Gate Drive Transformer – PT4234

Special Features:

- Nominal input voltage: 10 V
- THT / Surface mount component
- High symmetry of the leakage inductance
- Low interwinding capacitance
- Insulation voltage up to 4kV
- Excellent partial discharge resistance
- Fully insulated wires
- Compliance:
  - IEC 62109-1:2010
  - UL 62109-1:2014
  - UL 1741:2021
  - RoHS and REACH
- Compact and lightweight
- Low profile
- Operating ambient temperature: -40°C to 85°C
- Designed for fully automated assembly process

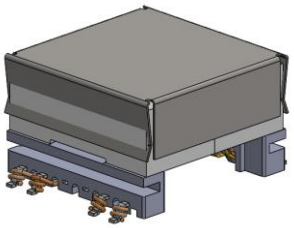

Figure 1. General view

Typical Applications:

- Switched Mode Power Supplies
- High performance gate drive circuit

Packaging possibilities:

- ESD box
- Cardboard box
- Tape & Reel

For samples or custom solutions please contact directly:
inquiry@sma-magnetics.com

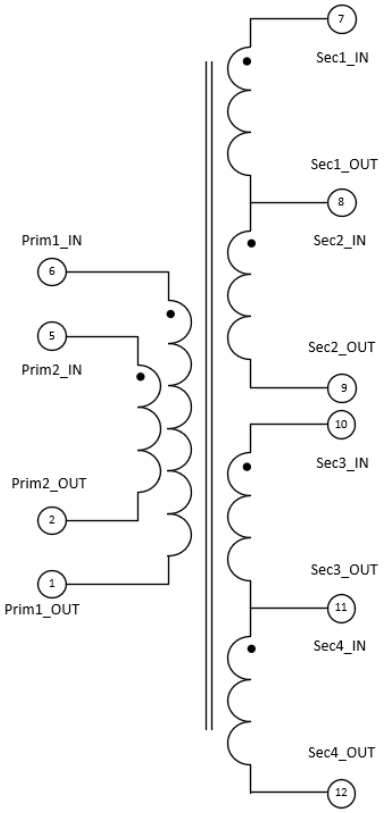

Figure 2. Electrical circuit

Parameter description	Parameter	Comment
Circuits	Circuit terminals are shown in Figure 2	-
Primary inductance	$L_{Prim1\_IN-Prim1\_OUT}$ = 260 µH ± 25% $L_{Prim2\_IN-Prim2\_OUT}$ = 260 µH ± 25%	Routine test, @0.1 V, 100 kHz, sine voltage
Leakage inductance	$L_{Prim1\_IN/Prim2\_IN - Prim1\_OUT/Prim2\_OUT}$ = 9.0 µH ± 10% (Measured on Prim1/Prim2 winding, all secondary windings shorted)	Routine test @0.1 V, 100 kHz, sine voltage
Rated voltage	$V_{Prim1\_IN-Prim1\_OUT}$, $V_{Prim2\_IN-Prim2\_OUT}$ =10 V	Nominal voltage
Rated current	$I_{Prim1\_IN-Prim1\_OUT}$, $I_{Prim2\_IN-Prim2\_OUT}$ = 0.75 A	Nominal current
Turns ratio	Prim1 : Prim2 : Sec1 : Sec2 : Sec3 : Sec4= 1 : 1 : 0.72 : 0.72 : 0.81 : 1.3 ± 5%	Routine test @1.0 V, 10 kHz, sine voltage
Winding dc resistance	$R_{Prim1\_IN-Prim1\_OUT}$ ≤ 85 mΩ (@20°C) $R_{Prim2\_IN-Prim2\_OUT}$ ≤ 90 mΩ (@20°C)	Routine test, T = 20°C
Winding dc resistance	$R_{Sec1\_IN-Sec2\_OUT}$ ≤ 185 mΩ (@20°C) $R_{Sec2\_IN-Sec2\_OUT}$ ≤ 196 mΩ (@20°C)	Routine test, T = 20°C
Winding dc resistance	$R_{Sec3\_IN-Sec3\_OUT}$ ≤ 190 mΩ (@20°C) $R_{Sec4\_IN-Sec4\_OUT}$ ≤ 140 mΩ (@20°C)	Routine test, T = 20°C
Coupling capacitacne	$C_{Prim1/Prim2 - Sec1/Sec2}$ ≤ 7 pF $C_{Prim1/Prim2 - Sec3/Sec4}$ ≤ 7 pF	Routine test @0.1 V, 10 kHz, sine voltage
Rated ambient temperature	T_a = -40 °C to +85 °C	-
Insulation class	A (105 °C)	Customer should provide such operating conditions to prevent exceeding of 100 °C on windings surface
Insulation distance	Minimum clearance: 3.87 mm Minimum creepage distance: 15.24 mm	Between primary and secondary windings
Dielectric strength	Between primary and secondary windings: 4000 V_{ACRMS} @50 Hz, 3 sec.	Routine test
Partial discharge	Between primary and secondary windings. Q_{PD} < 10 pC during test with voltages: $U_{Inception}$ = 1655 V_{RMS} $U_{Extinction}$ = 1324 V_{RMS}	Type test UL / IEC 62109-1 chapter 7.5.3
Cooling	Natural convection	-

