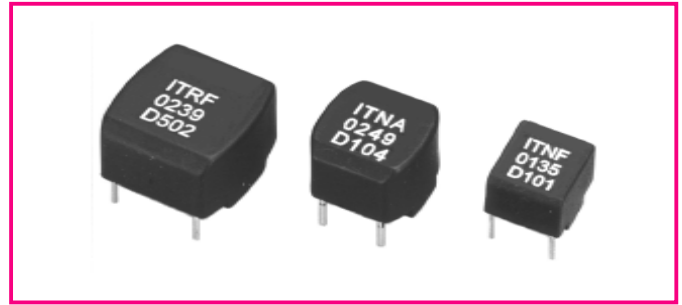


# Pulse Transformer for Conventional Board Assemblies



## IT Series, Turns Ratio 1:1, 2:1 and 1:1:1

Voltage-time integral $U_s \times T_w$ :	150 - 400 V $\mu$ s
Pulse rise time $T_r$ :	0.05 - 1.5 $\mu$ s
Working voltage:	$U_{eff} \leq 600$ VAC
Partial discharge voltage:	$U_e \leq 1.5 \times U_{eff}$
Climatic category:	25/100/21 acc. to IEC 60068-1
Plastic case:	UL 94 V-0
Potting resin:	UL 94 V-0



TIMONTA pulse transformers have been specially developed for the control of semi-conductors in power electronics. Application possibilities are numerous and various and deal mainly with triggering Thyristors, Triacs, power transistors and IGBTs. In most cases there is a suitable model available from the balanced component series for the development of dependable and economical circuits.

The desired specifications are archived through specifically selected materials and well-developed winding technology, and provide the following advantages:

- Electrical separation of circuit and power circuit, with a high insulation rating of at least 3.2 kV between the primary and secondary windings.
- Electrical separation with high insulation rating (at least 500 V) between secondary windings.
- Simple circuit layout, since there is sufficient power available to the circuit. This makes special extra provision on the power supply side unnecessary.
- Small coupling capacitances between primary and secondary windings limit transient feedback from the power supply side to the control electronics.
- The defined partial discharge voltage guarantees an effectively unlimited serviceable life.

## Technical Data

Description	$\int U dt$ [V $\mu$ s]	$T_r$ [ $\mu$ s]	$R_L$ [ $\Omega$ ]	$I_t$ [A]	$R_p$ [ $\Omega$ ]	$R_s$ [ $\Omega$ ]	$C_c$ [pF]	$U_{isol}$ [kV~]	$P_m^{(1)}$ [W]	Case	Turn ratio [N]	$L_s$ [mH]	Application
ITNA-0235-D103	200	0.9	100	0.1	1	1	20	3.5	0.5	35 - 3	1 : 1	2.8	Universal
ITRA-0235-D103	200	0.05	100	0.1	1.5	1	80	3.2	0.5	35 - 3	1 : 1	2.8	$T_R \leq 0.05 \mu s$
ITNA-0249-D104	300	1	100	0.1	0.7	0.7	20	3.5	0.7	49 - 3	1 : 1	3.5	Universal
ITRA-0249-D104	300	0.05	100	0.1	0.7	0.7	90	3.2	0.7	49 - 3	1 : 1	3.5	$T_R \leq 0.05 \mu s$
ITNA-0239-D202	400	1	60	0.17	0.4	0.4	20	3.5	1.0	39 - 3	1 : 1	2.2	Universal
ITRA-0239-D502	400	0.1	20	0.5	0.4	0.4	100	3.2	1.0	39 - 3	1 : 1	2.2	$T_R \leq 0.1 \mu s$
ITNB-0249-D101	250	1	100	0.1	1.0	0.5	20	3.5	0.7	49 - 3	2 : 1	1.6	Universal
ITRB-0249-D101	250	0.05	100	0.1	1.0	0.5	70	3.2	0.7	49 - 3	2 : 1	1.4	$T_R \leq 0.05 \mu s$
ITNB-0239-D202	350	1.5	60	0.17	0.8	0.4	20	3.5	1.0	39 - 3	2 : 1	1.8	Universal
ITRB-0239-D502	350	0.5	20	0.5	0.8	0.4	90	3.2	1.0	39 - 3	2 : 1	1.8	$T_R \leq 0.5 \mu s$
ITNF-0135-D101	150	0.9	100	0.1	0.5	0.5	10	3.5	0.5	35 - 4	1 : 1 : 1	1.1	Universal
ITRF-0235-D101	150	0.05	100	0.1	1	0.5	40	3.2	0.5	35 - 4	1 : 1 : 1	1.1	$T_R \leq 0.05 \mu s$
ITNF-0249-D101	250	1	100	0.1	0.5	0.5	20	3.5	0.7	49 - 4	1 : 1 : 1	1.4	Universal
ITRF-0249-D101	250	0.05	100	0.1	0.4	0.5	70	3.2	0.7	49 - 4	1 : 1 : 1	1.2	$T_R \leq 0.05 \mu s$
ITNF-0239-D202	350	1.5	60	0.17	0.4	0.4	20	3.5	1.0	39 - 4	1 : 1 : 1	1.6	Universal
ITRF-0239-D502	350	0.5	20	0.5	0.4	0.4	90	3.2	1.0	39 - 4	1 : 1 : 1	1.6	$T_R \leq 0.5 \mu s$

