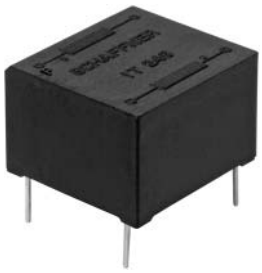
Pulse transformers
IT series

Pulse transformer with single secondary winding

schaffner
energy efficiency and reliability



- **Galvanic separation of drive and power circuit**
- **Voltage resistance up to 8kV**
- **Ignition current up to 3A**
- **Turns ratio up to 3:1**

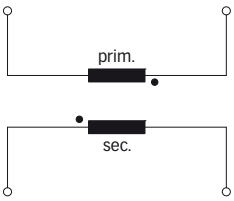
Approvals

RoHS
2002/95/EC

Technical specifications

Nominal operating voltage:	Up to 3000V
Operating frequency:	40kHz max.
	500kHz max. for data transmission
Ignition currents:	0.1 to 3A @ 40°C
Rise time:	0.3 to 2.3µs
Test voltage:	U_p/50Hz/2s 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 94V-0 listed materials

Typical electrical schematic



IT pulse transformers are designed to offer you galvanic isolation for transformer coupled gate drives. The IT series provides negligible delays and the possibility of voltage scaling. They are available with single or double secondary winding for multiple gate drives. Choosing the IT product line brings you the rapid availability of a standard gate drive transformer. A wide selection on turns ratio, ignition current and voltages are designed to offer you the desired standard product.

Features and benefits

- Galvanic separation.
- Voltage resistance up to 8kV.
- Allows high potential difference voltage scaling.
- Optional grounded shields.
- Vacuum potting.
- Very low partial discharge effects.
- PCB through hole mounting or faston types.
- 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 155	1:1	0.1	500	4	480	1	5	85	1.2	1.2	6	02		13
IT 245	1:1	0.1	750	4	500	1.2	8	100	1.48	1.48	10	02		6
IT 237	1:1	0.25	500	2.5	1100	1	25	35	1.9	2.2	50	02		14
IT 239	1:1	0.25	1000	6	300	2.3	3	80	0.9	0.9	5	02		13
IT 255	1:1	0.25	750	4	250	1.1	2.2	40	0.8	0.8	8	02		6
IT 258	1:1	1	750	3.2	250	0.25	2.5	3	0.62	0.75	80	02		6
IT 370	1:1	1	1000	5	4000	0.6	0.3	6	0.16	0.18	40	02		71
IT 364*	1:1	3	3000	8	5000	1.7	1.5	10	0.16	0.14	35		05	220
IT 246	2:1	0.1	750	4	200	0.4	7	35	2.1	1.1	7	02		6
IT 248	2:1	0.25	750	3.2	350	2.2	17	80	3.2	1.6	9	02		6
IT 362*	2:1	3	1000	5	3500	0.4	3	25	2.4	0.3	20		05	360
IT 260	3:1	0.1	500	3.2	200	0.3	12	30	2	0.8	8	02		6

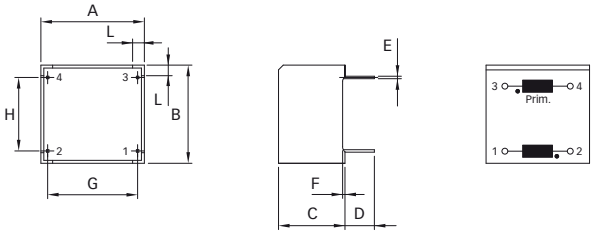
* Not suitable for PCB-mounting.

Explanations:

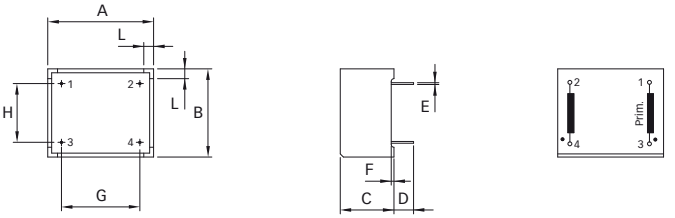
- t_r rise time at given load resistor R and 70% of the output pulse height.
- L_p primary inductance measured at 1kHz (secondary coile open).
- L_{str} stray inductance measured at the secondary side, short circuit at the primary side. If there are several secondary coils only one at the time is connected (measuring frequency 10kHz).
- The ignition current is a set peak value where the voltage drop over the coil resistance is still insignificant (mostly below 1V).

