

UNITED STATES PATENT AND TRADEMARK OFFICE
BEFORE THE PATENT TRIAL AND APPEAL BOARD

FUJITSU SEMICONDUCTOR AMERICA, INC., THE GILLETTE COMPANY, ADVANCED MICRO DEVICES, INC., RENESAS ELECTRONICS CORPORATION, RENESAS ELECTRONIC AMERICA, INC., GLOBALFOUNDRIES U.S., INC., GLOBALFOUNDRIES DRESDEN MODULE ONE LLC & CO. KG, GLOBALFOUNDRIES DRESDEN MODULE TWO LLC & CO. KG, TOSHIBA AMERICA ELECTRONIC COMPONENTS, INC., TOSHIBA AMERICA ELECTRONIC INFORMATION SYSTEMS, INC., and TOSHIBA CORPORATION,

Petitioners

v.

ZOND, LLC

Patent Owner

U.S. Patent Nos. 7,808,184 and 8,125,155

Cases IPR2014-00477; IPR2014-0479; IPR2014-00799; IPR2014-00803

Patent Owner's Demonstrative Exhibits

Dr. Chistyakov's Disclosure

Control Voltage Amplitude

"The pulsed power supply 102 can be programmed to generate voltage pulses of various shapes." ('184 Patent, col. 6)

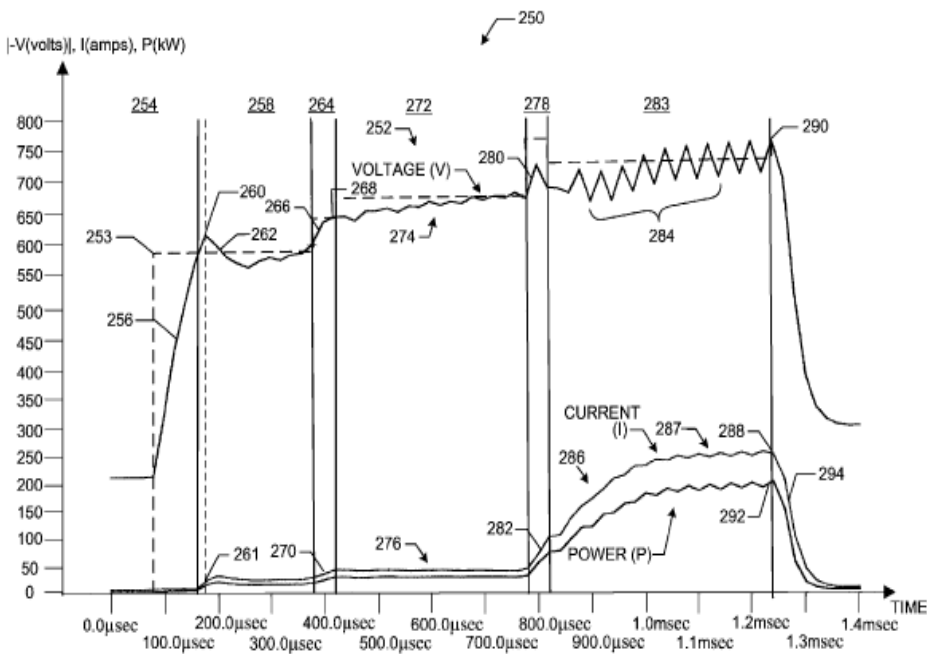


FIG. 4

"The desired pulse shapes requested by the pulsed power supply 102 are superimposed on the dotted lines 304, 304', and 304'' on the respective multi-stage voltage pulses 302, 302', and 302''." ('184 Patent, col. 11, lines 60).

"The pulsed power supply 102 attempts to maintain a constant voltage." ('184 Patent, col. 7, lines 62 – 63).

"The magnitude of the voltage 280 of the second transient stage 278 is chosen to generate a strong enough electric field." ('184 Patent, col. 9, lines 61 – 63).

