

PAYTON 10 kW MODULE

Functional specs

Date : 15/07/19

1. Generic Type : T1000AC-24-15 + I1000 -18 μ H /50A.
2. Total output power of power supply : 10000W (500Vdc/20A dc ÷ 200Vdc/50A dc).
3. Operating frequency : 100 ÷ 200 kHz.
4. Input voltage : 700 ÷ 800Vdc link.
5. Topology : Dual Active Bridge.
6. Ambient temperature range : - 40 ÷ 125°C.
7. Mechanical dimensions : Length - 130 mm.
(for reference only) : Width - 90 mm.
: Height - 85 mm.

PAYTON 10 kW SMPS TRANSFORMER

Functional specs

Date : 15/07/19

1. Generic Type : T1000AC-24-15.
2. Total output power : 10000W (500Vdc/20A_{dc} ÷ 200Vdc/50A_{dc}).
3. Operating frequency of transformer : 100 ÷ 200 kHz.
4. Input voltage of power stage : 700 ÷ 800Vdc link.
5. Input voltage of transformer : 800V (V_{out} = 500V), Bipolar Square waveform;
320V (V_{out} = 200V), Bipolar Square waveform.
6. Topology : Dual Active Bridge.
7. Operating duty cycle, max. : 1.0 (0.5 x 2)
8. Volt-second product, max. : 8000V-μsec -- for V_{out} = 500V, 100 kHz;
3200V-μsec -- for V_{out} = 200V, 100 kHz;
4000V-μsec -- for V_{out} = 500V, 200 kHz;
1600V-μsec -- for V_{out} = 200V, 200 kHz.
9. Pri. to Sec. ratio : 24 : 15.
10. Primary current, max : 13.5Arms (20A peak) -- for V_{out} = 500V;
34Arms (48A peak) -- for V_{out} = 200V.
11. Secondary current : 20Arms (30A peak) -- for V_{out} = 500V;
50Arms (70A peak) -- for V_{out} = 200V.
12. Dielectric strength
(Pri. to Sec.) : 5000Vdc.
(Pri., Sec. to Core) : 5000Vdc.
13. Ambient temperature range : - 40 ÷ 125°C.
14. Estimated power losses : 50W -- for V_{out} = 500V, 100 kHz;
70W -- for V_{out} = 200V, 100 kHz;
60W -- for V_{out} = 500V, 200 kHz;
85W -- for V_{out} = 200V, 200 kHz.
15. Estimated hot spot temperature
(with 70°C heat sink) : 135°C

PAYTON 18 μ H & 50A INDUCTOR

Functional specs

Date : 15/07/19

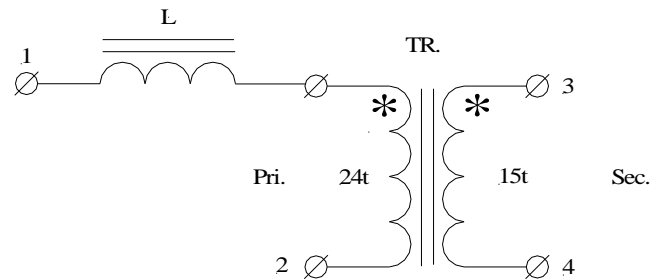
1. Generic Type : I1000-18 μ H/50A.
2. Inductor application : Resonant.
3. Operating frequency : 100 ÷ 200 kHz.
4. Inductance L @ 0 ÷ 50A : 18 μ H ^{+15%}/_{-15%}.
5. RMS current : 13.5Arms -- for Vout = 500V;
34Arms -- for Vout = 200V.
6. AC peak current : 20A peak -- for Vout = 500V;
48A peak -- for Vout = 200V.
7. Dielectric strength
(L to core) : 5000Vdc.
8. Ambient temperature range : - 40 ÷ 125°C.
9. Estimated power losses : 10W -- for Vout = 500V, 100 kHz;
40W -- for Vout = 200V, 100 kHz;
25W -- for Vout = 500V, 200 kHz;
75W -- for Vout = 200V, 200 kHz.
10. Estimated hot spot temperature
(with 70°C heat sink) : 135°C

PAYTON 10 kW MODULE

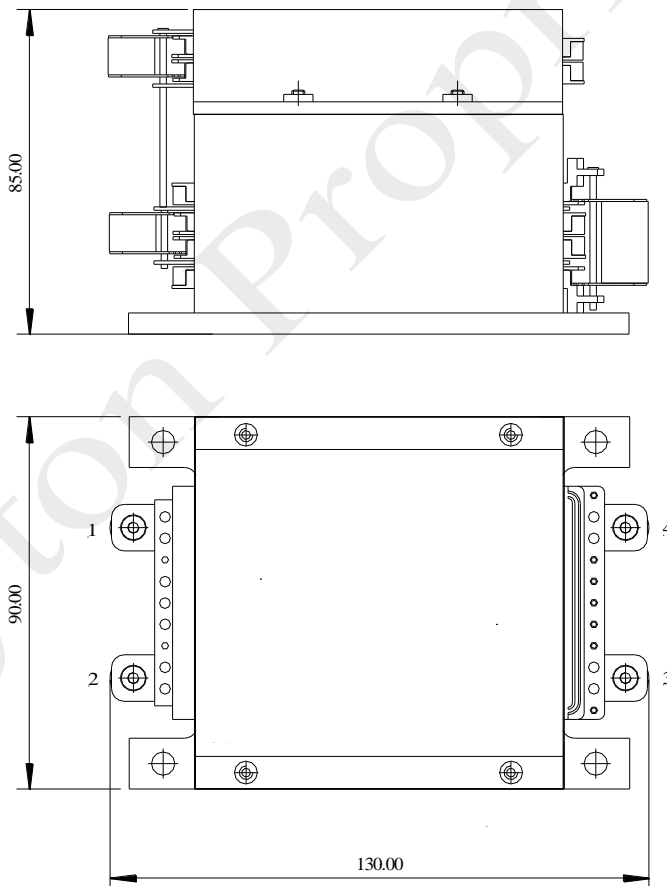
Functional specs

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Electrical diagram.



Terminals layout sketch (preliminary; side & top view; not to scale).



Note: Module terminations of copper strips with M3 screw thread for screw connections of the cable shoes.