

Surge protection circuit

When surge voltage applies to input terminal, the module is protected by the protection circuit in Fig 1. In this circuit, TR2 shuts off the fast, high voltage spikes.

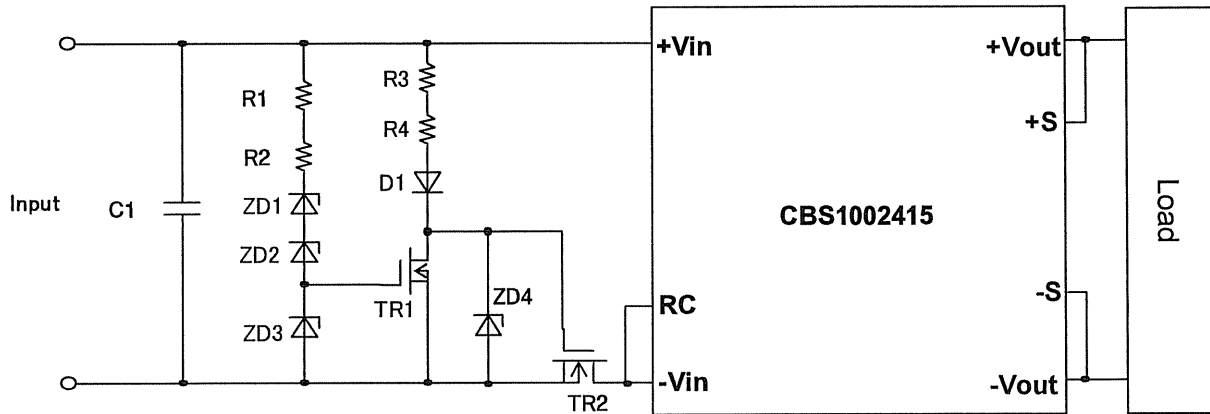


Fig 1. Example circuit for surge protection

Table 1. components value list

R1	2W, 43k ohm	TR1	30V, 1A or more	ZD1	0.8W, 16V
R2	2W, 43k ohm	TR2	SPW20N60C3(Infineon)	ZD2	0.8W, 16V
R3	2W, 68k ohm	D1	100V, 1A or more	ZD3	0.8W, 10V
R4	2W, 68k ohm	C1	630V, 1uF	ZD4	0.8W, 10V

Table 2. The relationship between Input voltage condition and output voltage

Input voltage	Output voltage
0V ~ 20V	no output or unstable
20V ~ 36V	rated output
36V ~ 500V	no output or unstable

- * Surge voltage is +500Vmax and 10ms or less.
- * Rated input voltage range must be within 20V to 36V.
Input voltage will drop approximately 1.1V in TR2.
- * Heat sink is required for TR2 for heat radiation.
- * The module will stop its operation at approximately 42V input or more.
- * Please follow instruction manual and application manual for other required component such as EMI filter.

Please evaluate under end-use condition sufficiently before use.