Table data at  $\vartheta_a$  25°C

(1)  $P_m @ \vartheta_a$  50°C; Power derating over 50°C:  $P = P_m \times (100 - \vartheta_a) / 50$

On request, models with other turn ratios are available

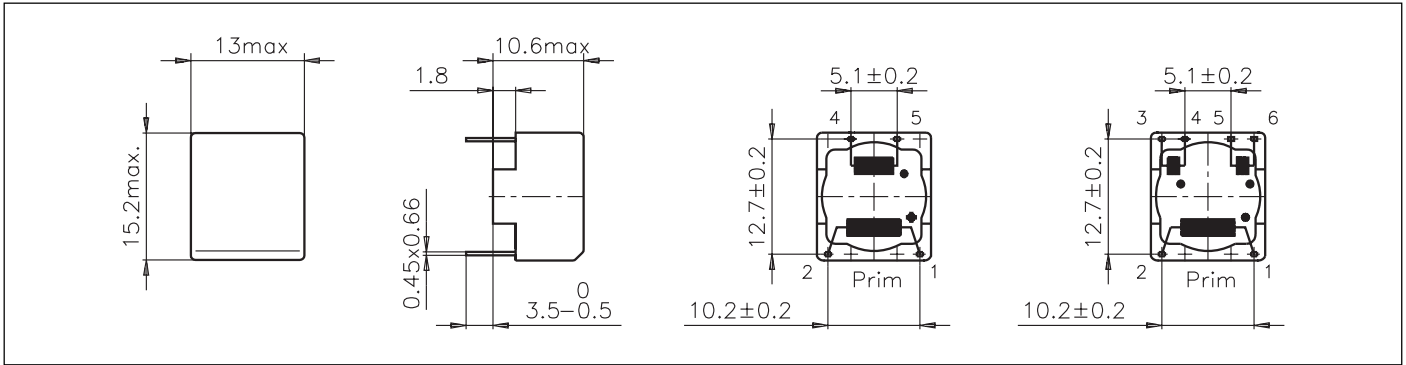
# Conventional Cases



**Case 35**

**35-3**

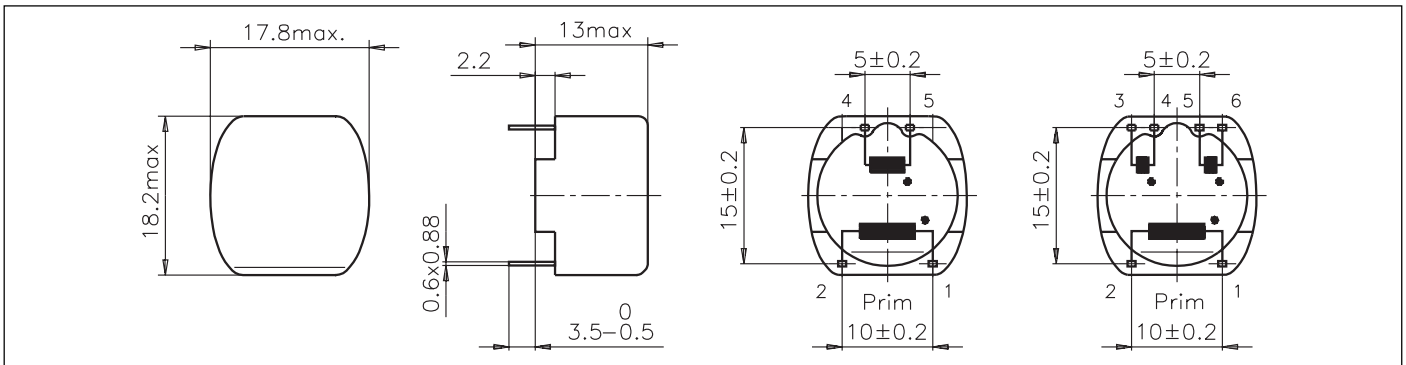
