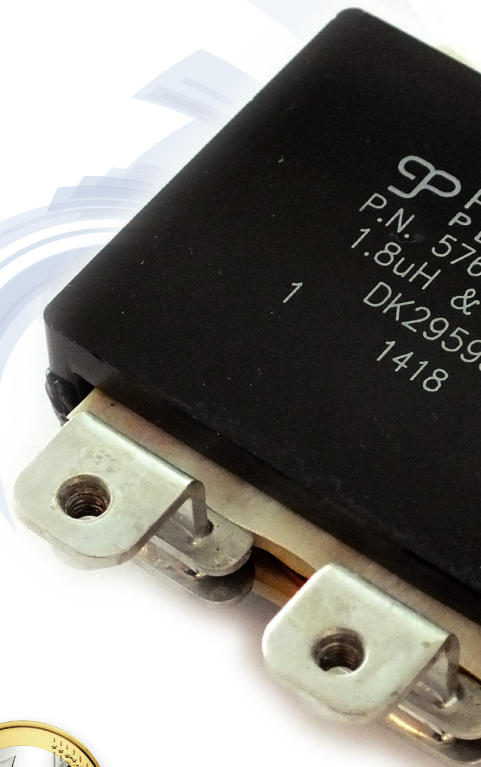


SIZE 564

Power Capacity 1.8 to 7.5 kW



Description

Payton SIZE 564 provides planar 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) |
|--|---------------------|----------------|----------------------|-------------------|-------------------------|
| 1.8kW, full bridge w. current doubler at 100 kHz | L=55-110 W=65-90 | 500 gr. | Up to 4k Vrms | 1000 Vpeak max. | 800 A max. |
| 7.5kW, full bridge at 250 kHz | H=15-45 | | | | |

Typical efficiency: 97-99%

Recommended frequency range: 50 kHz – 2.0 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_L (nH/t ²) | 1600 | 1000 | 630 | 400 | 315 | 250 | 160 |
|-------------------------------------|------|------|-----|-----|-----|-----|-----|
| TYPICAL VALUE OF MAX. Amper Turns | 102 | 157 | 272 | 410 | 485 | 620 | 757 |

A_L values not listed are available upon request.

3. Typical Thermal Impedance For Different Cooling Conditions

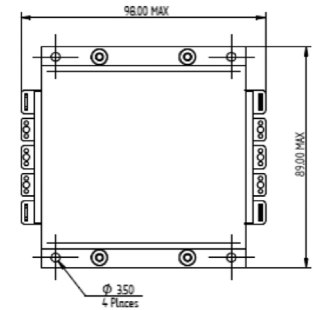
| NATURAL COOLING (Hot Spot - Air) | BLOWING AIR 3m/sec (Hot Spot - Air) | ONE SIDE HEATSINK (Hot Spot - Heatsink) | TWO SIDES HEATSINK (Hot Spot - Heatsink) |
|----------------------------------|-------------------------------------|---|--|
| 5.2°C/W | 3.1°C/W | 2°C/W | 1°C/W |

Transformer Type T564 P.N. 513508

This T564DC-10-13, high power, high input voltage, small dimensional planar transformer is developed for a high power density DC-DC converter, providing the following specifications:

Transformer Specifications

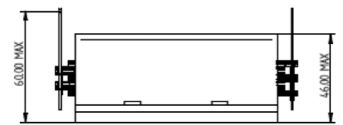
| | |
|--|---------------------------------------|
| Total output power | 7500W (250Vdc@30Adc - 430Vdc@17.4Adc) |
| Operating frequency | 70 kHz |
| Input voltage range | 375 - 480 V |
| Topology | Full bridge, ZVS. |
| Max. Volt-Sec. product | 4734V- μ sec |
| Duty cycle | 0.888 |
| Primary current | 42.3-24.6 Arms |
| Primary to Sec. ratio | 10 : 13 |
| Dielectric strength pri. to sec.+core sec. to core | 2700 Vdc 2700 Vdc |
| Ambient temperature | -40°C to +105°C |
| Total losses (With 75°C heat sink) | 60W |
| Hot spot temperature (With 75°C heat sink) | 135°C |
| Weight | 600 gr. |



TOP VIEW



ELECTRICAL DIAGRAM



SIDE VIEW

(All dimensions are given in mm.)