

SIZE 55 Power Capacity 80 to 600W

Description

The Payton **SIZE 55** 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°C.



1. Transformer Application

POWER CAPACITY	DIMENSIONS (mm)	TYPICAL WEIGHT	DIELECTRIC ISOLATION	OPERATING VOLTAGE	OPERATING CURRENT (RMS)
80W, forward at 150 kHz 400W, full bridge at 300kHz	L = 28-45 W = 27 H = 6-12	30 gr.	500 V _{DC} - 4k V _{rms}	400 V _{peak} max.	50 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

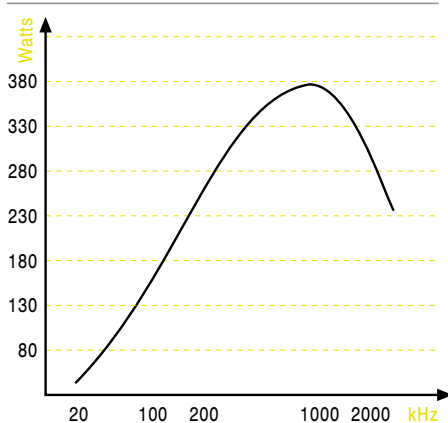
STANDARD A_L (nH/t ²)	1600	1000	630	400	315	250	160
TYPICAL VALUE OF MAX. Amper Turns	9.5	18	34	56	72	94	140

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)
22°/W	12°/W	7°/W	3.5°/W

Power Capacity vs. Frequency*



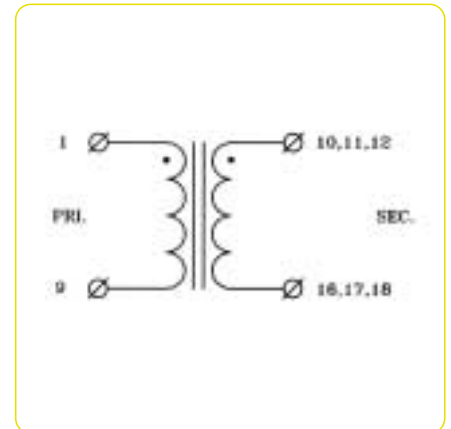
*For single output DC to DC forward power supply transformer with turns ratio of 4.

EXAMPLE

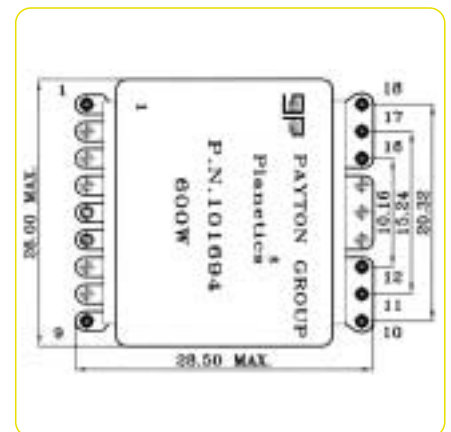
Transformer Type T55 DC P.N. 101694

This T55DC-9-2, medium power, low input voltage, high frequency, small dimensional planar transformer is developed for a high power density DC-DC converter, providing the following specifications:

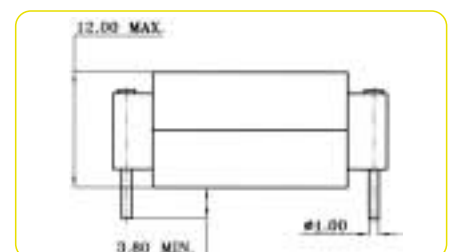
Transformer Specifications	
Total output power	600 W (12 Vdc@50 Adc)
Operating frequency	300 kHz
Input voltage range	180 - 350 V
Topology	Full bridge, ZVT. (with current doubler rectifier)
Max. volt-Sec. product	376 V- μ sec
Duty cycle	0.64
Primary current	5.96 Arms
Secondary output current	25 Arms
Primary to Sec. ratio	9 : 2
Dielectric strength pri to sec.+core sec. to core	1500 Vdc 500 Vdc
Ambient temperature	-40°C to +85°C
Total losses (With 85°C heat sink)	4.7 W
Hotspot temperature (With 85 °C heat sink)	118°C
Weight	40 gr.



ELECTRICAL DIAGRAM



TOP VIEW



SIDE VIEW

(All dimensions are given in mm.)