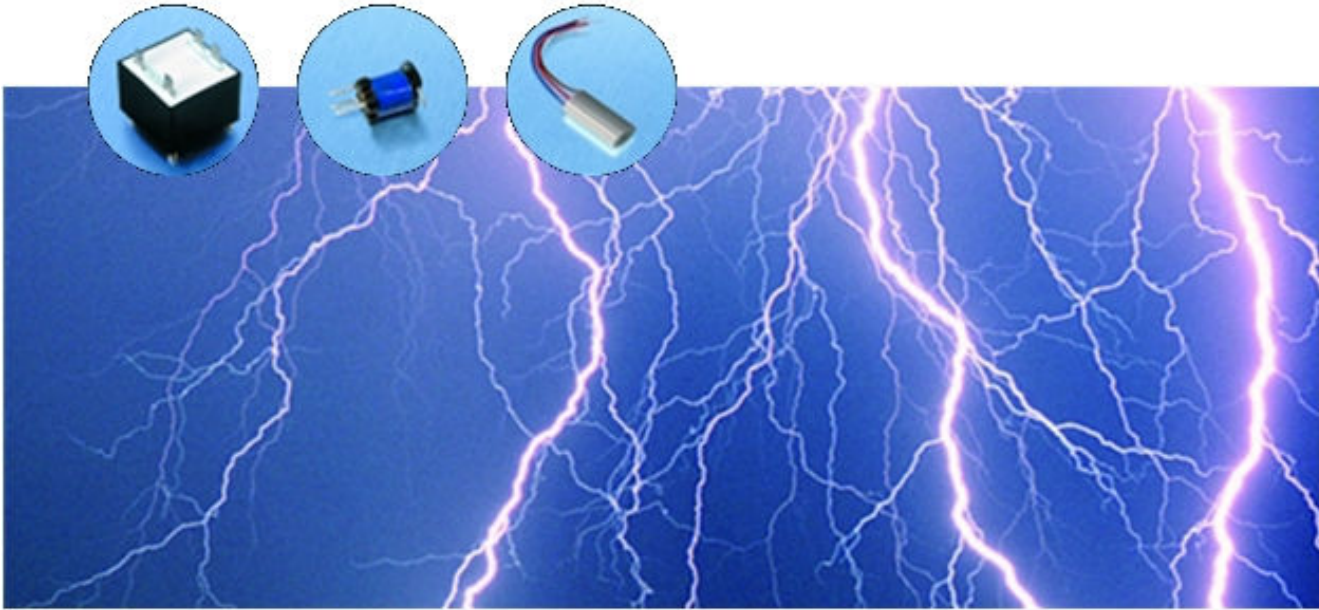


# Trigger Transformers



The process that effects the initial ionization within a flashlamp is known as "triggering." Triggering creates a voltage gradient in the gas of sufficient magnitude to cause ionization of the lamps. Most flashlamp applications use a trigger coil to produce high-voltage pulses of short duration, usually a few microseconds or less.

Two different types of circuits and transformers are used to introduce the voltage necessary to achieve ionization - series injection triggering and external triggering with the associated coils.

External triggering uses a high-voltage trigger pulse to create a thin ionized streamer between the anode and cathode within the lamp. The coupling of this voltage to the lamp can be achieved using a thin nickel wire wrapped around, or a metal stripe on the surface of the lamp envelope. These types of trigger coils are generally lighter, smaller, and less expensive than those used for series injection triggering. Series triggering offers higher timing accuracy and is often used in combination with liquid cooled lamps in lasers. Trigger coils are typically larger, since they not only generate the HV ignition, but also must cope with lamp currents in the order of several thousand Amps.

