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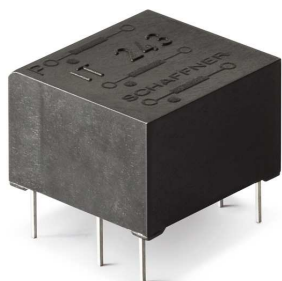
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Pulse Transformer with Double Secondary Winding



- ▮ Galvanic separation of drive and power circuit
- ▮ Voltage resistance up to 4 kV
- ▮ Ignition current up to 1 A
- ▮ Turns ratio up to 3:1:1



Approvals

ROHS

Features and benefits

- ▮ Galvanic separation with secondary winding
- ▮ Voltage resistance up to 4 kV
- ▮ Allows high potential difference voltage scaling
- ▮ Vacuum potting
- ▮ Very low partial discharge effects
- ▮ PCB through hole mounting
- ▮ Custom-specific versions on request

Technical specifications

| | |
|--|---|
| Nominal operating voltage | Up to 500 V |
| Operating frequency | 40 kHz max. 500 kHz max. for data transmission DC to 40000 Hz |
| Ignition currents | 0.025 to 1 A @ 40°C |
| Rise time | 0.4 to 4 μs |
| Test voltage | Up/50 Hz/2 s max. according to VDE 110b |
| Max. partial discharge voltage | 1.5 x U ^{nom} |
| Temperature range (operation and storage) | -25°C to +70°C (25/70/21) |
| Flammability corresponding to | UL 94 V-0 listed materials |

Typical applications

- ▮ Gate drive circuit
- ▮ Power supplies
- ▮ Power converters
- ▮ Frequency converters
- ▮ Switching applications
- ▮ DC/DC converters
- ▮ Line coupling transformers in high-speed data transmission

Pulse transformer selection table

| Pulse transformer | Turns ratio | Ignition current I_{ign} [A] | Voltage | | Voltage time area V_{ot} [V μ s] | Rise time t_r [μ s] | Inductance * | | Resistance | | Coupling capacitance C_k [pF] | Input/Output connections | Weight [g] |
|-------------------|-------------|--------------------------------------|------------------|---------------|--|----------------------------------|---------------|-------------------------|-----------------------|-----------------------|---------------------------------------|--------------------------|---------------|
| | | | U_{nom} [V] | U_p [kV] | | | L_p [mH] | L_{str} [μ H] | R_p [Ω] | R_s [Ω] | | | |
| IT 143 | 1:1:1 | 0.025 | 500 | 4 | 800 | 0.6 | 15 | 200 | 3 | 3 | 10 | 02 | 14 |
| IT 242 | 1:1:1 | 0.1 | 500 | 3.2 | 250 | 0.9 | 2.5 | 75 | 0.75 | 0.75 | 7 | 02 | 6 |
| IT 243 | 1:1:1 | 0.1 | 500 | 3.2 | 250 | 1 | 2.5 | 85 | 0.8 | 0.8 | 7 | 02 | 6 |
| IT 213 | 1:1:1 | 0.25 | 380 | 2.5 | 450 | 0.4 | 6.5 | 20 | 1.4 | 1.4 | 40 | 02 | 9 |
| IT 233 | 1:1:1 | 0.25 | 500 | 4 | 300 | 1.3 | 3 | 45 | 0.8 | 0.8 | 7 | 02 | 13 |
| IT 253 | 1:1:1 | 0.25 | 500 | 3.2 | 160 | 1.3 | 1.1 | 45 | 0.55 | 0.55 | 6 | 02 | 6 |
| IT 312 | 1:1:1 | 0.25 | 380 | 2.5 | 1200 | 1 | 21 | 35 | 2.4 | 2.7 | 30 | 02 | 24 |
| IT 313 | 1:1:1 | 1 | 380 | 2.5 | 450 | 0.6 | 3 | 6 | 0.33 | 0.4 | 27 | 02 | 24 |
| IT 249 | 2:1:1 | 0.25 | 500 | 3.2 | 330 | 4 | 17 | 140 | 3.1 | 1.5 | 9 | 02 | 6 |
| IT 244 | 3:1:1 | 0.1 | 500 | 3.2 | 200 | 0.7 | 15 | 70 | 2.8 | 0.9 | 9 | 02 | 6 |
| IT 234 | 3:1:1 | 0.25 | 500 | 4 | 280 | 1 | 17 | 40 | 2 | 0.7 | 9 | 02 | 13 |
| IT 314 | 3:1:1 | 1 | 380 | 2.5 | 500 | 1 | 35 | 20 | 1.6 | 0.7 | 30 | 02 | 25 |

* Tolerance: +50%; -30%

Explanations:

