Gate Drive Transformer – PT3597

Special Features:

- Nominal input voltage: 15V
- Nominal output voltage: 17V
- Three sperate outputs
- THT / Surface mount component
- High symmetry of the leakage inductance
- Low interwinding capacitance
- Insulation voltage up to 5kV
- Excellent partial discharge resistance
- Fully insulated wires
- Compliant with:
  - IEC62109
  - IEC61558-2-16
- Compact and lightweight
- Low profile
- Operating ambient temperature: -40°C to 85°C
- Designed for fully automated assembly process

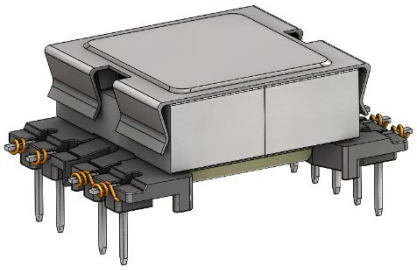

Figure 1. View of gate drive transformer.

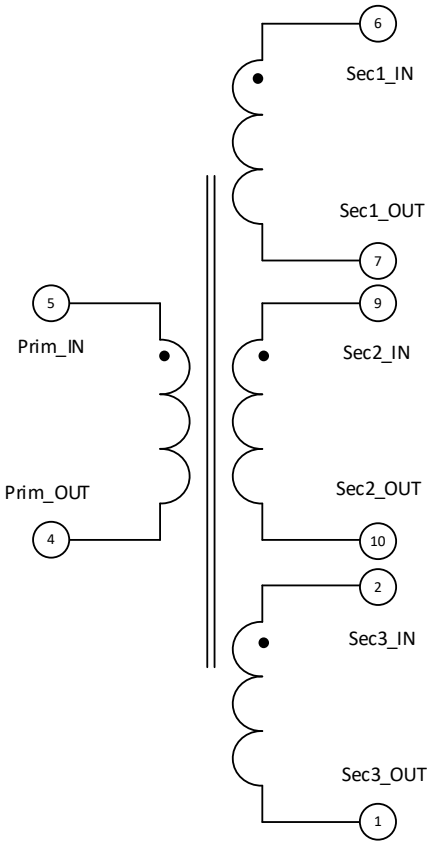

Figure 2. Electrical circuit of the transformer.

Typical Applications:

- Switched Mode Power Supplies
- High performance gate drive circuit

Packaging possibilities:

- ESD box
- Cardboard box
- Tape & Reel

For samples please contact directly

Environmentally friendly solution:

- RoHS and REACH compliant

Table 1.Electrical parameters.

Parameter description	Parameter	Comment
Circuits	Circuit terminals are shown in Figure 2	-
Primary inductance	$L_{Prim\_IN-Prim\_OUT}$ = 500 µH ± 30%	@0.3 V, 70 kHz, sinus voltage
Leakage inductance	11 µH ≤ $L_{Prim\_IN-Prim\_OUT}$ ≤ 16 µH (Measured on primary winding, all secondary windings shorted)	@0.3 V, 70 kHz, sinus voltage
Leakage inductance	$L_{Prim\_IN-Prim\_OUT}$ = 16 µH ± 20% (Measured on primary winding, secondary Sec1 shorted)	@0.3 V, 70 kHz, sinus voltage
Leakage inductance	$L_{Prim\_IN-Prim\_OUT}$ = 16 µH ± 20% (Measured on primary winding, secondary Sec2 shorted)	@0.3 V, 70 kHz, sinus voltage
Leakage inductance	$L_{Prim\_IN-Prim\_OUT}$ = 16 µH ± 20% (Measured on primary winding, secondary Sec3 shorted)	@0.3 V, 70 kHz, sinus voltage
Rated voltage	$V_{Prim\_IN-Prim\_OUT}$ = 15 V	Nominal voltage
Turns ratio	Prim : Sec1 = 0.82 ± 5% Prim : Sec2 = 0.82 ± 5% Prim : Sec3 = 0.82 ± 5%	@1.5 V, 10 kHz, sinus voltage
Winding dc resistance	$R_{Prim\_IN-Prim\_OUT}$ ≤ 350 mΩ (@20°C)	given values are valid for 20°C (resistance temperature coefficient 0.00393 1/K)
Winding dc resistance	$R_{Sec1\_IN-Sec1\_OUT}$ ≤ 685 mΩ (@20°C)	given values are valid for 20°C (resistance temperature coefficient 0.00393 1/K)
Winding dc resistance	$R_{Sec2\_IN-Sec2\_OUT}$ ≤ 685 mΩ (@20°C)	given values are valid for 20°C (resistance temperature coefficient 0.00393 1/K)
Winding dc resistance	$R_{Sec3\_IN-Sec3\_OUT}$ ≤ 685 mΩ (@20°C)	given values are valid for 20°C (resistance temperature coefficient 0.00393 1/K)
Rated ambient temperature	T_a = -40 °C to +85 °C	-
Insulation class	A (105 °C)	Customer should provide power de-rating to prevent exceeding of 110 °C on windings surface
Dielectric strength	Between any two windings and each winding to the ferrite core. 1500 V_{ACRMS} @50 Hz, 60 sec.	-
Dielectric strength	Between primary winding and all secondary windings 1500 V_{ACRMS} @50 Hz, 1 sec.	-
Partial Discharge	Between any two windings: Partial discharge inception voltage (V_{PDinc}): 1500 V Partial discharge extinction voltage (V_{PDext}):1200 V Partial discharge < 10 pC	-
Cooling	Natural convection	-

