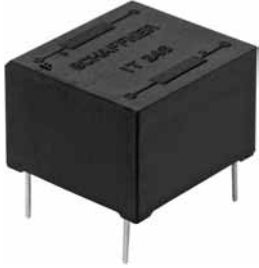


Pulse Transformer with Single Secondary Winding

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

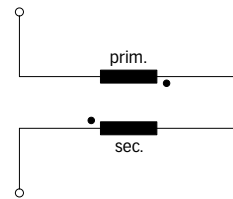
Approvals



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:	$U_p/50\text{Hz}/2\text{s}$ max. according to VDE 110b
Max. partial discharge voltage:	$1.5 \times U_{nom}$
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 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 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

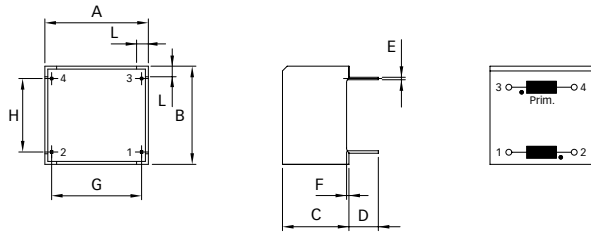
* Not suitable for PCB-mounting.

Explanations:

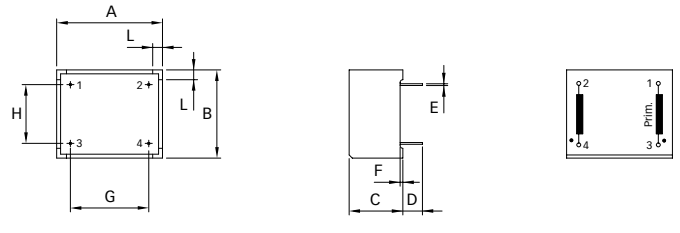
- t_r rise time at given load resistor R and 70% of the output pulse height.
- L_p primary inductance measured at 1kHz (secondary coils open).
- L_{str} stray inductance measured at the secondary side, short circuit at the primary side. If there are several secondary coils only one at the time is connected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

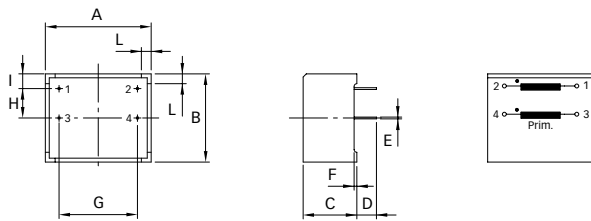
IT 245, IT 246, IT 248, IT 255, IT 258, IT 260



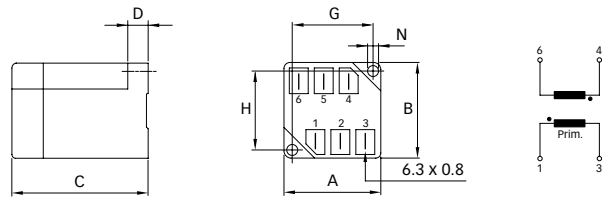
IT 239



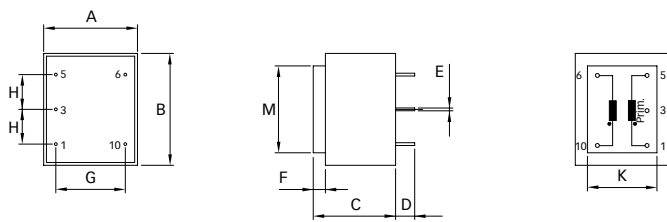
IT 155, IT 237



IT 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		∅0.8	
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										∅4.2		

* Tolerance is ±0.1

All dimensions in mm; 1 inch = 25.4mm

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

**Headquarters and
global innovation and
development center**

Schaffner Group
Nordstrasse 11
4542 Luterbach
Switzerland
T +41 32 681 66 26
F +41 32 681 66 30
info@schaffner.ch
www.schaffner.com

Sales and application centers

China
Schaffner EMC Ltd. Shanghai
Building 11, Lane 1365
East Kangqiao Road
Shanghai 201319
T +86 21 6813 9855
F +86 21 6813 9811
cschina@schaffner.com
www.schaffner.com

Germany
Schaffner Deutschland GmbH
Schoemperlenstrasse 12B
76185 Karlsruhe
T +49 721 56910
F +49 721 569110
germanysales@schaffner.com

Finland
Schaffner Oy
Tynninkuja 7
08700 Lohja
T +358 19 35 72 71
F +358 19 32 66 10
finlandsales@schaffner.com

France
Schaffner EMC S.A.S.
112, Quai de Bezons
95103 Argenteuil
T +33 1 34 34 30 60
F +33 1 39 47 02 28
francesales@schaffner.com

Italy
Schaffner EMC S.r.l.
Via Galileo Galilei, 47
20092 Cinisello Balsamo (MI)
T +39 02 66 04 30 45/47
F +39 02 61 23 943
italysales@schaffner.com

Japan
Schaffner EMC K.K.
Mitsui-Seimei Sangenjaya Bldg. 7F
1-32-12, Kamiyama, Setagaya-ku
Tokyo 154-0011
T +81 3 5712 3650
F +81 3 5712 3651
japansales@schaffner.com
www.schaffner.jp

Sweden
Schaffner EMC AB
Turebergstorg 1, 6
19147 Sollentuna
T +46 8 5792 1121/22
F +46 8 92 96 90
swedensales@schaffner.com

Switzerland
Schaffner EMV AG
Nordstrasse 11
4542 Luterbach
T +41 32 681 66 26
F +41 32 681 66 41
sales@schaffner.ch

Singapore
Schaffner EMC Pte Ltd.
Blk 3015A Ubi Road 1
05-09 Kampong Ubi Industrial
Estate
T +65 6377 3283
F +65 6377 3281
singaporesales@schaffner.com

Spain
Schaffner EMC España
Calle Caléndula 93,
Miniparc III, Edificio E
El Soto de la Moraleja,
Alcobendas
28109 Madrid
T +34 618 176 133
spainsales@schaffner.com

Taiwan
Schaffner EMV Ltd.
6th Floor, No 413
Rui Guang Road
Neihu District
Taipei City 114
T +886 2 87525050
F +886 2 87518086
taiwansales@schaffner.com

Thailand
Schaffner EMC Co. Ltd.
Northern Region Industrial Estate
67 Moo 4 Tambon Ban Klang
Amphur Muang P.O. Box 14
Lamphun 51000
T +66 53 58 11 04
F +66 53 58 10 19
thailandsales@schaffner.com

UK
Schaffner Ltd.
5 Ashville Way
Molly Millars Lane
Wokingham
Berkshire RG41 2PL
T +44 118 9770070
F +44 118 9792969
uksales@schaffner.com
www.schaffner.uk.com

USA
Schaffner EMC Inc.
52 Mayfield Avenue
Edison, New Jersey 08837
T +1 732 225 9533
F +1 732 225 4789
usasales@schaffner.com
www.schaffner.com/us

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