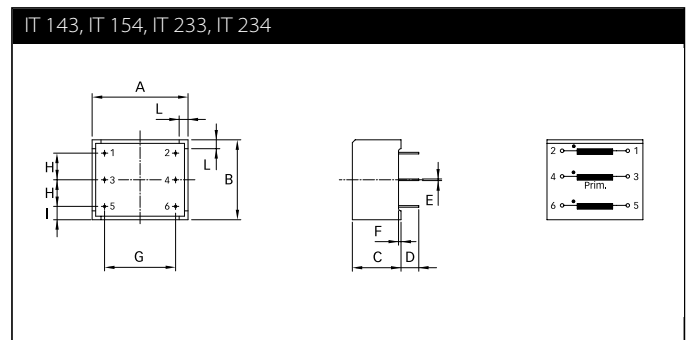
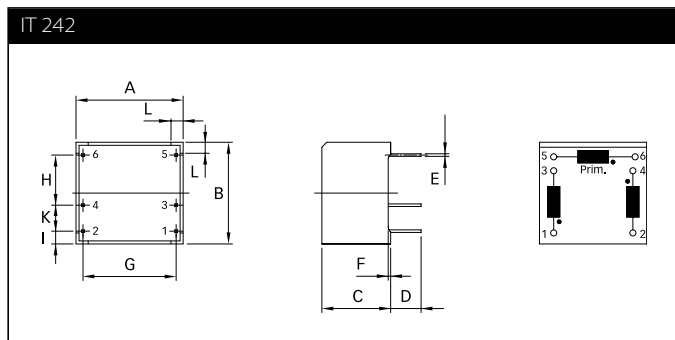
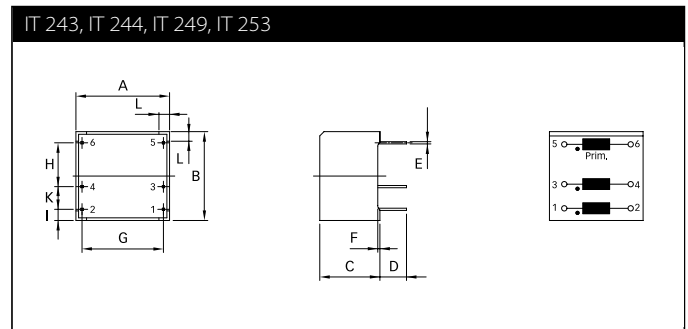
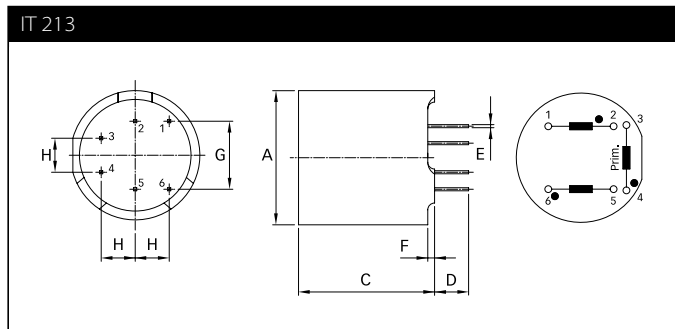
- t_r rise time at given load resistor R and 70% of the output pulse height.

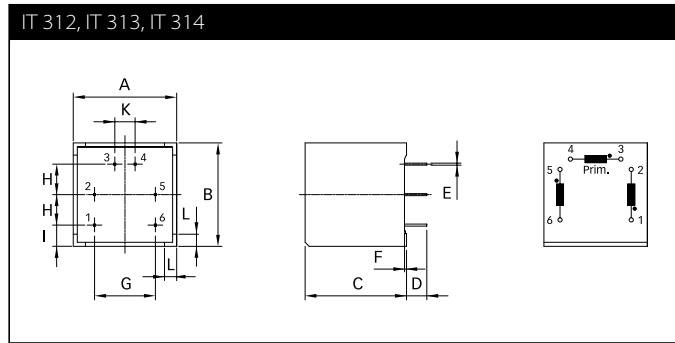
- L_p primary inductance measured at 1 kHz (secondary coils open).

- L_{str} stray inductance measured at the secondary side, short circuit at the primary side. If there are several secondary coils only one at the time is connected (measuring frequency 10 kHz).

- The ignition current is a set peak value where the voltage drop over the coil resistance is still insignificant (mostly below 1 V).

Mechanical data





Dimensions

| | IT 213 | IT 243 | IT 244 | IT 249 | IT 253 | IT 242 | IT 143 | IT 154 | IT 233 | IT 234 | IT 312 | IT 313 | IT 314 | ToI. |
|----------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|-------|
| A | ∅19 | 17.6 | 17.6 | 17.6 | 17.6 | 17.6 | 27* | 27* | 27* | 27* | 25.5* | 25.5* | 25.5* | ±0.1 |
| B | | 16.7 | 16.7 | 16.7 | 16.7 | 16.7 | 22.5* | 22.5* | 22.5* | 22.5* | 25.5* | 25.5* | 25.5* | ±0.1 |
| C | 20 | 11.3 | 11.3 | 11.3 | 11.3 | 11.3 | 13.7 | 13.7 | 13.7 | 13.7 | 25* | 25* | 25* | ±0.1 |
| D | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | +1/-0 |
| E | 0.45 | 0.42 | 0.42 | 0.42 | 0.42 | 0.42 | 0.45 | 0.45 | 0.45 | 0.45 | 0.5 | 0.5 | 0.5 | |
| F | 1 | 0.4 | 0.4 | 0.4 | 0.4 | 0.4 | 0.7 | 0.7 | 0.7 | 0.7 | 0.5 | 0.5 | 0.5 | |
| G | 10 | 15.3 | 15.3 | 15.3 | 15.3 | 15.3 | 20 | 20 | 20 | 20 | 15 | 15 | 15 | |
| H | 5 | 7.5 | 7.5 | 7.5 | 7.5 | 7.5 | 7.5 | 7.5 | 7.5 | 7.5 | 7.5 | 7.5 | 7.5 | ±0.2 |
| I | | 2.1 | 2.1 | 2.1 | 2.1 | 2.1 | 3.75 | 3.75 | 3.75 | 3.75 | 5.25 | 5.25 | 5.25 | ±0.2 |
| K | | 5 | 5 | 5 | 5 | 5 | | | | | 5 | 5 | 5 | ±0.2 |
| L | | 2 | 2 | 2 | 2 | 2 | 2.5 | 2.5 | 2.5 | 2.5 | 3 | 3 | 3 | |

* Tolerance is ±0.2

All dimensions in mm; 1 inch = 25.4 mm
Tolerances according: ISO 2768-m/EN 22768-m

Please visit www.schaffner.com to find more details on filter connectors.



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