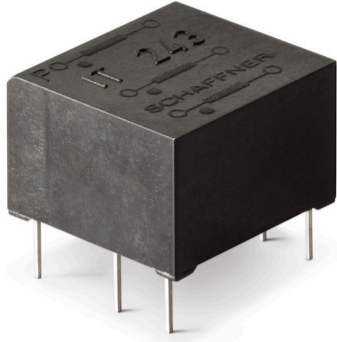




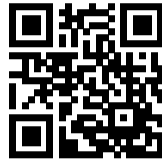
**THE DATASHEET OF  
IT233**



# 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 & Compliances

### 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

### Typical Applications

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

## Technical Specifications

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

### Pulse Transformer Selection Table

Pulse transformer	Turns ratio	Ignition current $I_{ign}$ [A]	Voltage		Voltage time area $V_{ot}$ [V $\mu$ s]	Rise time $t_r$ [ $\mu$ s]	Inductance *		Resistance		Coupling capacitance $C_k$ [pF]	Input/Output connections	Weight [g]
			$U_{nom}$ [V]	$U_p$ [kV]			$L_p$ [mH]	$L_{str}$ [ $\mu$ H]	$R_p$ [ $\Omega$ ]	$R_s$ [ $\Omega$ ]			
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:

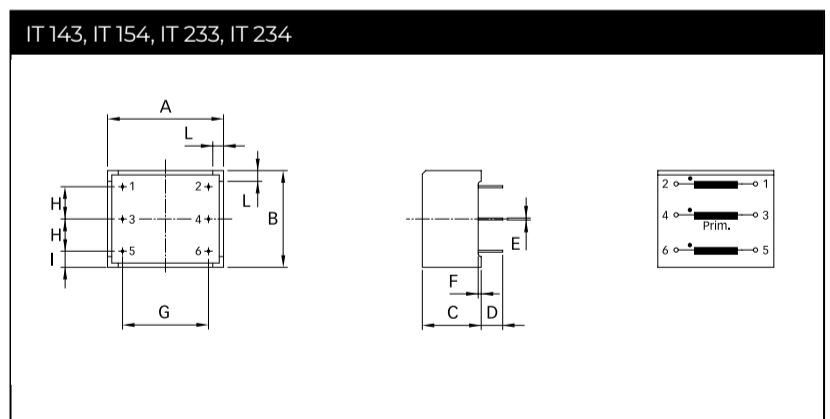
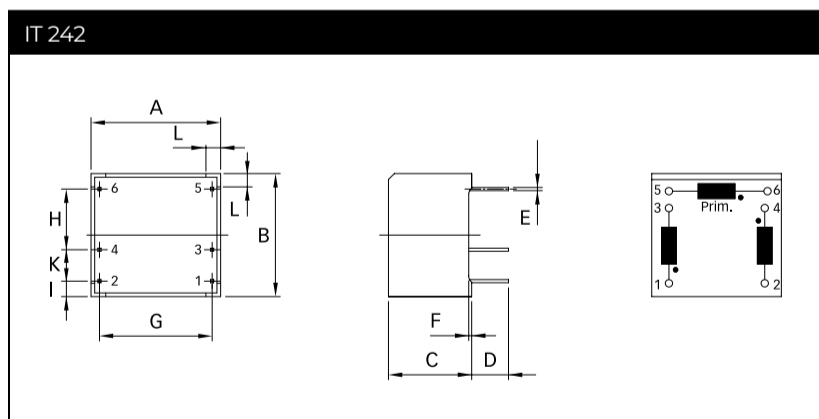
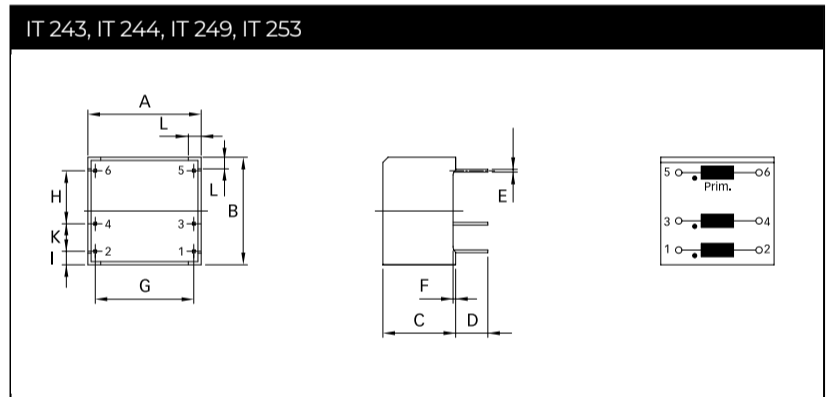
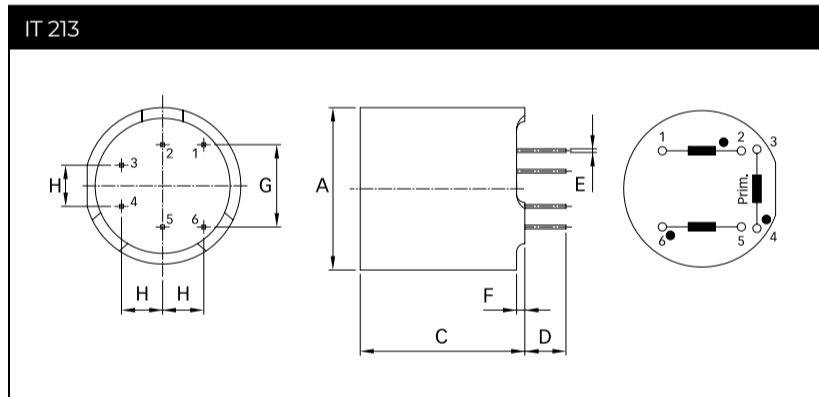
-  $t_r$  rise time at given load resistor R and 70% of the output pulse height.

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

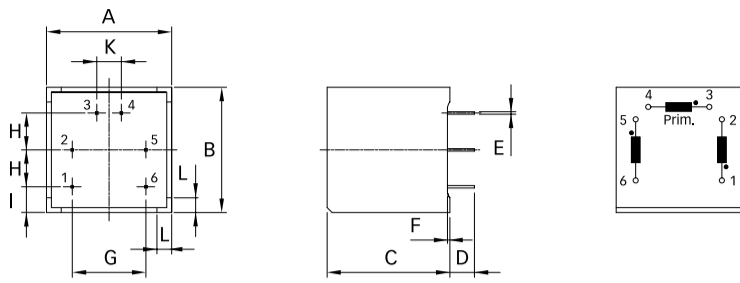
-  $L_{str}$  stray inductance measured at the secondary side, short circuit at the primary side. If there are several secondary coils only one at the time is connected (measuring frequency 10 kHz).

- 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 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.
<b>A</b>	Ø19	17.6	17.6	17.6	17.6	17.6	27*	27*	27*	27*	25.5*	25.5*	25.5*	±0.1
<b>B</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
<b>C</b>	20	11.3	11.3	11.3	11.3	11.3	13.7	13.7	13.7	13.7	25*	25*	25*	±0.1
<b>D</b>	5	5	5	5	5	5	5	5	5	5	5	5	5	+1/-0
<b>E</b>	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	
<b>F</b>	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	
<b>G</b>	10	15.3	15.3	15.3	15.3	15.3	20	20	20	20	15	15	15	
<b>H</b>	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
<b>I</b>		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
<b>K</b>		5	5	5	5	5					5	5	5	±0.2
<b>L</b>		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

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