

SIZE 551



Power Capacity 500W to 3.5kW



Description

Payton SIZE 551 provides planar solution for high power applications such as 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)
500W, Push-Pull at 100 kHz 3.5kW, full bridge at 250 kHz	L = 52-95 W = 53-78 H = 13-30	200 gr.	Up to 4k Vrms	700 Vpeak max.	150 A max.

Typical efficiency: 97-99%

Recommended frequency range: 80 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_L (nH/t ²)	1600	1000	630	400	315	250	160
TYPICAL VALUE OF MAX. Amper Turns	58	100	180	268	333	420	586

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)
7°C/W	4°C/W	2.6°C/W	1.3°C/W

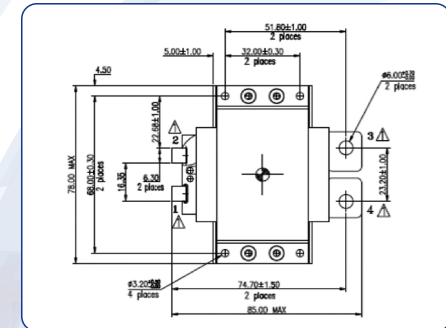


Transformer Type T551 AC P.N. 513696

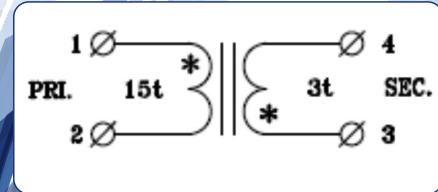
This T551DC-15-3, high power, high input voltage, small dimensional planar transformer is developed for a high power density DC-DC converter, providing the following specifications:

Transformer Specifications

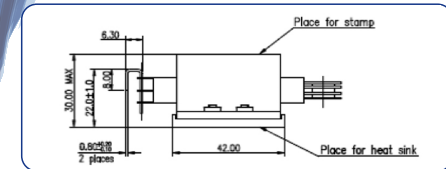
Total output power	2596 W (16 Vdc@156 Adc)
Operating frequency	72 kHz
Input voltage range	195 - 435V
Topology	Full bridge ZVS, with current doubler
Volt-Sec. product	2252V- μ Sec
Operating Duty cycle	0.84
Primary current (for 92% power supply effic.)	19.3 Arms
Sec. current	90 Arms
Primary to Sec. ratio (sec. current - 118 Arms)	15 : 3
Dielectric strength pri. to sec.+core	2700 Vdc
sec. to core	2700 Vdc
Ambient temperature	-40°C to +105°C
Total losses (With 65°C heat sink)	38W
Hot spot temperature (With 65°C heat sink)	145°C
Weight	350 gr.



TOP VIEW



ELECTRICAL DIAGRAM



SIDE VIEW

(All dimensions are given in mm.)