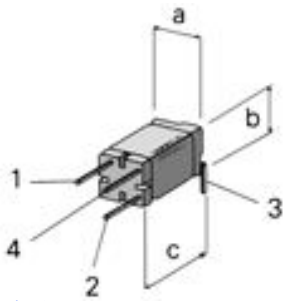


Fig. 1

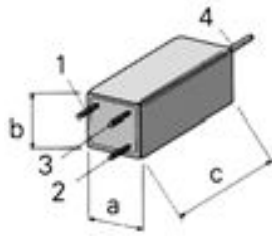


Fig. 2

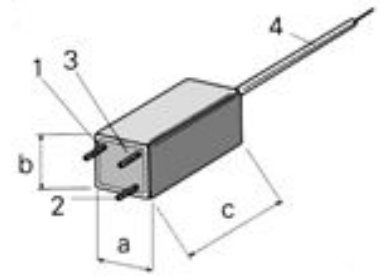


Fig. 3

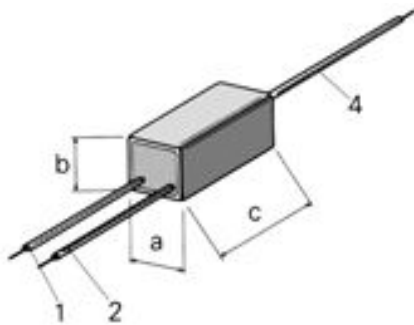


Fig. 4

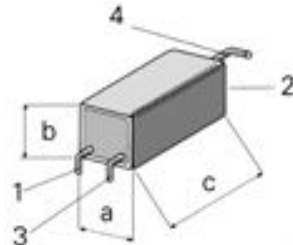


Fig. 5

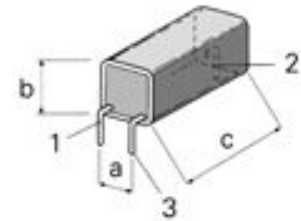


Fig. 6

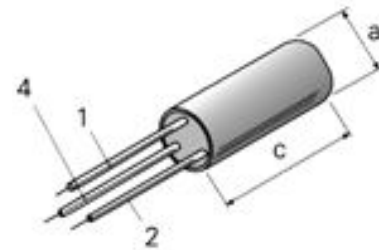


Fig. 7

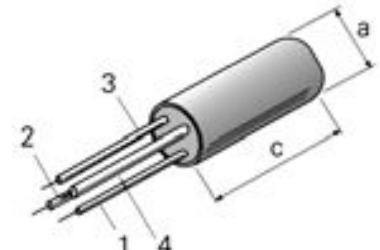


Fig. 8

External Trigger Transformers

Type	Figure	Sec. Voltage max / kV unloaded	Prim. Voltage max. unloaded V	Trigger Energy max/mWs	Trigger Power max / W	Transformer Ratio	Prim. Inductance $\mu$ H
ZS 1092	1	5	250	3	0.2	1:43	2
ZS 1052*	2	11	300	10	0.5	1:36	20
ZS 1052/1*	3	11	300	10	0.5	1:36	20
ZS 1052/11*	4	11	300	10	0.5	1:36	20
ZS 1052/12*	5	11	300	10	0.5	1:36	20
ZS 1052/1 (600)*	3	8	400	10	0.5	1:17	20
ZS 1052 AC*	6	11	300	10	0.5	1:36	20
ZS 1031	7	20	400	30	1	1:70	11
ZS 1031/11	8	20	400	30	1	1:70	11
ZS 1031/15	9	20	400	30	1	1:70	11
ZS 1031/7A	10	20	400	30	1	1:70	11
ZS 1032*	11	20	400	30	1	1:70	11
ZS 261816	12	15	250	10	0,5	1:65	39

\* Available with UL-listed materials, suitable for higher operation temperatures

Series Injection Trigger Transformers

Type	Figure	Sec. Voltage max / kV unloaded	Prim. Voltage max. unloaded V	Transformer Ratio	Prim. Inductance $\mu$ H
STS 36	13	25	600	1:44	33

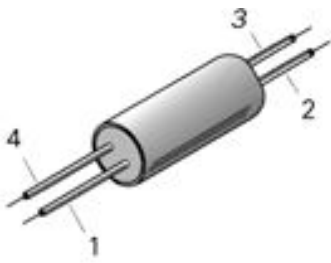


Fig. 9

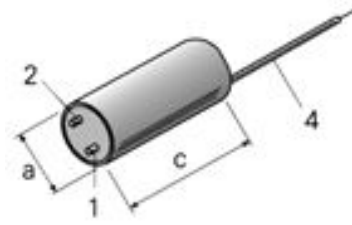


Fig. 10

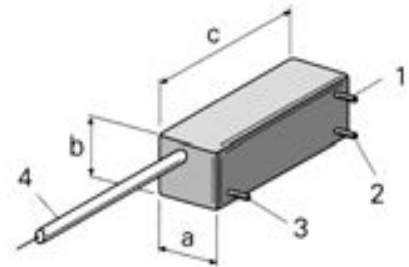


Fig. 11

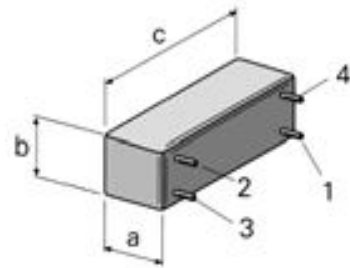


Fig. 12

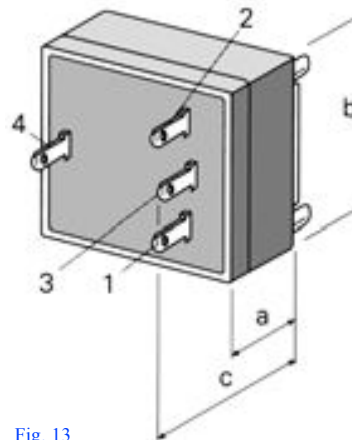


Fig. 13

Trigger Capacitor CZ / $\mu\text{F}$	Dimensions / mm			Connections Figure
	a	b	c	
0.022-0.068	4.8	4.8	7.7	101
0.047-0.22	8	8	16	102
0.047-0.22	8	8	16	102
0.047-0.22	8	8	16	101
0.047-0.22	8	8	16	102
0.047-0.22	8	8	16	102
0.047-0.22	8	8	16	103
0.1-0.47	16	-	35	101
0.1-0.47	16	-	35	102
0.1-0.47	16	-	35	102
0.1-0.47	16	-	35	101
0.1-0.47	17	17	43	102
0.1-0.22	18	15,5	25,4	102

Trigger Capacitor CZ / $\mu\text{F}$	Dimensions / mm			Connections of prim. and sec. Figure
	a	b	c	
0.47 - 1	32	45	37	102



Fig. 101



Fig. 102



Fig. 103

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