Mechanical data

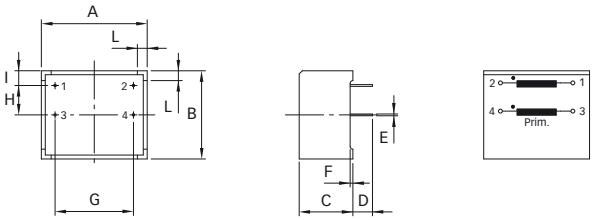
IT 245, IT 246, IT 248, IT 255, IT 258, IT 260



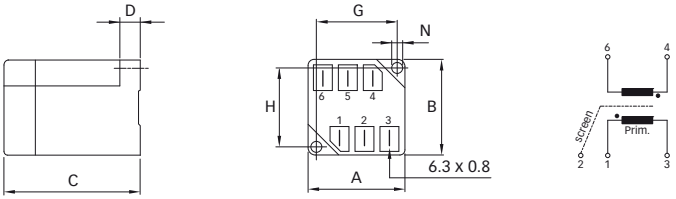
IT 239



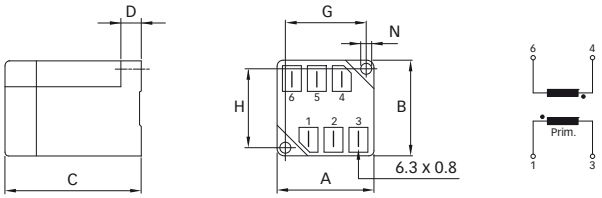
IT 155, IT 237



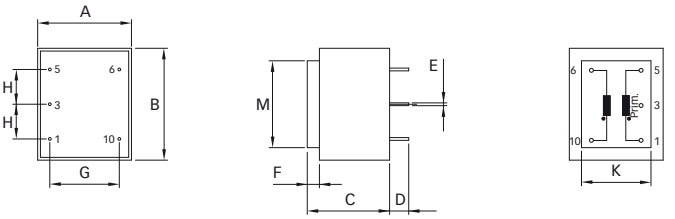
IT 362



IT 364



IT 370



Dimensions

	IT 245	IT 246	IT 248	IT 255	IT 258	IT 260	IT 239	IT 155	IT 237	IT 362	IT 364	IT 370	Tol.
A	17.6*	17.6*	17.6*	17.6*	17.6*	17.6*	27	27	27	50	50	27	±0.2
B	16.7*	16.7*	16.7*	16.7*	16.7*	16.7*	22.5	22.5	22.5	50	50	32.2	±0.2
C	11.3*	11.3*	11.3*	11.3*	11.3*	11.3*	13.7	13.7	13.7	72	60	23.7	±0.2
D	5	5	5	5	5	5	5	5	5	10*	10*	5.5	+1/-0
E	∅0.42	∅0.42	∅0.42	∅0.42	∅0.42	∅0.42	∅0.45	∅0.45	∅0.45			Ø0.8	
F	0.4	0.4	0.4	0.4	0.4	0.4	0.7	0.7	0.7			3.5	
G	15.3	15.3	15.3	15.3	15.3	15.3	20	20	20	42	42	20	±0.2
H	12.5	12.5	12.5	12.5	12.5	12.5	15	7.5	7.5	42	42	10	±0.2
I								3.5	3.5				±0.2
L	2	2	2	2	2	2	2.5	2.5	2.5				
M												25	±0.2
N										Ø4.2	Ø4.2		

* Tolerance is ±0.1

All dimensions in mm; 1 inch = 25.4mm

Tolerances according: ISO 2768-m / EN 22768-m