

SIZE 40 Power Capacity 25 to 140W

Description

The Payton **SIZE 40** 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°C to +130°C.



1. Transformer Application

POWER CAPACITY	DIMENSIONS (mm)	TYPICAL WEIGHT	DIELECTRIC ISOLATION	OPERATING VOLTAGE	OPERATING CURRENT (RMS)
30W, flyback at 100 kHz 140W, forward at 350 kHz	L = 19-27 W = 20 H = 6-12	10-14 gr.	Up to 1000 V _{RMS}	150 V _{peak} 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. SMT

2. Inductor Application

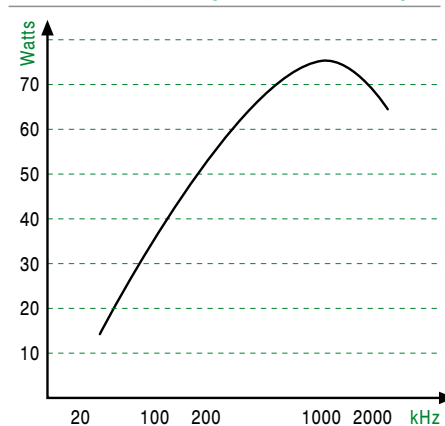
STANDARD A_L (nH/t ²)	1000	630	400	315	160	100
TYPICAL VALUE OF MAX. Amper Turns	10	18	30	40	82	124

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)
36°/W	21°/W	14°/W	7°/W

Power Capacity vs. Frequency*



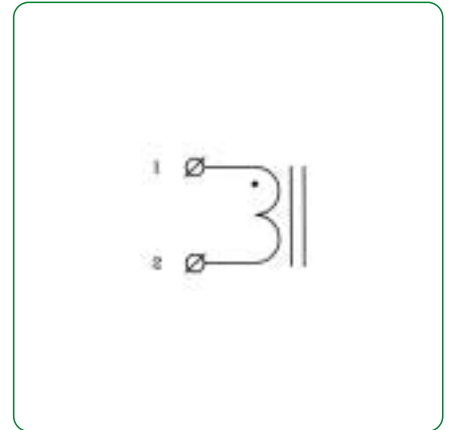
*For single output DC to DC forward power supply transformer with turns ratio of 4.

EXAMPLE

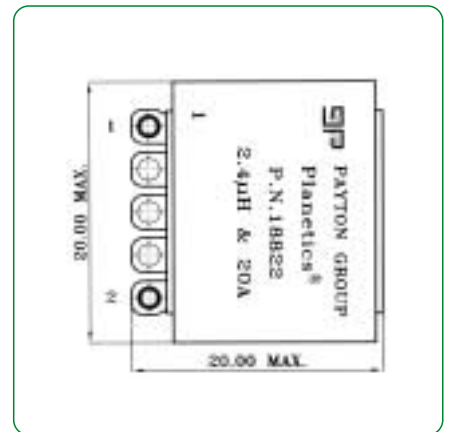
Inductor Type I40 P.N. 18822

This I40-2.4 μ H/20A, high frequency, small dimensional planar inductor developed for a high power density DC-DC converter, providing the following specifications:

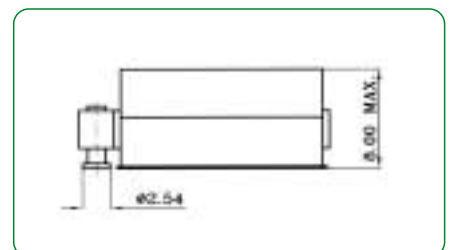
Inductor Specifications	
Inductance L	2.4 μ H \pm 10%
Operating frequency	100-400 kHz
DC current	20 Adc max.
Peak of ripple current	2 Apeak max.
Peak of total current	22 Apeak max.
Dielectric strength	500 Vdc
Ambient operating temperature	-10°C to +50°C
Total Losses (Natural cooling)	1.0 W
Hotspot temperature (Natural cooling)	85°C max.
Weight	11 gr.



ELECTRICAL DIAGRAM



TOP VIEW



SIDE VIEW

(All dimensions are given in mm.)