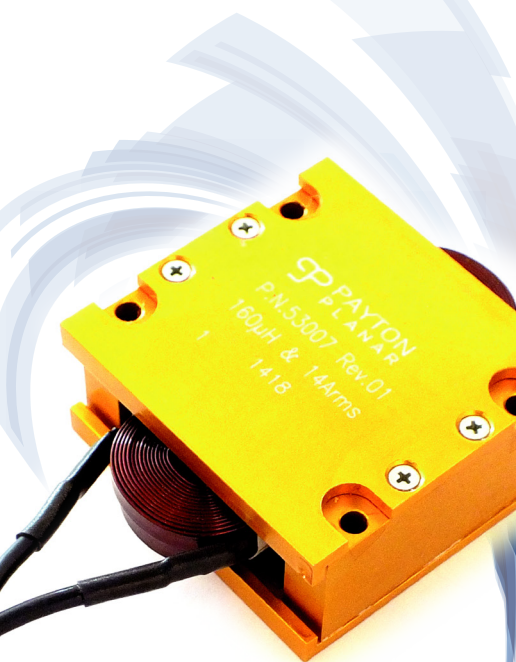


## SIZE 270

Power Capacity 1kW to 10kW



Power Factor Correction (PFC) Inductor



### Description

Payton SIZE 270 provides a patented planar isolation solution for high power applications (such as welding, induction heating etc.) 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)
1kW, forward at 50 kHz 10kW, full bridge at 250 kHz	L = 110 W = 47 H = 22	300 gr.	500 V <sub>DC</sub> - 4k V <sub>rms</sub>	1000 V <sub>peak</sub> max.	700 A max.

Typical efficiency: 97-99%

Recommended frequency range: 50 kHz – 1.0 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 <sub>L</sub> (nH/t <sup>2</sup> )	1600	1000	630	400	315	250	160	
TYPICAL VALUE OF MAX. Amper Turns	86	140	235	345	415	520	645	

A<sub>L</sub> values not listed are available upon request.

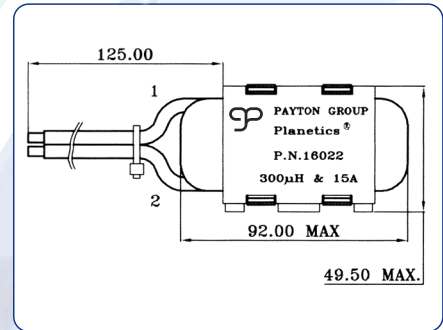
3. Typical Thermal Impedance For Different Cooling Conditions			
NATURAL COOLING (Hot Spot - Air)	BLOWING AIR 3m/sec (Hot Spot - Air)	ONE SIDE HEATSINK (Hot Spot - Heatsink)	TWO SIDES HEATSINK (Hot Spot - Heatsink)
5.0°C/W	2.8°C/W	2.0°C/W	1.0°C/W

## Inductor Type I270 P.N. 16022

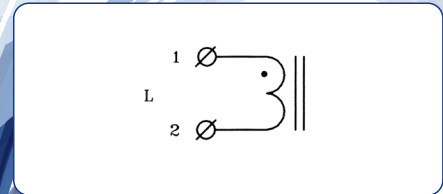
This I270-300 $\mu$ H/15A, high frequency, Power Factor Correction (PFC) planar Inductor is developed for a high power density DC-DC converter, providing the following specifications:

### Inductor Specifications

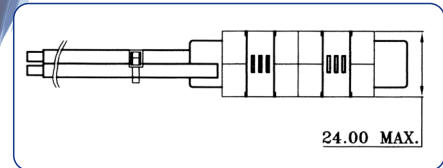
Inductance L	300 $\mu$ H + 10%\-20%
Operating frequency	100 kHz
RMS current, max	9 Arms, at 100-120 Hz
Peak of ripple current	2 A <sub>peak</sub> , at 100 kHz.
Peak of total current	15 A <sub>peak</sub> max.
Dielectric strength	1800 Vrms
Ambient temperature	-40°C to +85°C
Total losses (With 95°C heat sink)	7W
Hot spot temperature (With 95°C heat sink)	100°C max.
Temperature class of insulation system	"F" (150°C)
Weight	320 gr.



TOP VIEW



ELECTRICAL DIAGRAM



SIDE VIEW

(All dimensions are given in mm.)