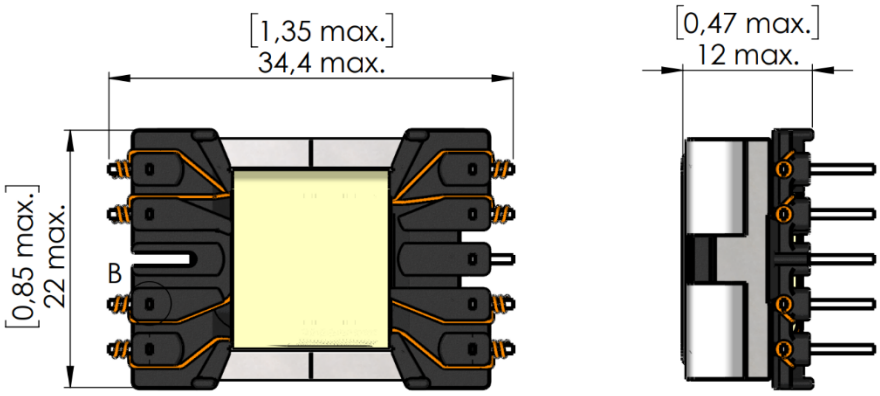

Figure 3. Transformer view (dimensions in mm [inch]).

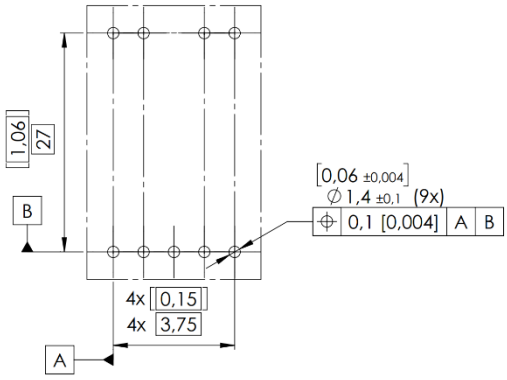

Figure 4. Transformer layout pattern (dimensions in mm [inch]).

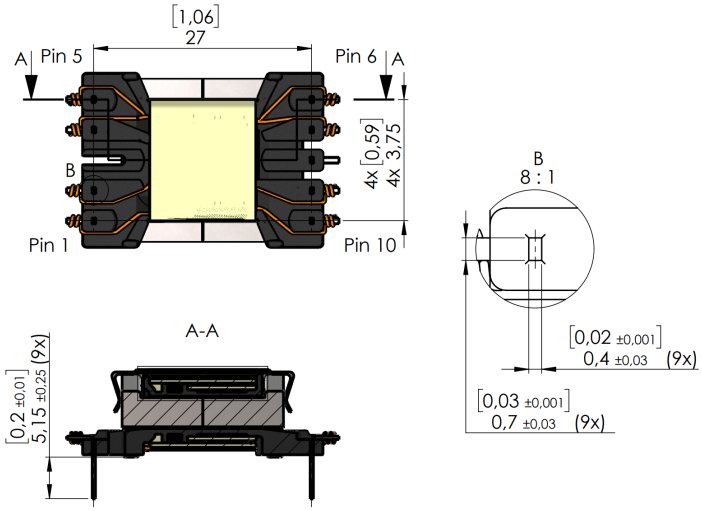

Figure 5. Transformer terminations, bottom view (dimensions in mm [inch]).