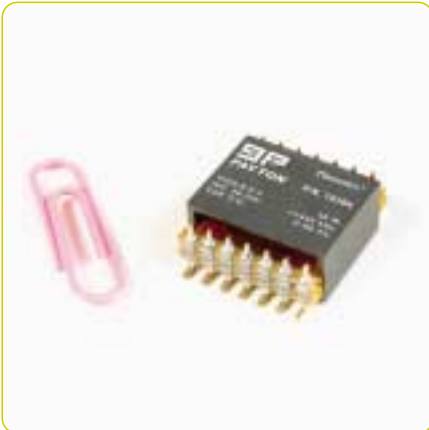


## SIZE 25 Power Capacity 25 to 100W

### Description

The Payton **SIZE 25** provides a planar solution for low power applications (such as telecommunications) providing high efficiency, low EMI, excellent repeatability, low profile and weight with an operating temperature range of  $-40^{\circ}\text{C}$  to  $+130^{\circ}\text{C}$ .



### 1. Transformer Application

POWER CAPACITY	DIMENSIONS (mm)	TYPICAL WEIGHT	DIELECTRIC ISOLATION	OPERATING VOLTAGE	OPERATING CURRENT (RMS)
25W, flyback at 200 kHz 100W, full bridge at 800kHz	L = 20-23 W = 19 H = 4-10	7-10 gr.	Up to 1000 $V_{\text{RMS}}$	150 V <sub>peak</sub> max.	25 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

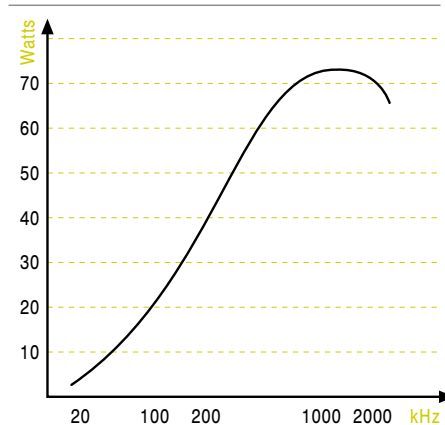
STANDARD $A_L$ (nH/t <sup>2</sup> )	1000	630	400	315	160	100
TYPICAL VALUE OF MAX. Amper Turns	4	12	23	29	60	97

$A_L$  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)
$40^{\circ}/\text{W}$	$25^{\circ}/\text{W}$	$15^{\circ}/\text{W}$	$8^{\circ}/\text{W}$

### Power Capacity vs. Frequency\*



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

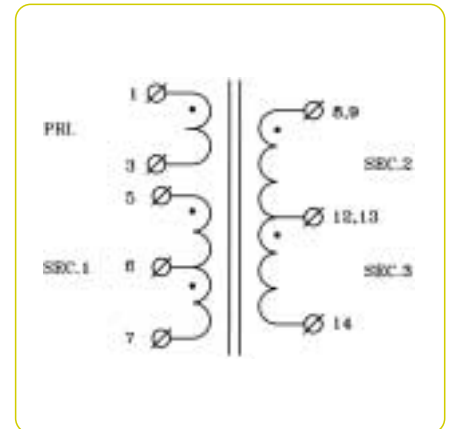
# EXAMPLE

## Transformer Type T25 DC P.N. 17536

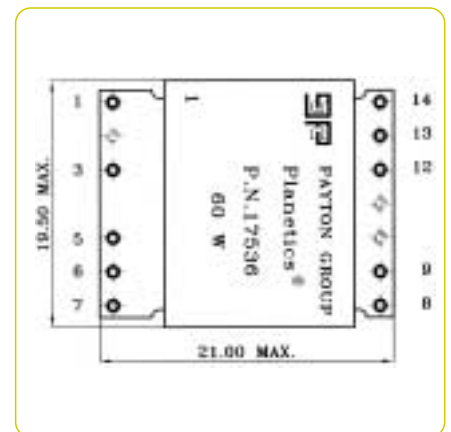
This T25-9-14C-6C, miniature planar transformer, natural cooled, is developed for a low power DC-DC converter and may be used in telecommunication equipment,

### Transformer Specifications

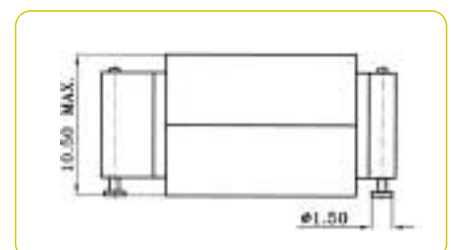
Total output power	60 W ( $\pm 12$ Vdc@0.2 Adc; 5 Vdc@9 Adc; -5 Vdc@0.5 Adc)
Operating frequency	320 kHz
Input voltage range	36 - 72 Vdc
Topology	Forward
Max. volt-Sec. product	49 V- $\mu$ sec
Duty cycle	0.45 max.
Primary current	2.85 Arms max. 4.2 Apeak max.
Primary to half Sec. 1 ratio	9:7
Primary to Sec. 2 ratio	9:3
Primary to Sec. 3 ratio	9:3
Dielectric strength	
pri. to secondaries + core	1000 Vdc
secondaries to core	500 Vdc
sec. to Sec.	500 Vdc
Ambient temperature	-40°C to +85°C
Total losses (natural cooling)	1.2 W
Hotspot temperature (natural cooling)	125°C max.
Weight	8 gr.



ELECTRICAL DIAGRAM



TOP VIEW



SIDE VIEW

(All dimensions are given in mm.)