

Explanations

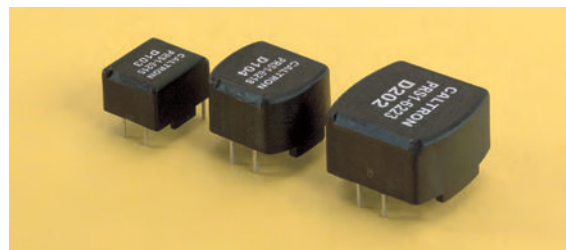
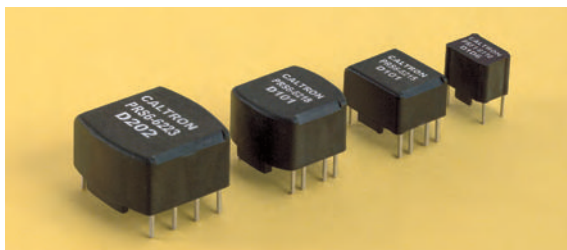
The pulse transformer (IT) is used above all as drive module from the control electronics to the power part. In almost all applications a control pulse is transformed, galvanically separated, to the high voltage potentials. Whether with the ignition of thyristors and triacs or when driving modern components such as FET's or IGBT's, the pulse transformer is used everywhere.

It is also used in telecommunications as a galvanic separating element in data transmission devices. Compared with the solution using opto couplers a simplified switching structure and direct energy transfer are possible (no auxiliary supply necessary). Pulse transformers have an almost unlimited life span, this is a further major advantage compared with the optical solutions with relatively low MTBF values.

Definitions:

- N** : turn ratio or voltage ratio between primary and secondary windings.
- $\int U dt$** : voltage-time area ($V\mu s$)
This is the product of impulse height and pulse width measured at half impulse height.
- t_r** : Pulse rise time (μs)
This time is measured from 10% ÷ 90% of the pulse height.
- I_f** : Firing current (A)
Max. available pulse current.
- L_p** : Primary inductance (mH)
Measured as per EN 60938 (signal 0.1mA, tolerance -30 +50%).
- C_c** : Coupling capacity (pF)
Measured between primary and secondary winding.
Is heavily dependent on the winding structure.
- U_R** : Maximum operating voltage (V).
- U_p** : Test voltage (kV)
Measured between primary and secondary winding
Also dependent on the winding structure.
Measurement 100% in the final test (up to 3.5 kV AC for 2 seconds).
- U_G** : Glow discharge voltage (V)
Determines the life expectancy of the IT's in operation with excessive operating voltage.
At least 50% higher than the max. operating voltage.
- P_d** : Maximum power loss at 50°C ambient temperature.

PULSE TRANSFORMERS



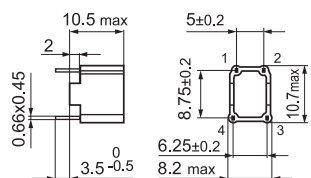
PRS AND PRF - 10, 15, 18, 23

SERIES IN HORIZONTAL VERSION

Pulse transformers in horizontal version enable space economising, flat printed circuit board assembly. The simple construction enables high performance parameters with low heat development and an optimum price-performance ratio. The customer has a selection of four closed housings.

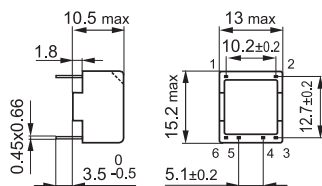
Turns ratios	: 1 : 1 - 2 : 1 - 1 : 1 : 1
Voltage-time area $\int Udt$: 25 to 400 $V\mu s$
Pulse rise time t_r	: 0.05 to 1.5 μs
Max. operating voltage U_R	: 600 VAC (380 VAC for 6110 type)
Test voltage	: U_p (See table)
Glow discharge voltage U_G	: 1.5 x max. U_R
Climatic class	: 25/100/21 as per IEC 60068-1
Inflammability	: UL 94 V-0

Case type 10



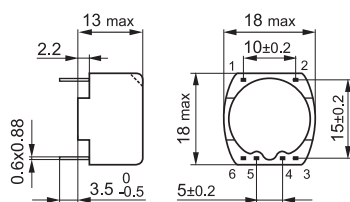
Connections	Type	Turn ratio [N]	$\int Udt$ [$V\mu s$]	t_r [μs]	I_r [A]	R_L [Ω]	L_P [mH]	R_p [Ω]	R_s [Ω]	C_C [pF]	U_p [kVAC]	P_d [W]
	PRF1-6110-D1D6	1 : 1	50	0.3	0.1	100	0.6	0.4	0.4	10	2.2	0.3
	PRF2-6110-D1D6	2 : 1	25	0.1	0.1	100	0.6	0.4	0.2	10	2.2	0.3

Case type 15



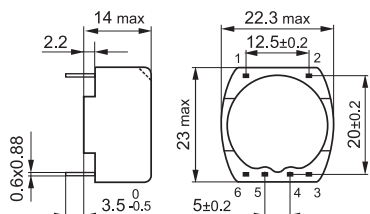
	PRS1-6215-D103	1 : 1	200	1.5	0.1	100	3.2	1	1	20	3.5	0.4
	PRS2-6215-D105	2 : 1	150	1	0.1	100	5	1	0.5	20	3.5	0.4
	PRS6-6215-D101	1 : 1 : 1	150	1	0.1	100	1.2	0.5	0.5	20	3.5	0.4

Case type 18



	PRS1-6218-D104	1 : 1	300	1.5	0.1	100	3.7	0.7	0.7	20	3.5	0.6
	PRF1-6218-D104	1 : 1	300	0.05	0.1	100	3.7	0.7	0.7	90	3.2	0.6
	PRS2-6218-D106	2 : 1	250	1	0.1	100	6.8	1	0.5	20	3.5	0.6
	PRF2-6218-D106	2 : 1	250	0.05	0.1	100	5.6	1	0.5	70	3.2	0.6
	PRS6-6218-D101	1 : 1 : 1	250	1	0.1	100	1.8	0.5	0.5	20	3.5	0.6
	PRF6-6218-D101	1 : 1 : 1	250	0.05	0.1	100	1.4	0.5	0.5	70	3.2	0.6

Case type 23



	PRS1-6223-D202	1 : 1	400	1.5	0.15	68	2.4	0.4	0.4	20	3.5	0.8
	PRF1-6223-D502	1 : 1	400	0.15	0.5	20	2.4	0.4	0.4	100	3.2	0.8
	PRS2-6223-D207	2 : 1	350	1.5	0.15	68	7.2	0.8	0.4	20	3.5	0.8
	PRF2-6223-D507	2 : 1	350	0.5	0.5	20	7.2	0.8	0.4	90	3.2	0.8
	PRS6-6223-D202	1 : 1 : 1	350	1.5	0.15	68	1.8	0.4	0.4	20	3.5	0.8
	PRF6-6223-D502	1 : 1 : 1	350	0.5	0.5	20	1.8	0.4	0.4	90	3.2	0.8

Power dissipation derating over 50°C: $P = P_d \cdot (100 - 9a)/50$

L_N measured according to EN 60938 - 2

R_{cu} measured at 25°C ambient temperature

SMD versions and customer-specific components on request