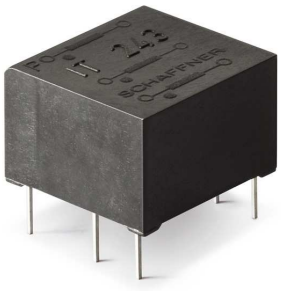
schaffner
shaping electrical power

Pulse Transformer with Single Secondary Winding



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

Approvals

RoHS

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.

Technical specifications

Nominal operating voltage	Up to 3000 V
Operating frequency	40 kHz max. 500 kHz max. for data transmission DC to 40000 Hz
Ignition currents	0.1 to 3 A @ 40°C
Rise time	0.3 to 2.3 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

Features and benefits

- Galvanic separation
- Voltage resistance up to 8 kV
- 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

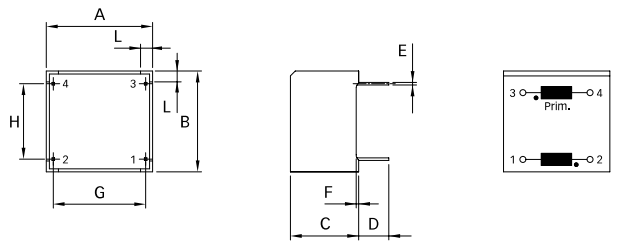
Pulse transformer	Turns ratio	Ignition current	Voltage		Voltage time area	Rise time	Inductance*		Resistance		Coupling capacitance	Input/ Output connections		Weight
		Iign	Unom	Up	V0t	tr	Lp	Lstr	Rp	Rs	Ck			
		[A]	[V]	[kV]	[Vµs]	[µs]	[mH]	[µH]	[Ω]	[Ω]	[pF]			[g]
IT 155	1:1	0.1	500	4	480	1	5	85	1.2	1.2	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 260	3:1	0.1	500	3.2	200	0.3	12	30	2	0.8	8	02		6

* Tolerance: +50%; -30%
** Not suitable for PCB-mounting.

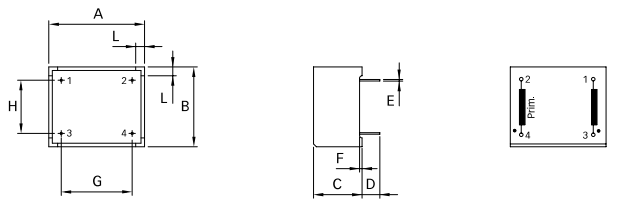
Explanations:
– tr rise time at given load resistor R and 70% of the output pulse height.
– Lp primary inductance measured at 1 kHz (secondary coile open).
– Lstr stray inductance measured at the secondary side, short circuit at the primary side. If there are several secondary coils only one at the time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

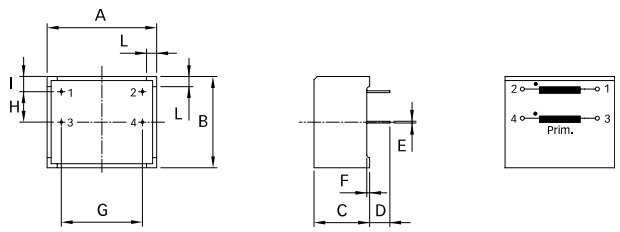
IT 245, IT 246, IT 248, IT 255, IT 258, IT 260



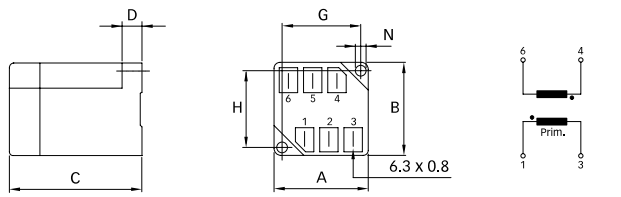
IT 239



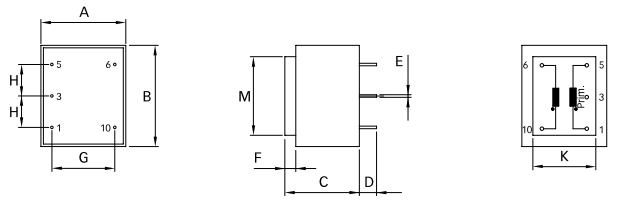
IT 155, IT 237



IT 364



IT 370



Dimensions

	IT 245	IT 246	IT 248	IT 255	IT 258	IT 260	IT 239	IT 155	IT 237	IT 364	IT 370	Tol.
A	17.6*	17.6*	17.6*	17.6*	17.6*	17.6*	27	27	27	50	27	±0.2
B	16.7*	16.7*	16.7*	16.7*	16.7*	16.7*	22.5	22.5	22.5	50	32.2	±0.2
C	11.3*	11.3*	11.3*	11.3*	11.3*	11.3*	13.7	13.7	13.7	60	23.7	±0.2
D	5	5	5	5	5	5	5	5	5	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	20	±0.2
H	12.5	12.5	12.5	12.5	12.5	12.5	15	7.5	7.5	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		

* Tolerance is ±0.1

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

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