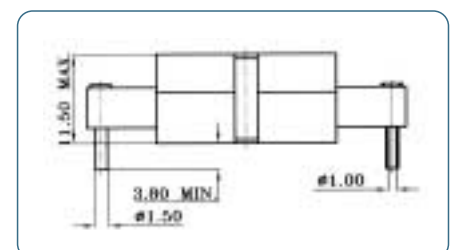
Transformer Specifications	
Total output power	600 W (12V/50A; 12V/0.05A)
Operating frequency range	200 kHz
Input voltage range	45 - 55 V
Topology	Full Bridge, ZVT with current doubler
Max. volt-Sec. product	0.809
Duty cycle	181.5 V-μsec
Primary current	18.36 Arms (18.36 Apeak)
Primary inductance	48 μH±30%
Primary Leakage inductance, max.	100nH
Primary to Sec. ratio	3:2
Primary to Aux. ratio	3:1
Dielectric strength pri.+aux. to sec.	1500 Vdc
pri.+aux.+sec. to core	750 Vdc
Ambient temperature	-40°C to +60°C
Total losses (With 1.5 m/sec. blowing air)	4.8 W
Hotspot temperature (With 1.5 m/sec. blowing air)	115°C max.
Weight	45 gr.



ELECTRICAL DIAGRAM



TOP VIEW



SIDE VIEW

(All dimensions are given in mm.)