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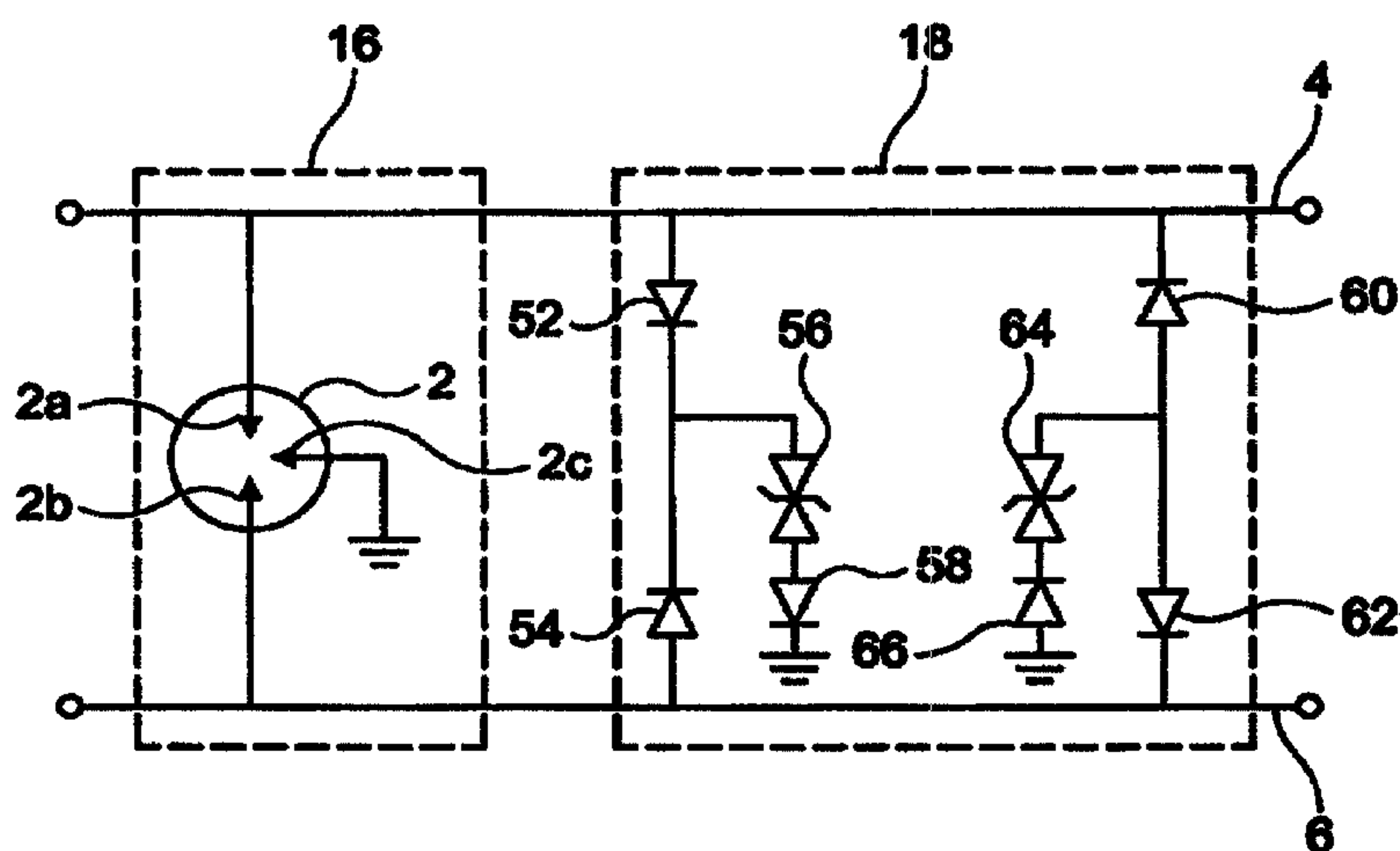
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(54) PROTECTION CONTRE LES SURTENSIONS A FAIBLE
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GRANDE VITESSE

(54) LOW CAPACITANCE SURGE PROTECTOR FOR HIGH SPEED
DATA TRANSMISSION



(57) A surge protector circuit and method of protecting electronic equipment which do not load down a circuit at high frequencies and do not degrade a signal in high speed data transmission. A gas tube (2) is connected in parallel with low capacitance diodes (52, 54, 58, 60, 62, 66) and an avalanche semiconductor device (56, 64), such as a TVS. The diodes and the avalanche semiconductor clamp the voltage transient and allow the slower gas tube more time to fire, discharging the surge. The addition of the low capacitance diodes in series with the avalanche semiconductor, reduces the line-to-line and line-to-ground capacitances of the surge protector and keeps the surge protector circuit from loading down the rest of the circuit and degrading the signal.

LOW CAPACITANCE SURGE PROTECTOR FOR HIGH SPEED DATA TRANSMISSION

5 This application claims the benefit of United States provisional patent application Serial No. 60/087,323, filed May 29, 1998, entitled "Low Capacitance Surge Protector for High Speed Data Transmission," the disclosure of which is incorporated herein by reference.

BACKGROUND OF THE INVENTION

Field of the Invention

10 This invention relates to methods and apparatus for suppressing transient voltages and current spikes on high speed transmission lines for the purpose of protecting electronic equipment.

Description of the Prior Art

15 Prior art systems for protecting electrical equipment from the damaging effects of voltage transients and current spikes associated with energy surges are well known. Such systems have included the use of gas dissipating tubes, semiconductor devices, 20 or some combination thereof.

Gas dissipating tubes, or spark gaps, dissipate energy by producing an electrical arcing to ground. This arcing occurs through the ionization of a gas of known dielectric strength during an electrical surge condition.

25 While gas dissipating tubes provide sufficient suppression for most energy surges, their relatively slow response time results in a failure to suppress fast rise time voltage transients and current spikes. Such transients and spikes are capable of destroying electrical equipment connected to the electrical line upon which the 30 voltage transients and current spikes are induced.