Dr. Chistyakov's Disclosure

Selectable Output Energy Cap

"In the **low power mode**, the **pulsed power supply 102** supplies energy to the initial plasma at a **relatively slow rate**." ('184 patent, col. 11, lines 33 – 40).

"[T]he **pulsed power supply 102** does not supply **enough energy in the low-power mode** to drive the transient plasma into the strongly-ionized state..." (184 patent, col. 12, lines 33 – 40).

"Since there is **insufficient energy stored in the plasma**, the **pulsed power supply 102 in the low-power mode** is unable to create conditions that can sustain a plasma in a strongly ionized state, ..." (184 patent, col. 12, lines 41 – 43).

"[T]he **pulsed power supply 102** transitions from the **low-power mode to the high-power mode**." (184 patent, col. 14, lines 62 – 65).

"[T]he **pulsed power supply 102 (in the high-power mode)** supplies a sufficient amount of **uninterrupted power** to drive the weakly ionized plasma from the transient non-steady state to a **strongly-ionized state**." ('184 Patent col. 15, lines 1 – 5).

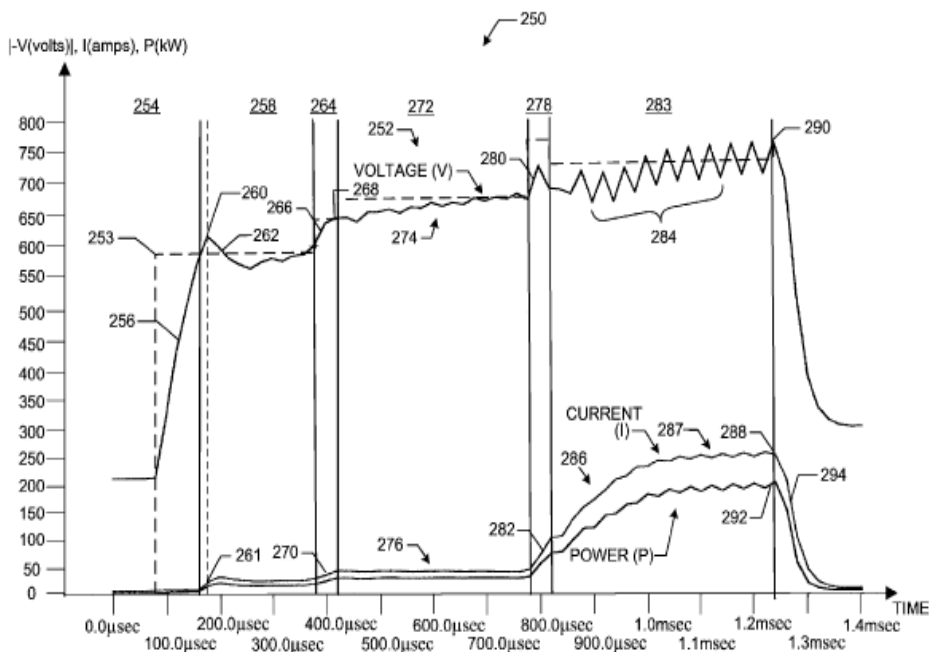


FIG. 4

Dr. Chistyakov's Disclosure

Control Rise Time

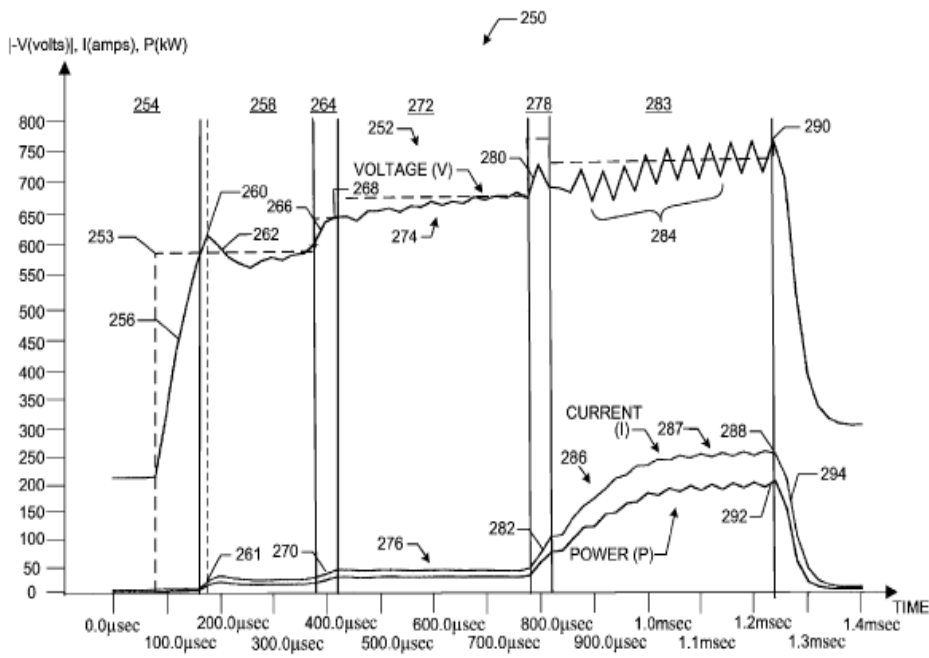


FIG. 4

“The pulsed power supply 102 can be programmed to generate voltage pulses of various shapes.” (‘184 Patent, col. 12).

“The peak plasma density can be controlled by controlling the slope of the rise time of the voltage pulse 252.” (‘184 Patent, col. 17).

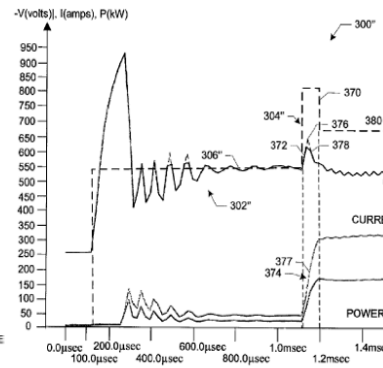
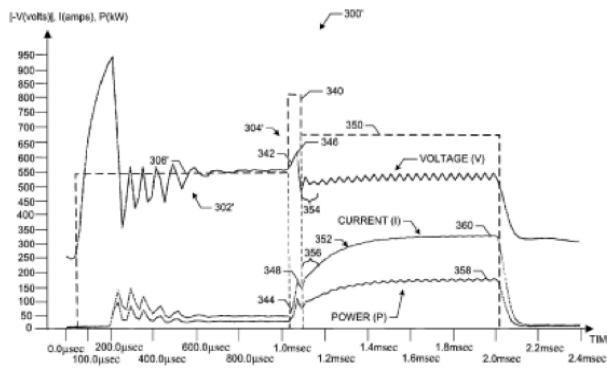
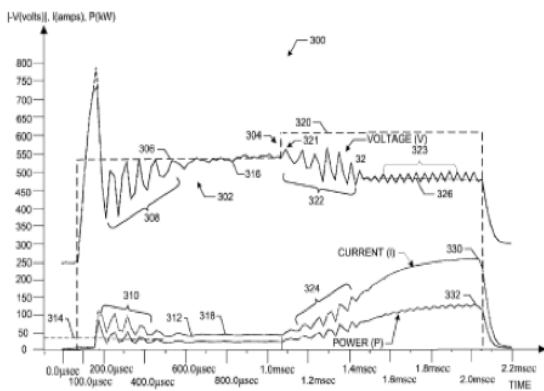
“The rise time of the voltage 280 in the transient stage 278 is chosen.” (‘184 Patent, col. 9, lines 55 – 59).

Dr. Chistyakov's Disclosure

Fig. 5A

Fig. 5B

Fig. 5C



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