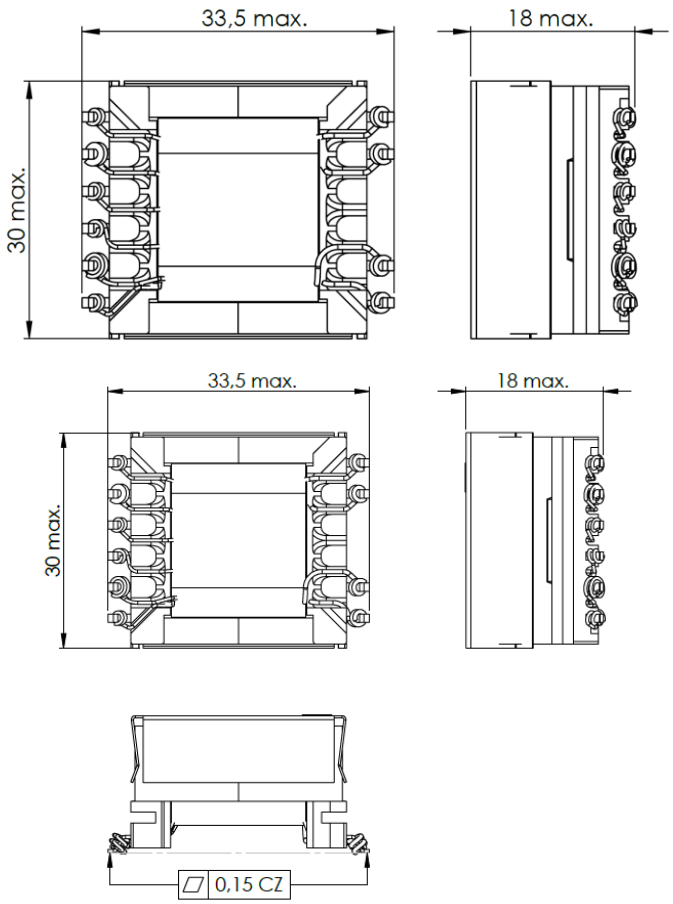

Figure 3. Transformer view (dimensions in mm)

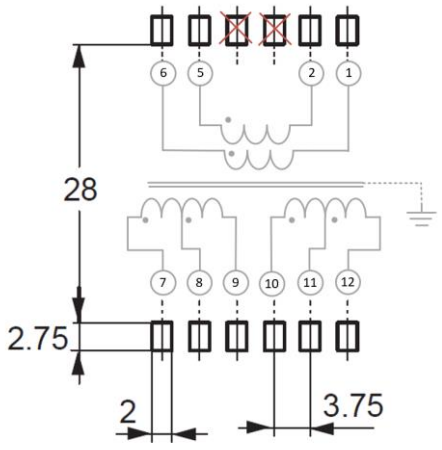

Figure 4. Transformer footprint (dimensions in mm [inch])