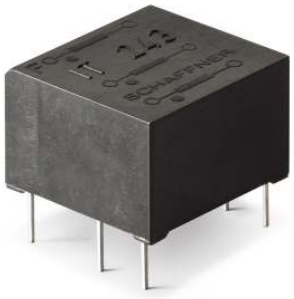
SCHAFFNER
energy efficiency and reliability

Pulse Transformer with Double Secondary Winding
Pulse Transformers IT series



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

Approvals

RoHS

Technical specifications

Flammability corresponding to	UL 94 V-0 listed materials
Ignition currents	0.025 to 1A @ 40 °C
Max. partial discharge voltage	1.5 x U<sup>nom<sup>
Nominal operating voltage	Up to 500 V
Rise time	0.4 to 4 µs
Temperature range (operation and storage)	-25 °C to +70 °C (25/70/21)
Test voltage	Up/50 Hz/2s max. according to VDE 110b

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.

Typical applications

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

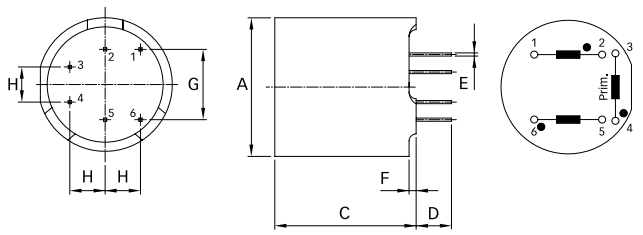
Pulse transformer selection table

Pulse transformer	Turns ratio	Ignition current	Voltage		Voltage time area	Rise time	Inductance		Resistance		Coupling capacitance	Input/Output connections	Weight
		I_{ign} [A]	U_{nom} [V]	U_p [kV]	V_{0t} [Vµs]	t_r [µs]	L_p [mH]	L_{str} [µH]	R_p [Ω]	R_s [Ω]	C_k [pF]	⊥	[g]
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 154	3:1:1	0.1	500	4	600	1.3	75	180	7.5	2.2	9	02	14
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

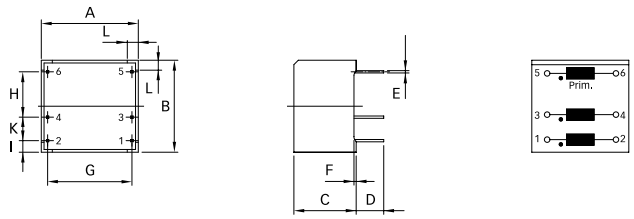
Explanations:
– t_r rise time at given load resistor R and 70% of the output pulse height.
– L_p primary inductance measured at 1 kHz (secondary coile open).
– L_{str} stray inductance measured at the secondary side, short circuit at the primary side. If there are several secondary coils only one at 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

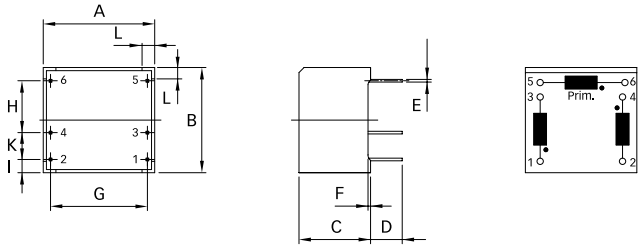
IT 213



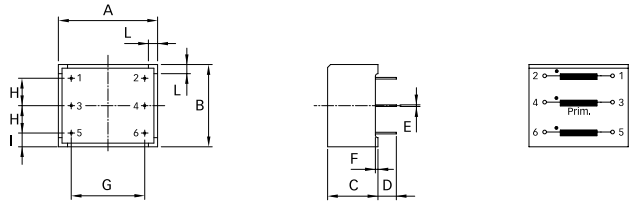
IT 243, IT 244, IT 249, IT 253



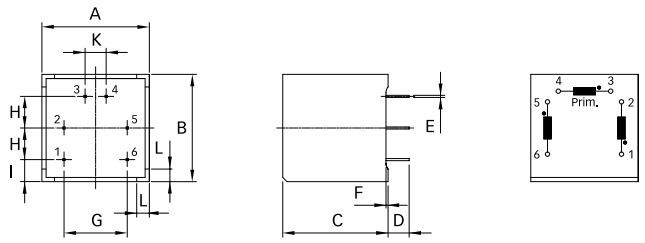
IT 242



IT 143, IT 154, IT 233, IT 234



IT 312, IT 313, IT 314



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	Tol.
A	Ø19	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 = 25.4mm
Tolerances according: ISO 2768-m / EN 22768-m

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