**35-4**



**Case 49**

**49-3**

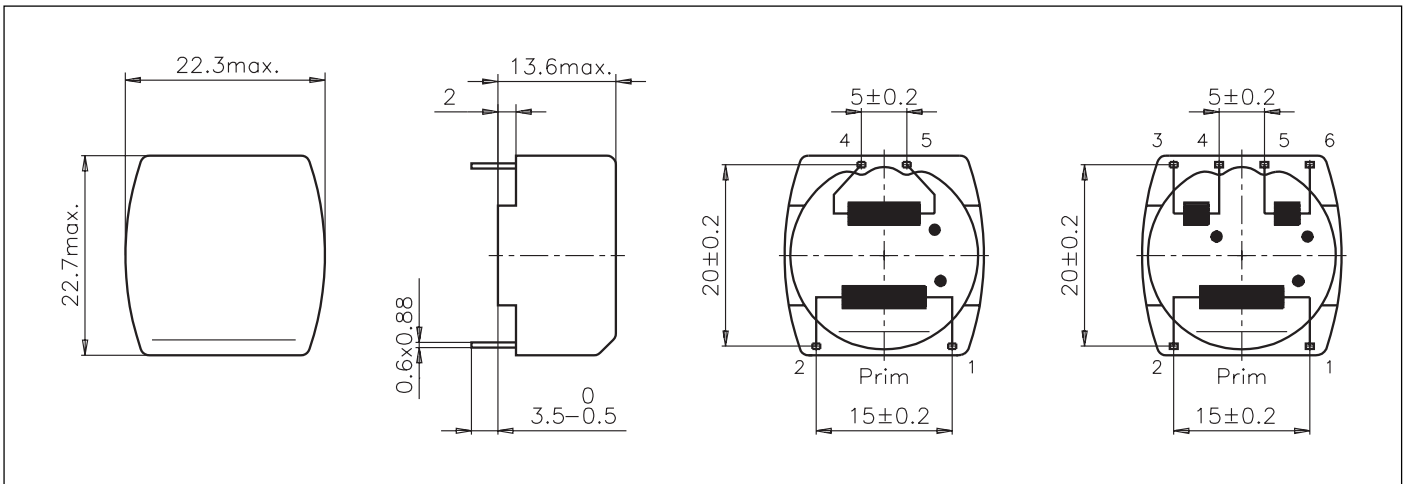
**49-4**



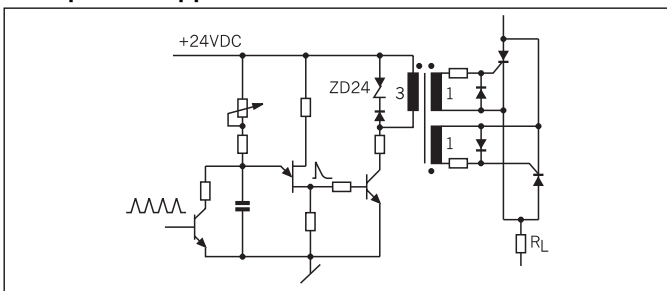
**Case 39**

**39-3**

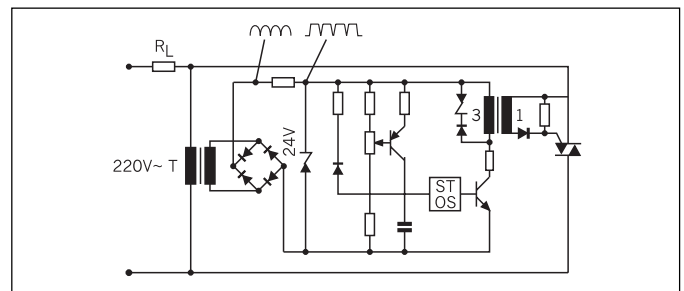
**39-4**



## Examples of applications



Firing of antiparallel Thyristors (SCR's) by means of unijunction and transistor amplifiers



Triac phase angle control